

UNIVERSITY OF HULL

**Family Business Corporate Performance and Capital Structure:  
Evidence from Saudi Arabia**

A thesis submitted for the degree of Doctor of Philosophy  
at the University of Hull

By

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## **Dedication**

**This work is dedicated to my mother and father, my wife, my  
lovely daughters and son, (Fajr, Abdulmajeed, and Fai), my  
brothers, and my sisters.**

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## ABSTRACT

Agency costs, ownership concentration, firm performance, and capital structure are four constructs that have been extensively examined in finance literature. The effect of agency costs and ownership concentration on firm performance and capital structure, however, has been under-researched despite the formulation of theoretical propositions regarding the relationship between these constructs. The Saudi Arabian economy is characterized by a large number of family-owned businesses. However, few studies have investigated family firms in the context of capital market research. Nevertheless, in a study of the top 300 manufacturing and top 50 merchandising and other companies based on the 1965 Fortune 500 list (Burch, 1972), it was found that more than 47% of these publicly firms in the US were controlled by families.

This research addresses the following questions: Is there any significant difference in agency costs between family firms and non-family firms? Do family-owned firms perform better? Does concentration of ownership affect firm performance? In addition, the research addresses the determinants of capital structure: Is there a difference in capital structure between family and non-family firms?

The main objectives of this research attempt to fill a research gap in the relationship between separation of ownership and control, as well as the relationship among ownership concentration, firm performance, and determinants of capital structure in one of the emerging markets, Saudi Arabia. This offers an ideal opportunity to examine the determinants of capital structure in an environment free of taxation when comparing family and non-family firms. Saudi Arabia, in particular, has not been the focus of any such study, especially regarding agency costs in family-controlled firms. The present study, therefore, will provide new insights which will contribute to greater understanding of the concept of agency costs.

Chapter five of this study will examine the relationship between board mechanisms (board size, family member as a (CEO family) and CEO/Chair non-duality), ownership concentration, managerial ownership, agency costs, and firm performance (ROA, Tobin's Q, and stock market return). The results of this study reveal that board mechanisms, managerial ownership, and agency costs affect firm performance, while ownership concentration has no affect on firm performance. In chapter six, "Determinants of Capital Structure", the study identifies a significant difference between the capital choices of

family and non-family Saudi firms. Overall, there is a difference between family and non-family firms' performance and determinants of capital structure.

This study was implemented through a quantitative approach. Secondary data obtained from published annual financial report data and the DataStream database were analysed to test the impact of agency costs and family ownership on firm performance and the determinants of capital structure. To ensure confidence in these estimates, this thesis uses two-stage least squares (2SLS) to answer the research questions and to address the issues of endogeneity and unobserved heterogeneity. The focus of the investigation was firms listed on the Saudi Stock Market Exchange (SSE). The dataset is a panel of all firms on the SSE from 2006-2013, excluding financial firms. This study is important because the problem of agency costs has not previously been studied in the Saudi context, so this study will contribute to understanding agency theory in family businesses. It will have a practical benefit for firms, addressing government problems, and the stock exchange in Saudi Arabia.

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# CHAPTER ONE

## INTRODUCTION

### 1.0 Research Importance and Motivation

The influence of family on businesses emerged as an academic field of study about twenty years ago (Astrachan, 2003). The family business was studied from another perspective before the 1980s; this research was basically focused more on family dynamics rather than the business itself. However, with the recently increased attention towards this field, studies are focusing on defining the domain of the field. Previously, the inquiries pertained to the definition of family businesses and pointing out the differences between family firms and non-family firms (Chua et al.1999; 2003).

Therefore, a gap has been created in understanding family businesses. In 2001, there were only 45 articles available on family businesses in major journals since 1958, as stated by Schulze et al., which makes an average of one article per year. Major journals such as the *Academy of Management Journal*, the *Academy of Management Review*, and the *Journal of Finance* have repeatedly published research on family businesses. In 2003, special issues on family businesses were published in top-ranking journals such as the *Journal of Business Venturing*. According to Zahra and Sharma (2004), only five sessions focused on family business out of the 1,200 sessions at the Academy of Management's 2004 annual conference. This shows the lack of interest in this field.

However, the importance of this field is now being realized, and this research will address this topic in the Middle East (Saudi Arabia), which will be an interesting contribution to the literature. Also, people are beginning to realize the importance of family businesses and the significance of agency theory in the governance of family businesses.

The last decade has witnessed a noticeable change in the Saudi business environment due to the increased regulatory measures applied to the Saudi Stock Exchange and the introduction of new ethical standards and accounting guidelines for corporations, with the intention of enhancing performance. It was assumed that auditing reform and the introduction of corporate governance mechanisms would facilitate effective monitoring and reduce the problems of unclear and asymmetrical information. Nevertheless, the impact of such measures on the Saudi Stock Exchange has not yet been ascertained.

However, the erosion of investors' trust following the corporate scandals and financial crises that occurred between 2006 and 2008 has given rise to questions about the effectiveness of such measures and their appropriateness in the Saudi context (Alrehaily, 2008). Concerns have also been raised in recent years about the growing incidence of insider trading in Saudi Arabia. The finding of a positive relationship between insider trading and firm performance (Jaggi & Tsui, 2007) raises the possibility that Saudi managers have used insider trading to maximize their own gains.

Another issue in the Saudi context is the high prevalence, among listed companies, of family-controlled firms whose members may seek their own private benefits through their management. Growing concerns about such practices have been reflected in the widespread demand for the review, evaluation, and development of regulations and governance mechanisms to protect companies and enhance their performance (Saudi Accountancy Journal, 2009). Against this background, and with the growing pressure on both academics and policy makers to address these issues, an investigation of agency costs and of the relationship between ownership concentration in family and non-family firms and corporate performance is clearly opportune. The effectiveness of corporate governance in Saudi Arabia may be impeded by cultural characteristics of the Saudi business context, such as insufficient independence of board members, the vesting of chairman and Chief Executive Officer (CEO) authority to one individual, and ownership concentration. Moreover, like other developing countries, Saudi Arabia has low investor rights and ineffective regulations (Leuz et al., 2003).

Family-owned businesses are taking over the Saudi Arabian business environment. Most of these firms are beginners in comparison to their peers, being in business for less than 60 years. The majority of these firms started as small trading companies which later spread their areas of operation to a range of trades. A majority of family-owned firms in Saudi Arabia are directed by first or second generation family members. However, there are a few examples of firms with members of the third generation showing active involvement. Although new to the business world, a few family-owned businesses have gained cross-border popularity in the last 20 or 30 years.

Most of the family-owned firms in Saudi Arabia (KSA) show differences from the ones in the West for a number of reasons which are typical for developing markets and cultural customs of the region. Some of these differences are a lack of foreign competition, plentiful business prospects, and ease of access to funds, business networks, and

knowledge. Another difference is the retention of governance of these firms within family. The majority of family-run firms in Saudi Arabia are managed by family members, with quite a few of them still being directed or governed by their founding members.

When compared, the corporate governance framework in the UK and the US differ from the Saudi Arabian business environment, especially regarding board structures and ownership structures. Saudi Arabian ownership is usually comprised of extensive family or individual groups, state ownership, and foreign investors, including dispersed shareholdings (Piesse et al., 2012).

There are some differences in the board structures' governance frameworks among Saudi Arabia, the United Kingdom and the United States, as indicated by Piesse et al. (2012). For instance, there is usually a large number of shareholders on the board of directors in Saudi firms, while there are less for the UK and the US firms (Piesse et al., 2012). In UK and US firms, the chairman is chosen by the board members, Saudi Arabian firms choose the chairman based on the decision of shareholders (Piesse et al., 2012).

One of the reasons that the Saudi capital market is very active is because foreign investors have been attracted to investing their resources into Saudi Arabia due to globalization and privatization of companies. On the other hand, according to the listed firms, the proportion of foreign investments is low. Researching this market will give foreign investors a clear picture of the Saudi market and the relationship between corporate governance systems and firm performance. Also, the outcome of this research will guide investors who aim to invest in Saudi companies. Increasing the proportion of foreign investors in the Saudi capital market could bring an advantage to the Saudi economy in general.

There are several important features of this analysis, which, we believe, contribute to the literature on agency theory and corporate governance in several ways. First, a discussion and an examination of the characteristics of family and non-family firms will provide interesting results. We also consider whether the classical agency theory of conflict between managers and shareholders existing in Saudi firms. Second, it will contribute to understanding the role of agency issues in a developing country context, in line with Shleifer and Vishny's (1997) call for more international studies on corporate finance.



Third, the description and analysis in this thesis will therefore also serve to highlight those concepts relevant to understanding why family firms might behave and perform differently than their non-family counterparts. In particular, a discussion of the effect and control of agency costs will be provided. Fourth, there is relatively little work addressing agency issues that may be dominant in different countries, so our study is important for filling this gap. Therefore, it is important to know how corporate governance and capital structure theories work in different countries, especially those with different traditions and institutional factors regarding the measurement of family ownership.

All these considerations lead to the investigation of the issues of agency costs, ownership concentration, performance, and determinants of capital structure in the emerging market of Saudi Arabia.

### **1.1 Significance of the Research and Contribution**

We examine different theoretical propositions on the determinants of firm performance and capital structure. Particular emphasis is placed on the influence of family ownership of firms and whether performance and capital structure have different determinants within family firms compared with non-family firms. However this research will try to determine factors that affect performance and capital structure in a unique institutional environment such as Saudi Arabia.

Most other studies suffer from the problem that family ownership is not accurately measured. An advantage of this research is the avoidance of significant measurement error (biased and inconsistent results are largely avoided). Family ownership is relatively easy to track in KSA and there are, potentially, fewer biases in the measurement and determination of family ownership than what may be the case in other settings, because in family businesses in Saudi Arabia, it is easy to identify the names of family members in the company since the entire family has the same family name, whether they are male or female, married or unmarried; Islamic law in Saudi Arabia states that a woman keeps the name of her father after marriage.

Moreover, this thesis fills a gap on research of family companies, which was probably due to the lack of data on those companies (Hall et al., 2004). It is quite likely that the corporate performance and capital structures of family companies will differ from non-

family companies. Accordingly, conducting analysis of both family and non-family companies and comparing the results may be particularly fruitful.

Also, Saudi Arabia offers an ideal opportunity to examine the determinants of capital structure in an environment free of taxation. Germany's differential taxation system was used by Buettner et al. (2006) to analyse the effect of taxes on capital structure decisions. However, in order to better understand this effect, it is useful to analyse countries like Saudi Arabia which are tax free; this is a contribution of this research.

Whilst issues of agency costs, ownership concentration, company performance, and determinants of capital structure have been extensively studied in the US and UK contexts, and also to some extent in developing and Asian contexts, the Middle East region remains comparatively under-researched in this respect. In addition, to the best of my knowledge, Saudi Arabia particularly has not been the focus of any such study, especially regarding agency costs in family-controlled firms. The present study, therefore, will provide new insights which will contribute to a greater understanding of agency costs.

The study may also have practical value for financial management, regulators, and legislators, given that in Saudi Arabia, the separation of ownership and control and implementations of corporate governance mechanisms are still in their infancy as it takes steps to address the issues raised by the financial crisis.

Capital structure theories mention very little about inter-country differences in corporate financing patterns. No existing theory explains how country-specific factors affect firms' capital structures. Cross-country empirical studies (such as Booth et al., 2001; Giannetti, 2003; Hall et al., 2004; De Jong et al., 2007) assert that the influence of institutional characteristics is as important as the influence of firms' characteristics on a corporate leverage level. However, our knowledge of capital structure has mostly been derived from a large volume of research conducted in developed countries, with very little from developing countries. Therefore, it is important to know how capital structure theories work in different countries, especially those with different traditions and institutional factors.

## **1.2 Research Scope**

This study explores the determinants of firm performance and capital structure for firms listed on the Saudi Stock Exchange (SSE). Family firms are targeted because of the dominance in the Saudi Market of family-owned firms, whose boards of directors and committees come under family control. Ownership concentration is a second focus, based on the assumption that this can provide an internal or external governance mechanism, which may afford protection to both shareholders and stockholders.

Non-listed companies, financial companies, and insurance companies are excluded from this research, due to the differences in how they operate and apply regulations. The research covers the period of 2006-2013, during which corporate governance reforms began to be implemented in Saudi Arabia.

## **1.3 Thesis Structure and Findings**

This thesis consists of eight chapters, as shown in figure 1.1. The current chapter has presented an overview of the study, research objectives, and motivation. Chapter Two provides a summary of the literature in relation to family business, agency costs, ownership concentration, and firm performance. Chapter Three is an overview of the KSA market. Chapter Four presents the family firms and preliminary analysis of behaviour; in this chapter, we provide the data collection, sample, the process of data analysis, and research questions. We define a family firm in this chapter as one where the family owns at least 10 percent of the company and has a family member on the board of directors. This study uses 784 observations representing non-financial Saudi-listed firms recorded from 2006 to 2013. Based on our analysis in this chapter, most listed firms are family firms and the boards and management are frequently dominated by the families. Family members are involved in the management of the firms, as chairmen of board, board members, or senior managers. Overall, there is a difference between family and non-family firms and the chart analysis in section 4.10 shows that that family firms have less volatile patterns of returns and in the long term seem to be more stable than non-family firms. However, in the short term, non-family firms receive higher returns than family firms. Chapter Five contains the determinants of performance. Our analysis in this chapter shows that ownership concentration has no relationship with firm performance in family firms; also, the findings provide an insignificant relationship between managerial ownership and profitability measured by Tobin's Q or ROA, in

family or non-family firms. Conversely, managerial ownership in non-family firms has a significant negative relationship when market returns (MR). Performance and board size in family firms showed a significant positive relationship when using ROA. Performance and agency costs (assets turnover) in family and non-family firms had a significantly positive (negative) relationship. Chapter six discusses determinants of capital structure. The study found a significant difference between the capital choices of Saudi family and non-family firms; in general, Saudi firms have significantly lower amounts of total debt. The Saudi listed firms used equity finance more than debt finance. The major reason for this preference is that the tax rate (zakat) imposed on the firms is almost zero, and because of this the tax advantage of debt is limited. In the non-tax Arab countries, like Saudi Arabia, there is no difference between the use of debt and the use of equity as there is no tax advantage of debt for corporations and the investors have no tax advantage of equity. Chapter seven provides the conclusions for this study.

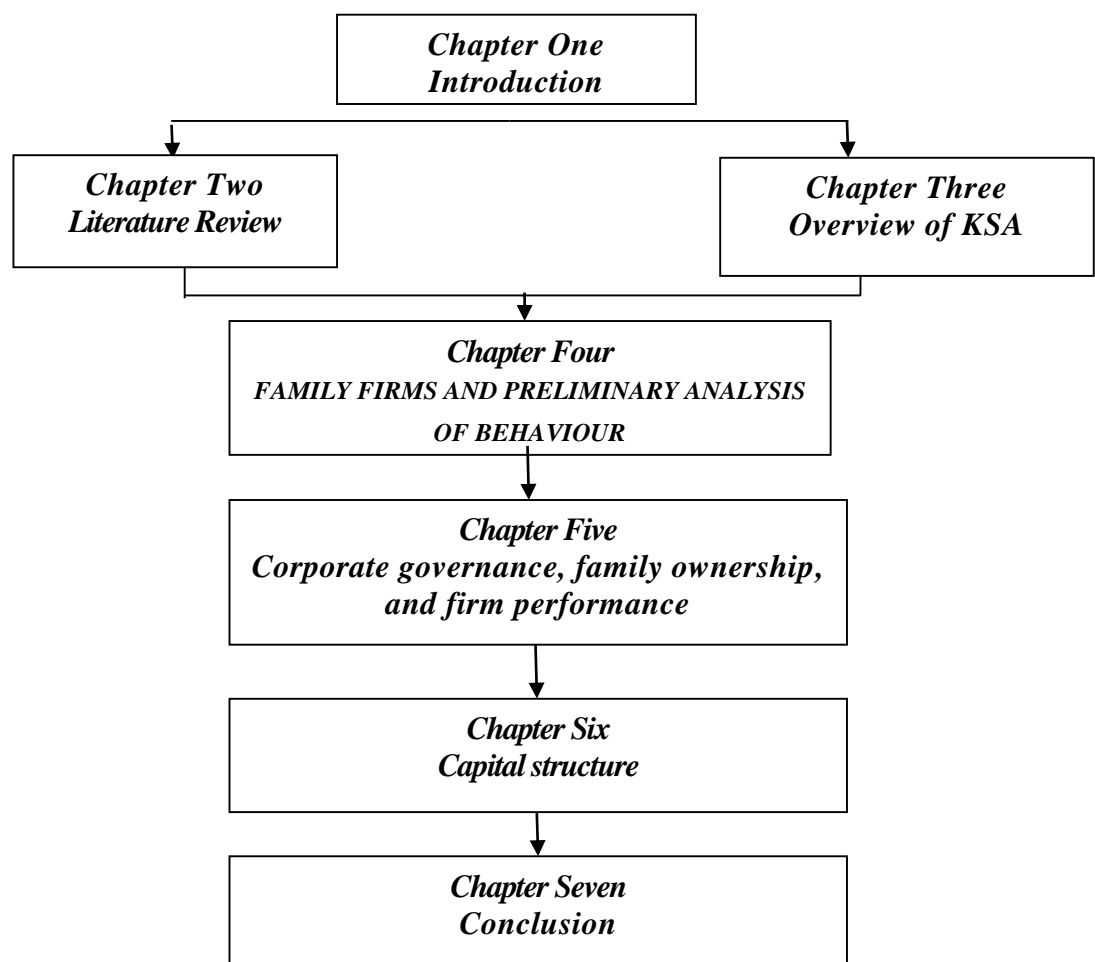


Figure 1.1: Structure of the thesis

# CHAPTER TWO

## LITERATURE REVIEW

### 2.0. Introduction

The previous chapter discussed the overall research problem, research objectives, and the importance of the study, scope of the study, and thesis structure. This chapter is allocated to reviewing the literature related to agency costs, ownership concentration, firm performance, and determinants of capital structure in family firms. Thus, this chapter is organized as follows: section 2.1 discusses agency theory, section 2.2 discusses family businesses, section 2.3 discusses corporate performance, section 2.4 discusses capital structure, and section 2.5 provides the conclusions.

### 2.1. Agency Theory

#### *2.1.1. Separation of Ownership and Control*

The separation of ownership and control were the first to create the phrase by (Berle and Means, 1932). This work was further expanded, explained, and clarified by Jensen and Meckling (1976). A body of work has since been conducted in this area, with agency theory facilitating the understanding of the relationship between the owners of a business (principals) and its managers (agents), from management, strategic, and financial perspectives.

Generally, conflicts of interest arise when an unequal distribution of information and divergent interests exist between an agent representing an owner and the owners themselves. However, conflicts of interest are much less likely if both parties share similar views and therefore have no agency issues (Jensen & Meckling, 1976). This is unusual, however, as in a majority of situations managers and owners are likely to have differing objectives. In addition, an owner may not be as well informed as an agent in terms of certain decisions, actions or the agents (Ross, 1973). Agency problems may be created due to asymmetric information, and these problems can be categorized as adverse selection and moral hazards.

The agency relationship has been explained by Jensen and Meckling (1976:5) as a “contract under which one or more persons (the principals) engage another person or persons (the agent) to perform some service on their behalf that involves delegating some decision making authority to the agent”.

The basic assumption of agency theory is that managers and owners of a business have financial self-interests in their objectives. According to Eisenhardt (1989), the issue in such a relationship is the fear that management will take actions that benefit themselves, rather than the owners. Therefore, owners employ a range of tools to encourage managers to perform their work diligently, such as incentives, supervision, or monitoring. When management is not effectively supervised, the “agency problem” can arise. The agency problem can also be an issue when the interests of the owner and manager are highly divergent, when a particular decision is particularly risky, or when the assignment at hand is difficult to comprehend (Eisenhardt, 1985).

According to Jensen and Meckling (1976), there is almost always a difference in the amount and quality of information available to principals and their agents. It is more likely that the agents have better knowledge than the principals regarding day-to-day affairs and future actions and their possible consequences (Ross, 1973). When there is a difference between the amount of organisation-related information held by owners and managers, agency problems are bound to arise, such as the previously mentioned adverse selection and moral hazard. Adverse selection refers to the scenario where the agent recruited by the principal turns out to be not meeting the requirements of the organisation.

Organisations in Middle Eastern countries (including KSA) are characterised by high concentration of ownership, often in the form of family-controlled businesses. In this context and based on the agency perspective outlined above (the managers-shareholders conflict), In Saudi Arabia, the agency costs of listed companies may result from conflicts between owner-manager relationships. It could be argued that conflicts of the agency relationship may be fewer and weaker in developing countries such as Saudi Arabia.

Like most developing countries, the market in Saudi Arabia is dominated by family-owned or state-owned companies. As a result, the key potential conflict of interest in developing and emerging market countries like Saudi Arabia tends to rise not between managers and shareholders, but between shareholders.

Until recent years, agency theory has been ignored in the context of analysing family businesses on the simple assumption that family members will not conceal information and will always act in the best interests of each other. Having little or no agency costs means that a family-owned firm can be a cost-effective form of business ownership (Daily & Dollinger, 1992). Early research in this field was focused on publicly listed firms and the use of agency theory to analyse such firms, simply because the phenomenon of family business research was in its infancy. In this research and in the empirical chapter, it will be determined if there is a difference in agency costs between family and non-family firms; it will be interesting to know how agency costs will affect firm performance when comparing family and non-family firms.

Fama and Jensen (1983) claim that family-owned firms reduce their agency costs between family members, which enable better transparency and monitoring. These assumptions suggest that family-owned organisations should perform better than those that are non-family-owned. Many researchers have studied the assumptions of family-owned firms outperforming publicly owned firms and have offered counter-arguments regarding these assumptions (Anderson & Reeb, 2003a, 2003b; Chrisman et al., 2004).

Anderson et al. (2003) have studied the different categories of family-owned firms in an attempt to compare those in which the family founded the firm versus firms that were not founded by the family. They found that the decrease in agency costs is attributed to the decrease in agency problems due to good terms between family owners.

There are different kinds of family-owned firms. Family-owned firms that are owned completely by one family are also prone to encountering agency problems and incurring agency costs. According to Bergstrom (1989), the conventional behaviour of children is a strong argument against the efficacy of family ownership as the concept of selflessness is ignored when being faced with ethical concerns.

Ang et al. (2000) conducted a comparison between zero agency cost firms and those private firms with similar costs, looking at a sample of 1708 privately owned companies, all of which had to be 100% owned by the owner-manager. Agency costs were calculated as the ratio of operating expenses to sales. The four categories of privately owned firms considered for this survey were the following:

- 100% owned by the principal
- Main principal owns more than 50%

- Main family owns more than 50%
- No principal/family owns more than 50%

They found that agency costs tended to increase as the owner-manager share of ownership decreased or as the number of owners increased.

The motivational effects of increases in salaries in privately owned organisations were studied by Schulze et al. (2001), who sought to understand the changes in motivations of both family managers and outside managers with respect to salary increases. The underlying assumption to be tested was the one proposed by Jensen and Meckling, which states that family managers are always true to their business and make decisions in the interest of the business, meaning that there is no need to incentivize them. Another assumption being tested was regarding owner entrenchment and how the performance of the organisation was affected when outside people are made the adjudicators of performance. Schulze et al. (2001) made use of already published data from a family business survey of 1995, which proved that a promise of salary increase resulted in increased performance among outside managers, while the performance of family managers remained consistent. This result suggests that salary increases cannot be used as incentives to demand higher performance from family managers and the performance of a family-owned organisation tended to suffer when outside directors are appointed to supervise and monitor its progress. This shows that the agency theory cannot be directly applied to family-owned businesses, which led to the creation of modified versions of the agency theory (Schulze et al., 2003).

Ang et al. (2000) and Schulze et al. (2001) showed that there is a possibility of family-owned businesses facing agency problems and incurring agency costs; however, the research by Schulze et al. (2001) did not improve the credibility of using traditional supervisory tactics to reduce such costs. Indeed, according to Bartholomeusz and Tanewski (2006), agency costs can actually increase in family-owned organisations rather than decrease. So this can then inform the need to examine the extent of agency costs in KSA – in reference to both family and non-family-owned businesses.

In Saudi Arabia, corporate governance is still a growing concept, and the Capital Market Authority is still in the process of educating the markets on the benefits of applying good corporate governance; additionally, many of the laws and institutions are still relatively new and untested. As a result, the search for mechanisms to enhance corporate



governance and improve firm performance has mostly focused on the structure of ownership and structure of the board of directors. Hence, more research is required to propose improvements in corporate governance practice. We are interested in finding out whether or not ownership structure, in terms of separation of ownership and control, has a positive or negative effect on firm performance in Saudi Arabia. So, in this research, in chapter four we discuss agency costs in various ownership structures and explain the outline of our empirical model. This study aims to measure the effect of ownership concentration and managerial ownership on firm performance of Saudi listed firms for the period of 2006 to 2013.

### ***Agency Theory in the Saudi Corporate Environment***

The Saudi government has taken various initiatives in the past few years to reform the corporate governance regime. The 2006 Saudi Corporate Governance Code (SCGC) is a foundation of the reforms (Al-Abbas, 2009 and Robertson et al., 2013). The idea of SCGC is to focus on obligations, transparency, and responsibilities of corporate board directors in order to avoid the agency conflicts between the shareholders and the managers (Alshehri & Solomon, 2012). This is specifically related to the Saudi firms because of their high ownership concentration (Al-Abbas, 2009). Due to such high ownership concentration, the rights of small shareholders are sometimes influenced (Baydoun et al., 2013), creating an irreconcilable situation between small and large shareholders. For instance, large shareholders have the authority to appoint their relatives and friends as directors, a situation that obviously favours large shareholders over small shareholders. This kind of corporate image can have unfavourable effects on financial matters. Hence, in the setting of Saudi Arabia, the use of this hypothetical structure is very essential.

#### ***2.1.2. Ownership Concentration***

According to the traditional agency conflict, managers involved with daily business activities lead to a asymmetric information, meaning they expropriate the value of shareholders (Bhasa, 2004); This is particularly done by aiming to earn more income, privileges, job security, and even by directly manipulating the cash flow of the company (Eriotis et al., 2007). The contracts of debt can be breached, extreme rewards can be obtained, and financial information can be exaggerated to cover up the allocation of shareholder wealth to themselves because the managers are the keepers of private data and have the power to use it for personal benefit (LaFond & Watts, 2008).

If managers were given a part of the ownership, their concerns would be allied with that of the shareholders. The ownership is very concentrated in Asian countries; thus, the agency conflict is not solved by managerial ownership. The divergence between the majority and minority shareholders in Asian countries is more widespread as the decisions made by the dominant shareholders may be against the concerns of the minority shareholders. The controlling owners, who are also the board members, can gain personal benefit by using the wealth of the company for themselves, as they have power over the manager's private information. The large shareholders, who are the majority shareholders, have the privileges to protect their investments with expropriation activities, as explained by Shleifer and Vishny (1986). The main problem in emerging economies is usually the conflict of interest created by the insiders, also known as concentrated ownership.

Companies that are owned by many shareholders may also have owners from different families, and such companies tend also to have a much more diversified ownership structure. Demsetz and Lehn (1985) investigated 511 large-sized American companies and found a very wide variation in the ownership pattern. This research found that companies that were deemed risky due to their volatile operations were those where the ownership lay in a few hands rather than many, although this may not be universally true, as different industries may have different types of ownership patterns and characteristics. This research showed that for regulated industries, fewer companies have tight ownership control. A few examples were found in industries that had high family ownership percentages. A strong correlation was found between a family-controlled company and the percentage of ownership. It was also found that certain industries seem to be more welcoming of a family ownership structure, as well as an ownership structure that calls for few owners. According to Demsetz and Lehn (1985), a direct positive relation can also be seen between the control of a company residing in the hands of few owners and its ability to make a profit; therefore, a company should have strong supervision and control to perform better, which can best be brought about by having few owners.

According to Shleifer and Vishny (1997), companies that have the ownership structure separated from the managerial structure are more likely to be profitable and perform well. This may be because the owners have the motivation to supervise and control the activities of management, thereby ensuring that their investment in the firm is safe and

growing; however there may still be occasional differences in the wishes of majority and minority shareholders.

Ang et al. (2000) argue that the reducing of agency costs and problems require the ownership of a firm to be contained in few hands, with the result that there is a greater motivation to monitor and control the activities of the management. When there are only a few owners, then everyone will be required to work equally hard to monitor the activities of the managers, meaning that the problem of having free riders within the ownership structure would be less likely to arise. It has also been contended that family-owned businesses are more likely to feature ineffective monitoring because the owners will not be sufficiently aware or able to trace every action of well-trained managers. The phenomenon of ownership of firms being contained in a few hands might not always work to improve the productivity of an organisation (Burkhart et al., 1997). Despite this, it is very common to have family businesses featuring a tight ownership structure, and family owners have been found to be more likely to develop and employ a variety of techniques for the purpose of ensuring that power stays within the family.

In conclusion, as mentioned above, one objective of the study is to examine the relationship between ownership concentration and firm performance, comparing family firms and non-family firms. We are interested in finding out whether or not ownership structure has a positive or negative effect on firm performance in Saudi Arabia.

### ***Stakeholder Theory in the Saudi Corporate Environment***

Even though the Saudi governance regime is based on the Anglo-American model of corporate governance (Alshehri & Solomon, 2012; Seidl et al., 2013), a few specifications regarding the safety and protection of the rights of stakeholders and social obligation were incorporated in the 2006 SCGC. It is anticipated that Saudi corporations will now continue not only in the interests of stakeholders, but also in the interests of other employees, local communities, and governments. Organisations are also expected to be more socially responsible as the Islamic value of zakat urges altruism towards other people and society. Then again, there might be various hindrances that can delay the usage of stakeholder theory in the Saudi companies. There is a high ownership concentration in Saudi firms mainly through family shareholdings and governments, which usually give precedence to large shareholders, leading to the interests of others shareholders being overlooked. Second, the idea of effective corporate governance is still at its developing

stage in the Saudi context. Specifically, general knowledge and admiration of effective corporate governance practices is moderately less among main corporate stakeholders, which negatively affects stakeholder theory in a Saudi corporate context.

### ***2.1.3. Principal-Principal Conflicts (Majority Shareholders-Minority Shareholders)***

Principal-principal conflicts occur between two distinctive groups of shareholders, majority and minority, with majority shareholders being in a controlling position while the minority have much less influence in the management and control of the functions of a firm. Young et al. (2008) identified developing economies as facing more of these kinds of problems when compared to developed economies, which are facing the usual principal-agent conflicts.

A large number of publically owned organisations have family members as shareholders (Claessens et al., 2000; Heugens et al., 2009). These kinds of firms are willing to maintain their survival with a deep-rooted character to have long-lasting financial security for their families, and to protect them, they apparently nominate a family member to be CEO in order to further reinforce family control and authority. Family owners seem to be more hesitant to remove their share from the stock market, as they believe that they will lose authority and the strong family bond they enjoy due to a concentration of power (Thomsen & Pedersen, 2000). However, crises may arise at times of economic downfall, with controlling shareholders bearing major losses due to their larger proportion of equity, meaning that there is a chance that they may try to acquire minority shareholder benefits through an internal conspiracy. Young et al. (2008) claim that such conflicts become stronger when ownership and management rights are principally in the possession of single family owners or in the hands of one large group of shareholders, although the character of large owners usually defines the control layout of the organisation. While several research-based propositions on principal-principal conflicts have originated over time (Chen & Young, 2010; Peng & Jiang, 2010), more in-depth research work is required to provide further insight regarding the problems and functioning of these critical conflict (principal-principal conflicts).

According to Anderson and Reeb (2005), hiring a CEO who is also an owner offers the advantage of him knowing all of the information regarding minority shareholders, thereby enabling the manipulation of this minority group (Lemmon & Lins, 2003). As a result of the possession of maximum equity, the interests of the owner (CEO) may be redirected

from the external market to encourage an agreement between him and family owners in order to reap private benefits. The self-contained benefits resulting from family control are a major source of principal-principal conflicts (Young et al., 2008), potentially empowering families to sell the assets of the organisation to themselves or concerning parties at a low market price, or even to take over the most profitable parts of the company and combine them with their own privately owned firms. As a result, the minority will feel insecure and become reluctant to invest further or even to stay with the company, resulting in them selling off their shares (Boubakri et al., 2010; Young et al., 2008).

This kind of confiscation of minority rights has many forms some legal while others are illegal or involve certain undeclared deals (La Porta et al., 2000). This forceful confiscation of benefits is gained by three factors: (1) involvement in operations that promote family, personal or political agendas at the cost of organisational performance (e.g., massive diversification) (Backman, 1999); (2) allocating non-qualified and non-deserving persons, like family members, friends, and other acquaintances, to key positions (Faccio et al., 2001); (3) and those in power with controlling shares selling products and services at below market prices and purchasing at prices higher than the market rates to firms that are owned by them (Chang & Hong, 2000; Khanna & Rivkin, 2001). These kinds of actions that control shareholders usually result in the acquisition and transfer of value and benefits from minority shareholders (Shleifer & Vishny, 1997).

The two distinctive kinds of conflicts principal-principal and principal-agent conflicts in developing and developed economies are primarily related to the inherent difference in the structure of institutions and systems. The regulatory bodies in developed nations tend to have stronger law enforcement and regulations regarding acts of confiscation by majority shareholders; however, such institutions are often not active or properly developed in evolving economies. In developed countries, corporate governance is considered to be the strong institution for advertising and promoting such acts, while this is not the case in developing countries such as Saudi Arabia, due to the differences in the economic, political, and other aspects of each state.

Due to the high concentration of ownership in various Western and East Asian countries including Saudi Arabia, organizational issues are usually the result of the contention between the large shareholders and other shareholders (Dharwadkar et al., 2000). Young et al. (2008) referred to it as the “principal-principal problem.” The absence of principal-

agent issues under the principal-principal problem does not imply that companies will be seeking pure profit-obtaining activities.

Corporate governance could have a different influence through various economic, sociological, and institutional fundamentals in emerging economies. Various factors of emerging economies that engender the principal-principal problem are as follows:

- Extensive family-ownership
- Strong intrusion of government in the corporate sector
- Fragile implementations of rules and regulations
- Existence of business groups
- Widespread diversification of firms (Claessens et al., 2002; Young et al., 2008; Christopher, 2010).

## **2.2: Family Business**

### *2.2.1. Definition of Family Business*

There are various definitions of family ownership present in the available literature. The great variety of definitions makes it problematic to make an effective comparison. This influences the scope and variation amongst the reports regarding financial return and contribution of family-run businesses to the country's economy. Miller et al. (2007) have compiled a list of 28 definitions of family firms that are used in a plethora of studies in various finance and management journals from the year 1996 to 2006.

The following are some of the diverse definitions of family business:

James (1999) frames the idea of a family business as one which is entirely or majority owned by one person or by various members of one given family. On the contrary, other researchers have shifted the definition of family business towards the concept of any business where management or active ownership responsibility is adopted by a given set of family members. Hayward (1989) states that a family business must be have 50% or more of its ownership held by a single family; in addition, a single-family group might directly run the business or have actual control of a constitutive proportion of the senior management. According to Anderson and Reeb (2003) and Villalonga and Amit (2006), the fundamental defining criteria are that family firms must have the capacity to have control on the board, are fully involved in management, and have a substantial stake as shareholders of the company.

The actual definition of family firm is a pivotal concept. It functions critically when focusing on the comparison of performance between family firms and non-family firms. As such, the results of a company's performance might be substantially influenced and thus present significant variations, on the basis of the definition of the concept of family business.

### ***2.2.2. Agency Theory in Family Firms***

According to Schleifer and Vishny (1997), if a firm is owned and controlled by a family, there is greater motivation for the owners to control the activity of the management, which results in lower agency costs. This is because the owners have the motivation to supervise and control the activities of the management, ensuring that their investment in the firm is safe and growing. Anderson et al. (2003) claim that when a firm is owned and controlled by the same people who started it, there is a greater motivation to monitor and control the activities of the management. This argument is supported by Jensen and Meckling (1976), who contend that it is logical that families who have actually started the business would be more motivated to ensure good performance compared to other shareholders of the business. This would mean that family-owned businesses would also have to pay a lower interest rate, as their business would be less risky than other publically owned businesses. Moreover, the main emotions governing the relationships between owners are selflessness, dedication, commitment, and belief in the family members, potentially explaining why such businesses would be more agile and responsive to changes in the environment, resulting in better business performance (Pollack, 1985; Coleman, 1990).

Conversely, there are points that suggest that family-owned businesses can be less productive than their publically held counterparts. For example, family-owned businesses would have a high interest rate because their risk rate would be higher due to the resources of a family-owned business being concentrated within the firm (Demsetz & Lehn, 1985). If the family members have all their assets in their own firm, the stakes would often be very high for them in the event of failure (Agrawal & Nagarjan, 1990; Gallo & Vilaseca, 1996).

The benefit of bonding, which results from the association between the members of the firms, gives family-owned organisations an edge over competitors and avoids issues of agency cost faced by non-familial businesses (Parsons, 1986; Daily & Dollinger, 1992).

Jensen and Meckling (1976) have stated that the quality of operations in family-owned firms differs from that in non-family firms, meaning that a lower level of supervision and regulation is required. This is ideal as occasionally these rules and regulations hinder the performance and productivity of these kinds of firm. Family firms also have lower associated operating costs and are more efficient in their operations (Daily & Dollinger, 1992; Kang, 2000). According to Ang et al. (2000), these enterprises are a type of institution that has no agency costs.

It is not possible, however, to characterise all family businesses according to a common set of principles and organisational setups, as they are all different. Similarly, families are not necessarily a homogenous group of individuals with similar interests (Sharma & Chua, 1997). This means that in certain scenarios, a company can be a “family firm” but still be threatened by agency problems due to conflicting interests.

Becker (1974) has provided a hypothetical justification for the statement under discussion, proposing that family ventures should be excluded from the issues of agency cost because family members will be self-motivated to increase their profits and consumption, even if their well-being is dependent on their own consumption, as this will lead to maximized family income. Parsons (1986) supports this, claiming that there is no agency cost associated with the operations of a family-based business. Similarly, Eisenhardt (1989) mentions that in clan-based businesses, people have shared goals and visions; hence there is minimal need to monitor people’s attitudes and behaviours, and there are fewer issues concerning motivational aspects.

According to the definition of family provided by Sharma et al. (1997), families do not have uniform or similar preferences; similarly, not all family businesses will necessarily have the same organisational behaviour and characteristics. Therefore, some family-owned entities might face problems related to agency, as suggested by Bergstrom (1989), who challenges Becker’s (1974) hypothesis of family selflessness. Instead, he suggests that goodwill prevailing within the family may be destroyed by uneven distribution, with children often avoiding work. Other employees in the family firm may be unaware of the problems faced by the family members (Litz, 1997; Schulze et al., 2001). This feature of a family-owned business may be problematic, with family setups being subject to internal malfunctioning (La Porta, et al., 1999). This may be because family members can exercise undue power and authority, keeping shareholders aware of the clear business picture due



to their clan-based organisation structure, which in turn reduces their chances of becoming exposed to the board of directors.

Schulze et al. (2000) have represented a different picture of the family-owned business entity, arguing that families are more likely to be run according to the notion of selflessness and family love. This makes these organisations kind-hearted and lenient towards their relatives in the firm, even if these individuals are not willing to do their jobs or have no interest in their jobs. However, a lack of objectivity and strict control in the business operations can result in biased decisions being made, making it potentially very difficult to identify poor performance and rectify it according to the business code of conduct, as well as increasing the risk of spoiling family relations.

The same point has been further elaborated by Hendry (2002), who claims that agency related problems in a family-oriented business due to honest incompetence in business operations may be harmful. There may also be a low level of expertise in specialised areas due to lack of a merit system in selection criteria, with positions being allocated based on relationships rather than professional competence. Like other business institutions, family-owned firms can also be vulnerable to principal-agent problems. These propositions suggest that family firms facing agency problems are solely concerned with economic goals, yet it is widely accepted that family firms generally have both economic and non-economic goals (Lee & Rogoff, 1996).

The difference in the goals and business interests of managers and owners can lead to the creation of agency costs. This means that when the owner is more inclined towards the achievement of non-economic goals and has the support of managers in this regard, it results in reduced agency costs, although economic performance may also fall. In a family firm, if particular positions are given to some family members, it will be in the interest of management, as the consumption of incentives can be treated as an agency cost in a non-family business. Therefore, it is difficult to identify agency cost in family firms, as it is unrelated to other benefits and does not affect the financial or competitive performance of the organisation. Therefore, the achievement of benefits that are non-financial in nature does not necessarily result in economic inefficiency (Jensen & Meckling, 1994).

Rather than simply being a hypothetical matter, the aforementioned discussion suggests certain grounds for economic development. Family firms may use their position to gain an economic edge over their competitors (Eaton et al., 2002). Chua and Schnabel (1986)

have claimed that business operations may serve to generate both monetary and non-monetary profits, with the state of steadiness potentially generating low monetary return on investment because shareholders will receive other incentives in the form of non-monetary returns on investment. This can be concluded to indicate that families receive non-monetary returns on their investments, resulting in a low monetary cost of equity capital, which may explain the global prevalence of family-owned firms.

As already mentioned previously, family ownership may be an instrument to mitigate this agency conflict between managers and owners. Due to their large ownership stake and inside knowledge, the family may have superior abilities and incentives to control the management. Moreover, the most important difference of family firms over other types of firms is related to the fact that family members often are involved in the management of the firm. In this case, family involvement is expected to be an even more effective governance mechanism. Hence, family management is expected to lead to lower levels of diversification.

To summarize the above discussion, the agency issues in family firms are likely to be created by differences in opinion between owners and management, because of their different objectives goals. However, agency costs are still potentially created by owner-lender or majority-minority owner conflicts of interest. Therefore, a comprehensive study of agency costs is required to completely understand the potential problems that can arise in this context.

### ***2.2.3 The Difference between Family Firms and Non-family Firms:***

While there are many factors that distinguish family firms from non-family firms, various studies have shown that family firms also possess the same degree of importance as non-family firms or corporations. There is a wide body of literature on the impact of family ownership and control on corporate performance, although the majority of such theories are focused on the difference between family and non-family firms in terms of corporate performance in the United States.

A large share in equity and detailed knowledge of the firm's business activities help families to handle the frequent operational problems of monitoring that are usually experienced by a complex non-family shareholder structure (Grossman & Hart, 1980; Shleifer & Vishny, 1986). Family members are not only shareholders, but they are also

directors as they are deeply involved with management and executive positions. Therefore, the traditional management-shareholder conflicts are further minimized or even non-existent. As the owner, the family is a major shareholder for more than one generation, and they may adopt a long-term management vision, hence focusing on survival as a core business objective (James, 1999). Their possession of equity is usually large and undiversified in the firm as they are not willing to give up control and power over their family business, resulting in concentrated equity possession, dominance in management and executive board positions, and a deviation of cash flow from voting rights.

Originating families have a combination of both incentives and sources for effectively managing operations, which makes them better able to lessen the traditional agency conflict between shareholders and management. A family firm consists of emotional relationships showing family ties rather than making decisions based on market competitiveness (Gomez Mejia et al., 2001). According to Bertrand and Schoar (2006), family businesses are driven by family values and norms. Therefore, all these propositions seem to suggest that family-owned organisations perform better (Barontini & Caprio, 2006; Sraer & Thesmar, 2007).

There is no concrete definition for family firms. Westhead et al. (1998) studied the prevailing definitions of family firms being used in other research. The explanation for such research related to family firms is based on the notion that family firms and non-family firms are different, but it is quite difficult to distinguish between the family firm and non-family firm; the issue lies in the hidden or overlapping areas of both kinds of firms.

Our study contributes to this literature and focuses on the question of whether family firms differ from non-family firms in performance and capital structure. In this sense, our study is certainly most closely related to the paper of Anderson and Reeb (2003b), who conclude that the question of how family ownership affects firm performance and capital structure remains an empirical issue.

#### ***2.2.4 Empirical Studies of Family-owned Businesses***

Various studies have been conducted on the dynamics of family-owned businesses (Miller et al., 2006; Lester and Canella, 2007). The sheer amount of research is a

testament to the fact that family-owned businesses are an integral part of any economy, so they need to be understood thoroughly. Morck et al. (2005) claim that there is a consistently growing population of family owned businesses in almost every economy, pervading over big companies and hardly ever giving power to outsiders. The US seems to have the greatest incidence of management control residing within a family (Anderson & Reeb, 2003). Countries in the Western European region seem to share the same traits as their American counterparts (Faccio & Lang, 2002).

According to Faccio and Lang (2002), approximately 23.7% of firms in the UK are owned by families, using a sample with a twenty percent threshold. As shown by a study conducted by Burkhart et al. (2003), the phenomenon of family-owned businesses is quite widespread across the globe. Moreover, this phenomenon is particularly common among businesses that are listed (Claessens et al., 2000; Faccio & Lang, 2002). The two most common traits of family-owned businesses are that they do not invest their money and resources outside the firm and the family members have massive stockpiles of shares to keep the firm closely bound within the confines of the family ownership. There is no shortage of studies and research contending that it is beneficial for a firm to have a family as management and that this arrangement actually benefits the organisation and its stakeholders.

There are many studies that have identified a strong positive correlation between family ownership and control, as well as the various levels of achievement by the firm. According to Martikainen et al. (2008), the global results of benefits of family-owned firms are slightly skewed in favour of family firms, partly because US and Western European family-owned firms have been proven to perform better than non-family-owned firms. Conversely, there are also many studies showing a negative correlation between family ownership and control and the success of firms (Miller et al., 2007). This pronounced contradiction among studies hinders the production of a definitive conclusion. Gulbrandsen and Schone (2005) claim that the benefits of minority shareholders can be highly undermined by firms that are being run by a family.

## **2.3. Corporate Performance**

### ***2.3.1. Agency Costs and Ownership***

Shareholders can also actively participate in monitoring business operations, although this capacity for involvement or supervision is directly proportional to their share in

equity (Grossman & Hart, 1988); this means that a larger share of equity offers greater incentives and authority to supervise management and to suggest greater performance, to ensure higher returns and to protect investments. In contrast, those with fewer shares have less incentive to monitor business operations and play an active role in investment management.

Research suggests that larger shareholders may reduce the agency problems linked with managers, although they may also harm the organisation by creating conflicts between large and minority shareholders. This problem begins when large shareholders acquire power and authority, leading them to manipulate procedures and profits at the expense of minority shareholders (Shleifer & Vishny, 1997). Gomez (2000) argues that these self-interest incentives are stronger when shareholders face low regulatory control, or a limited legal system. The existence of concentrated shareholdings leads to low diversification, low stock growth, and low market liquidation, which results in majority shareholders being tempted to seize company resources for their own self-interest (Beiner et al., 2004).

The entrepreneurial setup is the simplest form of the business. This kind of business setup has zero agency cost as it is owned and operated by an individual. However, when an owner hires an outsider to assist in business operations, this can lead to the reduction of profits and increased operating costs due to nonalignment of business interests and supervision. Therefore, agency costs have been observed to be much higher if the manager is not the owner of the firm; this problem is even worse when there are several owners (family members) or when the managers have little or no equity.

In a simple organisation structure with just one owner, the individual gets complete benefits as an outcome of the core principles of management because he bears all the agency costs and is the sole decision making authority in all management related issues. When progressing from a simple structure to a matrix structure that involves several shareholders managing the firm operations, agency costs can be expected to be greater. As mentioned earlier in this study, as the number of shareholders increases, their shareholder stake will decrease and hence their incentive to monitor and control the business processes will also be lowered, thereby increasing the agency cost of the business. This means that an effective way to keep agency cost low is to have a relatively simple organisational and ownership structure. Having fewer shareholders will allow them to have a greater share of equity, in turn generating more power to control and

supervise managers, which minimizes agency costs. Consequently, agency costs can be expected to increase as the number of shareholders managing the business decreases. Conversely, agency costs also increase as the firm moves from a simple structure to a matrix structure.

It has been observed by Schleifer and Vishny (1986) that single ownership is potentially highly beneficial, as the owner is most likely to be keenly interested in the operations of the company by supervising the management and holding an executive position, which also helps in lessening agency problems between the owner and any managers. However, it has been argued that such an executive shareholder might begin to take undue advantage of this position and force decisions to steal wealth from minority shareholders (Dyck & Zingales, 2004; Gilson & Gordon, 2003; Roe, 2005).

To overcome the disadvantages associated with monitoring shareholders, Pagano and Roell (1998) have suggested that other shareholders may minimize the agency cost between minority and majority owners. Having a large number of shareholders improves control and management and reduces the room to manipulate or miscalculate the returns for minority shareholders (Gomes & Novaes, 2005). The model designed by Bennedsen and Wolfenzon (2000) holds that shareholders must form an alliance with other shareholders, as few of the shareholders will individually possess sufficient power to control the business operations. The formation of such alliances reduces the chances for forgery or cheating, leading to better performance in comparison to businesses that have a single controlling shareholder. The core shareholder distributes his authority among other minority shareholders, which improves the overall performance of a company. This practice of collective control can be adopted to reduce the amount of agency costs between minority and majority shareholders.

Pagano and Roell (1998) have provided certain instances in which numerous shareholders will cross examine each other, diminishing the chances of the vested interest of a single powerful shareholder, which would explain how the chances of manipulation by one powerful shareholder can be reduced by multiple non-controlling shareholders in an organisation. This means that having a greater number of non-controlling shareholders is in the interest of the organisation for the effective managing and control of the business. A similar study has been presented by Bloch and Hege (2001), who argue that firms can minimize the chances of expropriation by minimizing the difference between the stakes

of controlling shareholders and minority shareholders. A practical application of the above theories suggests that the magnitude of agency costs between minority and majority owners will be reduced, as the difference between the stakes of controlling and non-controlling shareholders decreases.

### ***2.3.2 Ownership Concentration and Corporate Performance***

The implications of ownership concentration on company profitability have been studied since Berle and Means (1932). According to the principal agent model, managers are unlikely to be interested in generating more profits unless they are under strict control by the monitoring shareholders (Prowse, 1992; Agrawal & Knoeber, 1996). Hence, if owner controlled firms generate more profits than manager controlled firms, this suggests that concentrated ownership yields better monitoring and ultimately leads to improved performance. Most studies highlight the fact that firms with concentrated ownership are expected to perform much better than a manager controlled organisation, according to principal studies from the UK and the US (Gugler, 1999; Prowse, 1992; Cho, 1998).

It may be essential to achieve stability between incentive effectiveness and risk for a particular firm seeking the most suitable and operative proprietorship arrangement, as specified by the agency theory declared by Shleifer and Vishny (1997). The owners with large shares will have effective control and will implement more influence with respect to their concerns, pushing the managers to expand the value of shareholders, even though the portfolio threat also heightens with the amplified ownership share, keeping all other aspects consistent. The level of risk faced by firms is also largely based on the nature of the business, meaning that the share of the biggest shareholder may also vary according to this variable. In addition, variations in intricacy and natures of operations exist in companies, bringing about an extensive amount of difference in the extent of regulating shareholder value in a particular company (Demsetz & Lehn, 1985). In US firms, when the factors relating to ownership concentration and return on equity were examined, it was found that no relationship existed between them.

Small shareholders in a firm have the least interest in controlling and monitoring its performance in order to maximize total shareholder value. Due to this inadequate amount of incentive, shareholding gains will be shared with other investors of the firm. When a small group of shareholders tries to acquire a large ownership stake, this gain is mostly taken up by other shareholders who may sell their shares at a superior rate based on the

increased demand being shown for the shares and the worth of a firm. This leads to a balancing act for the impact of ownership concentration on the company, as companies with large owners will perform better and minority investors will have a lower incentive to control or monitor, thus they will be less willing or able to change the ownership structure. However, increased ownership holding and improved incentives will have the least effect on performance when the marginal effect of these efforts is declining (Jensen & Ruback, 1983). Likewise, the possession of a large ownership stake in a single company shows that the owner has a non-diversified portfolio, potentially making him reluctant to take risks and more likely to expect the firm to generate returns on the investment with these low risk factors involved. In such cases, investors tend to be more hesitant to take risks when all their investments are in one particular firm, in order to minimize the chances of either considerably reducing their investment or going completely bankrupt in a hostile environment (Short, 1994).

It should be indicated that the majority of studies on ownership concentration and performance have been conducted on developed countries such as the United States and the United Kingdom, which are different from developing countries economically, politically, and institutionally (Zeitun & Tian, 2007). According corporate governance research, the performance of firm is influenced by social and cultural features, geographical position, and industrial development, along with various other factors (Pedersen & Thompson, 1997). Practical research needs to be conducted to avoid economic distress in Middle Eastern countries like Saudi Arabia.

One of the main objectives of this study is to examine the effect of ownership concentration on firm performance of listed companies in Saudi Arabia. A rare aspect of the Saudi stock exchange is that every company that is listed on the stock exchange has different ownership structures; this is because many of these companies were previously family businesses.

### ***2.3.3 Family Firms' Performance and Agency Costs***

The argument that family-owned businesses have superior performance to non-family firms was justified through application of the agency theory (Morck et al., 1988). This is largely because agency costs are lower in a family-owned business, where the interests of the owner and the manager are aligned (Jensen & Meckling, 1979). The owners will eventually benefit from this, as there will be less need to invest time and resources in



monitoring the behaviour of their agents. Effectively, family firms bring a sense of trust, unified goals, and shared values in unified governance. This is further strengthened by an integrated top-management, meaning that agency costs are reduced as there is no need to monitor (Ensley & Pearson, 2005).

Agency costs are reduced in the owner-management relationship due to alignment between the interests of risk management and growth opportunities, potentially resulting in the eventual elimination for the need of costly administration of management decisions, as the incentives to be opportunistic are reduced greatly (Fama & Jensen, 1983a, Schulz et al., 2001).

Owner-management is a typical characteristic that is not only shared by family firms, as non-family firms can also reap the benefits of owner-management to lower agency costs. While the existence of family ties between the owner and the management will provide additional benefits, this does not imply that owner-management is a family effect on the performance of a firm. If the children of the owners are involved in the firm as agents, there is no need for additional cost of monitoring, as the family members are very likely to have the trust of the owner. This idea could therefore be used by family-owned businesses to discipline the relevant decision agents (Fama & Jensen, 1983b).

The involvement of family members in ownership and management can also reduce other costs that may be needed to enhance performance. McConaughy (2000) investigated the difference between family firms with family CEOs and family firms with non-family CEOs. It was found that family CEOs were less driven by financial incentives, with the effect that they are typically paid less but their performance is not adversely affected by this. In contrast, non-family CEOs would have to be paid more to get the same results that would be expected from a family CEO. In short, this means that family firms should employ their own family members to get better results.

#### ***2.3.4 Empirical Studies in Performance of Family Firms***

Owing to the increased bonuses for monitoring management (Villalonga & Amit, 2006) and from an agency perspective, Jensen and Meckling (1976) argue that agency problems will affect family firms to a lesser extent than with non-family firms. A growing body of literature is centred on the subject of firm effectiveness and family association, with the majority of studies examining the differences of family firms from other firms and the

reasons why they are better than other firms (McConaughy et al., 2001). At the same time, another type of agency conflict exists in which the controlling family shareholders are able to utilize their power and authority to gain personal advantages from minority shareholders. Therefore, altruism and entrenchment would be the reasons for the agency costs resulting from this conflict (Chrisman et al., 2005). The distinctive assets and abilities of family firms could be the reason for this, based on the resource-based view (Chrisman et al., 2005).

Studies have concluded that the performance of family firms may be worse than that of non-family firms. When the ownership is concentrated, the rate of inefficiencies will have a negative effect on e profits. The positive effects that can be gained through the alignment of interests in concentrated ownership and management are often overshadowed by the ineffective control combined with the owner-manager's desire for family harmony and a tendency for altruistic behaviour

The functioning of family association in firms has been recorded and is categorized in negative, positive, and neutral relationships (Rutherford et al., 2008). International empirical research has been conducted in order to find evidence for these theoretical claims (Villalonga & Amit, 2006 for the US; Barontini and Caprio, 2006 for Europe).

The majority of studies have employed a two-headed strategy, with a comparison of the performance of non-family firms against the performance of family firms. The relationships of the family in terms of ownership, management, or governance are the factors that grade a firm as being run by a family. Sciascia and Mazzola (2008) attribute no importance to family involvement in ownership but find a significantly negative influence regarding its involvement in leadership, when the effects of family involvement in ownership and leadership are divided.

Conflicts that arise in a family business as they try to run the business will often lead to poor performance (Faccio et al., 2001). Those who are concerned with the performance of the family business have suggested the incorporation of professional managers with good managerial skills into leading positions as the best solution for this issue (Levinson, 1971). Some have argued that family businesses have a better opportunity to excel as they are in better control of company resources (Anderson et al., 2003; Lester et al., 2006). Differing conclusions may be due to several reasons, including the differences in methodologies used to study the case. The difference was seen in the varying definitions

that were obtained about the family firm. According to some studies, the term “family firm” was used rather subjectively, while some used it rather objectively, meaning that they asked the participants whether or not a firm was a family firm and then based their classifications on the results. Others used parameters to judge whether or not the firm was a family firm; these included percentage of family ownership, board position, and the number of members in management positions.

A diverse range of performance measures have been applied, which are very similar to the wide variety of operational definitions for family firms (Rutherford et al., 2008). The Tobin’s Q ratio, which is the total market value of the firm to total assets, and certain accounting based measures such as return on assets (ROA) have been considered by several authors (Anderson & Reeb, 2003; Barontini & Caprio, 2006). Accounting measures allow the evaluation of performance when private firms are studied, as market-based numbers are generally unavailable. However, the use of different accounting measures can produce conflicting indications regarding the true accounting performance of family firms. However, taking a better ROA for family firms when the 1-year sales growth is used shows no significant observed differences (Chrisman et al., 2004).

There is insufficient evidence present for private firms. According to Westwood and Howorth (2006), when they examined privately held firms in the UK, closely held family firms did not report superior firm performance. It was found that the characteristics of family firms were weakly connected to satisfaction regarding financial performance (Castillo & Wakefield, 2007). Sciascia and Mazzola (2008) examined the impact of family involvement on the performance of Italian private firms, finding no relationship between performance and family ownership. However, they did find a negative relationship between family involvement in management and performance.

Gorriz and Fumas (1996) studied family-owned firms in Spain, looking at profitability and productivity as a basis for comparing the performance of family-owned, owner-managed, and non-family-owned firms. Compared to the non-family-owned firms, the family firms were found to have higher productivity, but no difference was noted in terms of profitability. The firms without founding family control did not exact in efficiency and value relative to founding family-controlled firms (McConaughy et al., 1998).

By calculating performance with Tobin’s Q on the basis of return on assets and return on equity, family firms generally perform better than non-family firms (Anderson & Reeb,

2003). Furthermore, the performance was even better in family firms with an outside CEO compared to those family firms where the CEO was a family member. In a study on the effect that family ownership had on productivity among private firms in Western New York, controlling for industry, labour input, and firm age, non-family firms were found to not be as productive as family firms (Wall, 1998).

## **2.4. Capital Structure**

### ***2.4.1. Family Firms and Capital Structures from an Agency Cost Perspective***

Jensen and Meckling (1976) emphasized the significance of agency costs within corporate finance and their theory is based on the assumption that when the ownership and management are separated, the interests involved are also quite different. The relationship between the agent (manager) and the principal, such as the shareholders, is an example of this. This separation causes a divergence in the interests of the principal and the agent and tension is created between them. This raises the costs of the agency as each shareholder tries to gain as much benefit as they can without considering the interests of others.

Jensen and Meckling (1976) developed the agency theory, which indicates that the efficiency of the firm is at a maximum when the principal (owner) and the agent (management) are not separate. Family firms have used this assumption to show that their firms have no agency costs and tensions do not exist within the firm (Ang et al., 2000). Anderson and Reeb (2003) have also supported this theory and they say that incentive structures in family firms do not create many conflicts between the claimants in the agency. In certain cases, tensions do exist within family firms because of the unique nature of the incentive structures in these firms (Gomez Mejia et al., 2001). Given that the separation of ownership and control is less pronounced in private family firms since the family is a large owner and often involved in firm management, there might be less need for the disciplining/monitoring role of debt. From this perspective, leverage is expected to be lower in family firms than in non-family firms.

Private capital is most often used by family firms and the operations of the firm are closely monitored by the owners. The survival of the firm ensures the financial well-being of these owners and the incentive to monitor is very strong (Harijono, 2005). Family firms have a risk taking behaviour which is not the same as non-family firms (Daily & Dollinger 1992). The debt of the firm is kept to a minimum because of family's investment in the

business. The owners also usually wish to pass on the business to their future generations, so the firm is considered an asset to be handed over to future generations (Casson, 1999; Chami, 2001). This makes family firms different from other types of firms and they tend to take minimum risks. Family firms are also affected by the factor of altruism as the owners try to keep the family members happy. The current consumption of family firms is sometimes forgone so that future generations could benefit and risks are generally avoided. Miller et al. (2007) examined these types of firms and identified a form of stagnation in the firm which causes the owners to avoid taking risks and also leads to the absence of financial management in the firm. The resources of the firm are not used properly and the growth of the firm is affected by this stagnation because the ownership avoids taking bold decisions to enable the firm to rapidly grow.

The discussion given above may lead to the conclusion that the conflicts in family firms are less and the agency costs are minimal because the owner makes decisions which are favourable to the family and the firm. This would mean there is a negative correlation between leverage and family ownership. Some researchers suggest that such firms have a greater number of conflicts and it can limit decision making and harm the firm (Schulze et al., 2003). Schulze et al. (2001) conducted an empirical study which showed that the management of family firms is not easy because of problems related to self-control and altruism. The control of the family does not allow the firm to achieve the discipline required by the external markets, like the labour markets and corporate control. Firm resources are also not allocated properly. Gomez-Mejia et al. (2001) think that family firms have greater agency costs than other types of firms because incompetent family members working in the firm are usually not fired. They showed that the family firms operating in Spain do not usually fire CEOs if they belong to the families running the firms. The family members working in the firms are not strictly monitored or held accountable because of their relationships with the family owning the firm.

Family firms may borrow more so that they can influence the interests of the family agents and contain the undesirable effects of altruism in the firm. The family members may consider themselves to be entitled to certain privileges (Lubatkin et al., 2007). The owner of the firm can be persuaded by these family members to use the firm's resources for their own personal benefits, such as employment, perquisites, and privileges, which they would not normally receive (Schulze et al., 2003). This problem caused by the influence of the

family members can be solved by increasing the debt of the firm to a level which is greater than the level predicted by the agency theory.

The present study attempts to reduce the gap of capital structure studies which are based on evidence from developed and developing countries, since most capital structure studies to date are based on evidence from developed countries, but there are few studies that provide evidence from developing countries.

Finally, the current study investigates determinants of the capital structure of Saudi listed companies over the period of 2006-2013. Therefore, the final results could be very important for both family and non-family firms in KSA. Also, it provides further evidence of the capital structure theories which relate to developing countries. It examines the explanatory power of capital structure theories (determinants) applicable to Saudi companies and how Saudi managers of the firms choose appropriate amounts of debt for their firms.

According to the above studies, the main determinants of the capital structure are as follows: company size, tangibility, growth opportunities, free cash flow (FCF), liquidity, and ownership structure. These variables will be used in this study in chapter six. Both theoretical and empirical capital structure studies have generated many results that attempt to explain the determinants of capital structure.

To summarize, as mentioned above, one of the objectives in this study is to examine the determinants of capital structure comprising family firms with non-family firms. We are interested in finding out whether or not agency cost has an effect on firm capital structure in Saudi Arabia.

#### ***2.4.2 Taxation and Capital Structure***

The value of an organization is improved when leverage improves because of the tax shields, according to Modigliani and Miller's (1963) modified theory. This hypothesis is of less importance as the tax advantages are supposed to be smaller than asymmetric costs, supported by the pecking order theory (Shyam-Sunder & Myers, 1999).

The presence of taxation impact, alternately, has been proved in numerous works. The tax shield is predicted by Kemsley and Nissim (2002) and Graham (2003) to be around 10% of a company's value, while it is predicted to be around 5.5% in a controlling

homogenous organization by Korteweg (2010). The capital structures of multi-national companies fluctuate with each country they function in because a change in the debt ratio is observed with the change in the tax policy of that particular country, also known as the tax shield (Huizinga et al., 2008). Graham (2003) and Booth et al. (2001), however, insisted that the company's leverage ratio is directly proportional to the tax rate.

The leverage levels and the value of the company are definitely impacted by taxes, but the significance is lesser than what was predicted by Modigliani and Miller (1963). The tax, as other studies like Beattie et al. (2006) suggest, is of minimal concern as compared to the survival of the firm. The consequences of tax benefits in the static trade-off theory are that there may be no tax shields but there will be bankruptcy costs (direct and indirect), and those are also diminished by the asymmetric information costs in the pecking order theory; however, the bankruptcy costs may be more than the tax shields, as mentioned in static trade-off theory.

The trade-off theory focuses on the significance of taxation in the establishment of a firm's capital structure (Frank & Goyal, 2007). Taxation is a type of market failure that can affect the capital structure of a firm. The ramifications of static trade-off theory on the optimal leverage of the firm have been explained by Bradley et al. (1984). According to the authors, it is indicated in the trade-off theory that when bankruptcy costs, non-debt tax shields, and/or marginal tax rates to bondholders increase, the optimal leverage would decrease. On the other hand, it would increase as the tax rate on equity would increase. Therefore, the company's leverage decision is considerably effected by the tax jurisdiction under which they operate. This aspect of the literature exhibits how certain viewpoints clarify firms' leverage decisions, like dividend imputation systems within the tax regime, tax credit systems for the investor, rates of taxation for the company and the investor, and other such contemplations

Mackie-Mason (1990) argues that companies consider tax benefits when determining between issuing significant measures of either new equity or new debt. The author figures that companies are more inclined towards issuing equity when they are unable of obtaining from the tax advantage of debt. Comparatively, those companies that have considerable taxable earnings are more inclined to issue debt. However, a different result was proved by Faulkender and Petersen (2006) that clarifies that a company with more taxable earnings has less debt.

However, in Saudi Arabia, the taxation policies are quite different from those of other markets. This is due to certain culture-specific factors, which results in transformation of economic behaviours. Of the total net profit of a Saudi firm, 2.5% is taxed in the form of zakat. This deduction of zakat, although being quite minimal, can significantly influence the taxation and the capital structure decisions in the Saudi firms. More details about the tax structure in Saudi Arabia will be presented in chapter three.

### ***2.4.3. Family Ownership and Capital Structure***

The idea of family firms as an academic area of study is relatively new. Previous studies give empirical outcomes. Kim and Sorenson (1986) conducted a study which showed that a significant and positive connection existed between leverage and insider ownership. Stulz (1988) states that a greater leverage is possessed by firms having controlling block holders because they do not want to expand the ownership of the firm. A greater amount is borrowed by family firms in order to maintain control of the firm, thus averting any takeover attempts by external shareholders. Poutziouris et al. (2002) conducted a survey which shows how the fear of losing control of the firm is the most important factor which prevents the family firms from choosing to use equity financing. Family firms borrow capital even in the absence of the threat of a takeover. They do this to maintain control over the firm. It is stated by Harijono (2005) that the average debt of family firms is 20% greater than the average debt of other types of firms.

In contrast, Daily and Dollinger (1992) argue that family firms do not usually take risks and they try to avoid borrowing. Gallo et al. (2004) conducted a study which shows that family firms have a lower leverage ratio. Ampengerger et al. (2009) studied family firms in Germany and it was shown that the leverage ratio is not high in family firms. The possible correlation between family firms and debt was examined for the dimensions of ownership and supervisory and management board activities of the family that founded the firm. Anderson and Reeb (2003) showed that capital structure decisions were not affected by the insider ownership of the managers or the families.

## **2.5 Conclusion**

Most of the studies about determining performance and capital structure are applied in developed countries, so there is a great need for studies about the performance and capital



structure of firms in developing countries. However, the importance of this field is now being realized and this research will also address this topic in the Middle East (Saudi Arabia), which will be an interesting contribution to the literature. Also, people are beginning to realize the importance of family businesses and the significance of agency theory in the governance of family business, so more studies and theory developments are required in this region.

Performance and capital structure are important subjects in corporate finance. A number of theories have been developed, such as agency theory, based on separation of ownership and control. This theory was explained and clarified by Jensen and Meckling (1976). Also, the Modigliani and Miller theory on capital structure in 1958 was based on the assumption of a perfect capital market. This theory became the first of a number of theories that have been developed in capital structure.

This chapter reviewed the literature and characteristics related to corporate performance and capital structure, with a focus on family firms. The chapter was divided into four sections: (i) a critical review of agency theories, which presented the ownership concentration and separation of ownership and control; (ii) a review of the family business, which presented the definition of family firms, agency theory in family firms, and the difference between family and non-family firms; (iii) a study of corporate governance and firm performance, which discussed ownership concentration and performance, family firms' performance and agency costs, and empirical studies on performance; and (iv) capital structure, which discussed family firms, capital structure, and taxation.

# CHAPTER THREE

## OVERVIEW OF SAUDI ARABIA

### 3.0 Introduction

This chapter aims to present an overview of Saudi Arabia in order to reveal insight into its background and why it is an interesting place to research. An understanding of the fundamental underlying issues in Saudi Arabia helps the research to use some determinants and measurements; the focus of this research is to obtain an understanding regarding corporate performance and the determinants of capital structure. This research applies to Saudi listed companies and compares family and non-family firms, taking into account the information and data that is available regarding the behaviour and development of the Saudi economy and its financial legal system. There are some unique resources and functions of Saudi Arabia's economic environment. The main source of income of the government is oil. Taxes (zakat) are 2.5% of income, and the market is based on interest-free debt. These last two factors mentioned above are the main features of the Islamic financial system. These issues will be clarified in this chapter so that the analysis, outcomes, and discussion sections of this study can be better understood. After this introduction, section 3.1 will answer the question of why Saudi Arabia is an interesting place to study. Section 3.2 presents background information about Saudi corporate governance, section 3.3 presents a basic background on the Saudi exchange market, and section 3.4 discusses the capital structure in Islamic finance. Section 3.5 reveals the ownership pattern in the KSA, while section 3.6 elucidates the companies' laws and structures; section 3.8 discusses the capital market Authority and sheds light on the board of directors, section 3.9 discusses the family-owned businesses in Saudi Arabia, and section 3.10 provides the conclusion.

### 3.1 Why Saudi Arabia?

The Kingdom of Saudi Arabia is an appropriate setting to explore corporate governance and ownership structure and their relationships with performance and capital structure for several reasons. First, family ownership is relatively easy to track in KSA and there are, potentially, fewer biases in the measurement and determination of family ownership than may be the case in other settings. In family businesses in Saudi Arabia, it is easy to

identify the names of members of the family in the company. Secondly, Saudi Arabia offers an ideal opportunity to examine the determinants of capital structure in an environment free of taxation, which will contribute to filling this research gap. Thirdly, no research of this kind has been performed for Saudi Arabia, so useful insights both for KSA and the Gulf region will be provided. Although Saudi Arabia has recently adopted the Saudi Corporate Governance Code (SCGC), its recommendations are not legally binding. It is possible that the non-mandatory nature of such recommendations, along with the absence of law enforcement and relatively weak minority shareholder protection, might induce strong managers to choose a corporate governance structure that serves the interests of the controlling shareholders at the expense of minority shareholders. Hence, this environment is considered to be a useful setting to explore such potential effects.

### **3.2 Saudi Corporate Governance: Background Information**

The Kingdom of Saudi Arabia is located in the Middle East region of Asia. It has an area of approximately 2,250,000 square kilometres (868,730 square miles), which is almost one-third of the size of the United States of America. The Kingdom benefits from a strategically important location, being situated between Africa and mainland Asia. It is bordered by the Red Sea and the Arabian Gulf and the Suez Canal is northwest (Saudi Arabia Information Resource, 2006).

Saudi Arabia did not contain any officially regulated and progressive equity market up to the 1980s. At the present time, the stock market and regulations are weak, and the market is unable to protect shareholders or attract investors (Al-Matari et al., 2012). The number of public firms had increased to 14 by 1975, and the oil boom led to the development of a number of large public firms and banks, resulting in swift economic growth in the 1970s. Until the government assigned the Saudi Arabian Monetary Agency (SAMA) (Central Bank) to intensify the stock market in 1985, it remained unofficial. The Capital Market Authority (CMA) was set up in July 2003, before which the stock market was organized and controlled by SAMA since 1985 (Samba, 2009).

The regulations necessary regarding the control and attitudes of organizations and their representatives are provided only by the Saudi Company Act, which was published in 1965 (Haniffa & Hudaib, 2006). Saudi Arabia is turning out to be a substantial economy as proposed by the research of Al-Filali and Gallarotti (2012). As shown in Table 3.1, the

Saudi stock market accounted for 44% of the total Arab market capitalisation and 25% of the total Arab GDP in 2010 (SFG, 2009; Hearn et al., 2011). Owing to its substantially growing economy, Saudi Arabia has also remained a member of the G20 since 2008 (Al-Matari et al., 2012).

**Table 3.1: Securities markets of MENA countries – Middle East and North Africa**

Market	Established	Market Value (US\$ Bill)	Market Value as % of GDP	Stocks Traded, Turnover Ratio (%)
<i>Panel 1: Individual country statistics</i>				
Saudi stock market	2003	157.31	73.35	10.08
Kuwait stock exchange	1962	59.53	142.58	10.55
Abu Dhabi securities market	2000	30.36	37.85	0.46
Egypt (Alexandria/Cairo)	1888/1903	27.85	39.26	1.81
Doha securities market	1997	26.70	130.73	1.36
Dubai financial market	2000	14.28	17.81	1.95
Bourse de Casablanca	1929	13.05	29.48	4.31
Amman stock exchange	1999	10.96	110.19	3.55
Bahrain stock exchange	1989	9.70	100.99	0.27
Muscat securities market	1988	7.25	33.56	1.49
Khartoum stock exchange	1995	3.24	12.01	0.75
Iraq stock exchange	2004	2.69	3.06	0.48
Bourse de Tunis	1969	2.44	9.07	1.03
Algeria stock exchange	2003	0.14	0.22	0.01
Beirut stock exchange	1920	0.00099	0.01	0.60
<i>Panel 2: Regional statistics</i>				
Middle East and North Africa	100.00%		363.01	
Gulf Region (incl. Saudi Arabia)	84.06%		305.13	
Saudi Arabia	43.33%		157.31	
North Africa	11.98%		43.48	

Source: Hearn et al.(2011) (P.25)

In table 3.1, it's clearly seen that the annual stock turnover ratio of 10.08 is high for KSA, meaning that there is a liquid market that is more effective for corporate control. In the 2000s, the importance of the Saudi economy was not represented by the amount of its listed firms and the value of market capitalisation locally and globally, (Al-Filali & Gallarotti, 2012). The Kingdom is one of the largest economies in the Middle East and was ranked as the 22nd largest economy in the world in 2007, with a gross domestic product (GDP) of \$572,200MM in 2007. It is the world's largest producer of petrochemicals and in 2007 was ranked 21st largest exporter in the world. Its currency is the Saudi riyal (SR), with an exchange rate of \$1US = 3.75 SR (pegged since 1986).

Therefore, there was a growing call by academics, investors, and practitioners to reform the stock market and corporate governance rule in Saudi Arabia (Alshehri & Solomon, 2012). The World Bank, the International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD), and similar international systems

declared that newly developing countries like Saudi Arabia should introduce governance codes and make corporate governance a big concern (Rwegasira, 2000; Clarke, 2004).

The control of the stock market and corporate governance management has been dependent on the CMA from the time it was founded (Alshehri & Solomon, 2012). The number of firms, market capitalization, liquidity, and visibility are seen to considerably develop as a result of the stock exchange of Saudi Arabia (Alshehri & Solomon, 2012). Compared to there being 77 firms listed on the stock exchange in 2005, the number of listed firms grew to 163 by December 2013, which can be viewed in Table 3.2.

### **3.3. Saudi Stock Exchange (Tadawul)**

To promote significant development in the Saudi economy, the Saudi Stock Exchange is considered an essential requirement by the CMA. In Arabic, the stock exchange is termed “Tadawul”. For proper management of the stock exchange, the Saudi Capital Authority and prime minister have appointed a board that consists of two members from listed companies, four representatives of licensed brokerage companies, and nine colleagues who are the supervisors of different government organisations, such as the Ministry of Finance, the Ministry of Commerce and Industry, and the Saudi Arabian Monetary Agency (Tadawul, 2012).

The first joint stock company to be listed on the Saudi Stock Exchange was the Arab Automobile Company (Tadawul, 2012). While most of the companies that were based in Saudi Arabia and were listed had started operating in the mid 1930’s, it wasn’t until 1975 that the Saudi economy experienced rapid growth. Two events accompanied this growth: a sharp rise in the price of oil and a great number of shares were purchased by foreign investors. This ‘Saudisation’ of many foreign banks’ capital led to a rise in the number of joint stock banks and in the number of large companies present in the economy.

Arrangements were made for the execution of several important and necessary systems, complete with a proper set of trading regulations that were necessary for the market to function properly. Along with these arrangements, the government recognized the need for a regulatory body that could keep an eye on the market. In 1984, a committee was formed for this purpose. The objective of this government committee was to control and regulate the market activities being conducted. The Saudi Arabian Monetary Agency and the Ministry of Commerce were a part of this committee. In 2004, the Capital Market

Authority was established, with the clear goal of determining the rules and regulations that were necessary for the market to run.

As a result of all these actions, the Saudi market managed to achieve a high level of security and stability. This attracted a great deal of foreign investment into the country. Ever since the Saudi government announced a plan to privatize several key economic sectors, the rate of privatization has rapidly increased in recent years. A great number of family and private companies decided to go public as a result of this decision. This is the reason for the dramatic rise in the number of Saudi listed companies in the market: 146 companies in 2010 from 77 in 2005 (Annual Statistical Report, 2010). Today, 163 companies are listed on the Saudi stock market, all of them working in a number of different sectors and having different ownership percentages across the market.

**Table 3.2: Share market indicators for the last nine years**

Period	No. of companies	No. of Shares Traded (M, SR)	Turnover Ratio	Value of Shares Traded (M,SR)	Market Value of shares (B,SR)	General share index
2005	77	12,281	1.69	4,138	2438	16,712
2006	86	68,515	0.45	5,261	1226	7,933
2007	111	57,829	1.31	2,557	1946	11,039
2008	127	58,726	2.12	1,962	925	4,803
2009	135	56,685	1.05	1,264	1196	6,122
2010	146	33,255	0.57	759	1325	6,621
2011	150	48,545	0.86	1,099	1271	6,418
2012	158	82,544	1.37	1,929	1400	6,801
2013	163	52,036	0.78	1,370	1753	8,535

\* End of period; \*\* Share turnover is calculated by dividing the value of shares by their market value.

*Source:* Saudi Arabian Monetary Agency, Listing Guide ([www.tadawul.com](http://www.tadawul.com)). \*\*\* M is Million, B is Billion, and SR is Saudi riyals.

### 3.4 Capital Structure in Islamic Finance Culture

The Kingdom of Saudi Arabia, an Arab Islamic state, has a constitution defined by the teachings of the Holy Qur'an and the customs of the Prophet Mohammed (peace and blessings upon him). Its legal system is governed by the laws of Islamic *sharia*. The economy of KSA reflects the Islamic finance culture and Shariah principles. Shariah-compliant companies are similar to the conventional ones when they are making their capital structure decision. An alternative to debt in the capital structure, of Shariah compliant firms, is to use a specifically Islamic instrument such as sukuk. If firms are following *Shariah* principles, debt financing in capital structure should follow *Islamic* principles and the debt must be (asset-backed). This means for a firm working under Islamic principles, debt cannot be more than the tangible assets. Ahmed, (2007) stated

that firms with less tangible assets will consequently have lower debt ratio. Here, the difference between Islamic debt and conventional debt, Islamic debt essentially must be asset-backed and therefore the debt would be limited based on the tangible assets owned by the firms. In the below table we can see the differences between Islamic debt (sukuk) and conventional debt.

#### ***Islamic Sukuk versus Conventional debt***

<b>Conventional</b>	<b>Islamic Sukuk</b>
From the issuer's point of view, it represents a debt obligation to the investors.	It represents stakes of ownership in underlying assets.
Regardless of the compliance with Islamic and non-Islamic purposes, bonds can be issued.	The issuance of <i>Sukuk</i> must be consistent with Islamic financial laws.
It establishes a relationship which can be characterised as that of lender/borrower, with the purpose of earning money on money.	The contractual obligations of <i>Sukuk</i> are involve permissible Islamic contracts and reflect the characteristics of undertaking business between the Sukuk holders and the originator.
It enables fixed or variable rates of interest on investments.	The tangible assets or services of <i>Sukuk</i> represent legal/beneficial interest in projects.
The sale of a bond is equivalent to a sale of debt.	It enables the sale of a share from the underlying assets.
The creditworthiness of the bond holder is the most important factor in the issuance of conventional bonds, and bond holders do not rely directly on specific assets.	The value of <i>Sukuk</i> prices are driven by and dependent upon fluctuations of market in terms of appreciation and depreciation of the market value of the underlying assets.

Source: Vishwanath S., Azmi S (2009, p. 61)

#### ***3.4.1 Principles of debt financing***

The Capital Markets Authority (CMA) established in 2004, made a significant step towards ensuring that the capital market in line with modern standards. The decision to issue sukuk must be sent to the CMA, although responsibility for the documents accuracy remains the firm responsibility.

The Islamic financial system is dedicated to the elimination of payments and receipt of interest (or *riba*, in all its forms) (Hassan & Lewis, 2007). This is what sets it apart from the primary tools and instruments of economics, which generally serve as the basis of

Western financial systems. This gave way to the creation of the “Islamic banking” model. The Saudi Arabian Monetary Agency (SAMA) is responsible for monitoring and regulating financial institutions in the KSA. Saudi Arabia’s banking system is an intricate amalgamation of conventional banking and *sharia* compliant models, wherein Islamic banking strictly bans interest because, according to Islamic law (*sharia*), debt cannot be sold and should not generate any return.

The basic source of financing companies in Saudi Arabia is commercial bank loans. The Saudi Arabian Monetary Agency (SAMA) reported that by the end of 2013, 24 commercial banks were functioning in Saudi Arabia. This included 12 local banks and 12 branches of foreign banks.

Envisioning a society that does not have any debt is quite difficult. It is also quite unreasonable to sell a currency of the same purchasing power and same category at a higher value. For this reason, it is important to differentiate between selling currency with a different type and different purchasing power (exchanges) and selling currency with the same type and same purchasing power. In cases of debt, this is the way *riba* (interest) works. Interest is considered to be the price of money with the same type of money and purchasing power. Many conventional banks have started introducing Islamic investment windows to solve this issue. Also, specialised government development financial institutions are being formed and more Islamic banks have been opening up.

Different Islamic products are offered by Saudi Arabian banks, such as *murabaha* (the concept of purchasing and then selling an item to obtain cash), *mudarabah* (profit-sharing contract), and *musharakah* (equity participation or partnership). These are the most popular forms of equity-based services offered by Islamic banks to its customers.

All products have four rules which strictly describe *sharia* conformity or fulfilment of Islamic Law (Lewis & Algaoud, 2001). Summary of each is given in the table below.

<p>1. All dealings of trade and industry must exclusively consist of <i>halal</i> (legal, permitted) actions. Consequently, <i>haram</i> (forbidden) business dealings and goods, like buying and selling of alcohol and pork products, cannot be financed by Islamic law.</p>
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2. *Maysir* (gambling) is illegal, and there must be no *gharar* (speculation or unreasonable uncertainty) in all business dealings. Also, the aspect of uncertainty, *gharar*, concerning exceptionally risky actions, is strictly outlawed. Short-selling, speculative businesses, and trading of futures on the stock market are some examples of risky actions.

3. *Zakat* is an obligatory toll and is considered one of the five fundamental pillars of Islam. It is levied at the rate of 2.5% on profit for the period of a whole year.

4. All business actions must comply with the Islamic principles, and a *sharia* board is chosen to supervise and give an opinion on the correctness of all dealings.

### **3.4.2 Debt and Taxes**

Another fundamental aspect of Islamic finance is the payment of “charity tax” or zakat. In Saudi Arabia, local firms are not charged with any kind of corporate taxes. As a substitute, these firms pay a zakat at a rate of 2.5% of a profit that was gained in a period of a whole year according to the Islamic calendar. It is the duty of the Department of Zakat and Income Tax (DZIT) to impose the payment of zakat and income tax and to manage its payment. Saudis pay the zakat on their share of the zakat base, while non-Saudi shareholders pay income tax on their share of taxable income (Al Sakran, 2001). If the value of the zakat base is negative or is less than the adjusted net income for the year, the zakat is imposed on the adjusted net income. On the other hand, no zakat is due if both the values are negative (Al Sakran, 2001).

The method of calculation of zakat means that the zakat base is inclusive of all long-term loans. In the absence of tax, there would be no difference of choosing between debt and equity this is based on the theories in corporate finance (Barakat & Rao, 2004). The unique tax structure in Saudi Arabia provides grounds for testing the determinants of capital structure in the context of the Saudi listed companies. In either case the zakat is relatively low and therefore not likely to make a significant impact on decision over capital structure.

The tax system of Saudi Arabia, though with modified economic conduct and inducements, is different from other markets because of culture-specific factors. Saudi

Arabians are charged zakat from the net profit, zakat is levied on profit after the costs of financing debt. The capital structure evaluations of the companies of Saudi Arabia could suggest a minor impact on the taxation due to this obligation and also the absence of tax advantages offered by debt. Zakat rules significantly influence the capital structure decisions within Saudi Arabian firms in general, as quoted by Al-Ajmi et al. (2009).

This research contributes to the literature by examining the determinants of capital structure in Saudi Arabia. Saudi Arabia offers an ideal opportunity to examine the determinants of capital structure in an environment largely free of taxation, the taxation policies are quite different from those of other markets as mentioned previously. This is due to certain culture-specific factors which result in the transformation of economic behaviours. 2.5% is taxed out in the form of zakat. It has a unique environment that remains largely unexplored. This holds importance in many different ways. Firstly, zakat, as an Islamic obligation, is assumed to be paid by all firms of Saudi Arabia and zakat being the third pillar of Islam. Secondly, loans from banks are the only source of obtaining investments. Thirdly, there is a lack of consensus in empirical research. In chapter six, we analyse the determinants of capital structure of Saudi listed firms and assesses empirical results regarding the determinants of the debt ratios.

Bankruptcy can impose cost of financial distress. However, there are certain ambiguities in the bankruptcy laws which are based on the Bankruptcy Preventive Settlement Law (1996) (Markaz Research, 2013). Initially, all disagreements between debtors and creditors are supposed to be resolved amongst themselves. If they fail to reach a mutually agreed upon solution, the matter is taken to a court which makes a decision to resolve the matter based on *sharia* laws (Markaz Research, 2013). For that reason, an organization's approach towards risk may have considerable repercussions because of the lack of severe bankruptcy laws.

### **3.5 Ownership Pattern in KSA**

In a study conducted by La Porta et al. (1999), they attempted to find out if there was any kind of relationship between the ownership concentration and legal protection available. Their results showed that nations not offering strong protection for investors tended to show an ownership pattern where firms were controlled by either the state or families. It should come as no surprise to find out that in Saudi Arabia, company ownership lies mostly in the hands of the government or families.

Ownership structure, especially government ownership, in GCC countries is highly concentrated because most of the listed companies are family or government owned companies. Therefore, the governments still hold a high percentage of shares in the companies that they own.

Government ownership in Saudi-listed companies focuses on profits, and widely-held in financial institutions such as banks, pension funds, or insurance companies. In recent years, and because the Saudi government relying on one source of income (oil), they have been trying to diversify sources of income, and one aspect of that is investment in Saudi companies or international companies. Also, the government may have other motives such as addressing unemployment. Therefore, the government does not control the behaviour of management.

In accordance with the corporate governance system in Saudi Arabia, the companies give full independence of working from the government. The government has rights, as shareholders in the company. This will make the companies able to work and achieve their goals financially and operate independently.

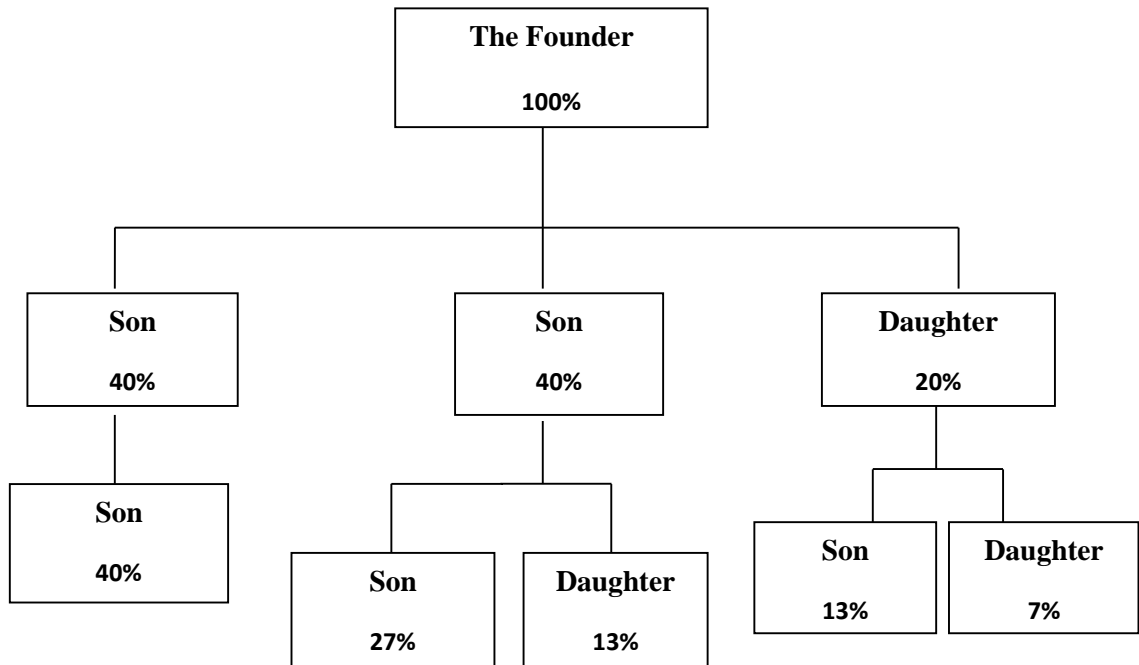
Personal experience of working with senior executive in a company with significant government shareholding, government policy and behaviour was to be a passive shareholder. Periodic reports were sent to government but no direction or commands regarding firm operation or policy are made.

Since Saudi Arabia became a member of the World Trade Organisation (WTO), a number of reforms have been introduced by the government. In 2006, a number of different corporate governance policies were implemented, a new privatization programme was developed, and adjustments were made in consideration of the new globalized world market. In the last half decade, the sharp rise in the number of companies has led to a drastic change in ownership structure. Generally, shareholders are either block holders, families, institutions, or the state. New regulations make it necessary for ownership to be disclosed for any party who has more than 5% of shares in the company.

### ***3.5.1 Ownership in KSA***

After the death of the business owner or founder, disputes among the shareholders may arise over distribution of the estate. Therefore, Saudi Arabia has approved the application

of sharia in business division. According to sharia, a male will receive double the share of a female that is 2:1. The following example in the chart indicates the impacts produced by this system on the shareholders of a family business, particularly in the third generation, as this unbalanced way of distribution creates inequality among the family.



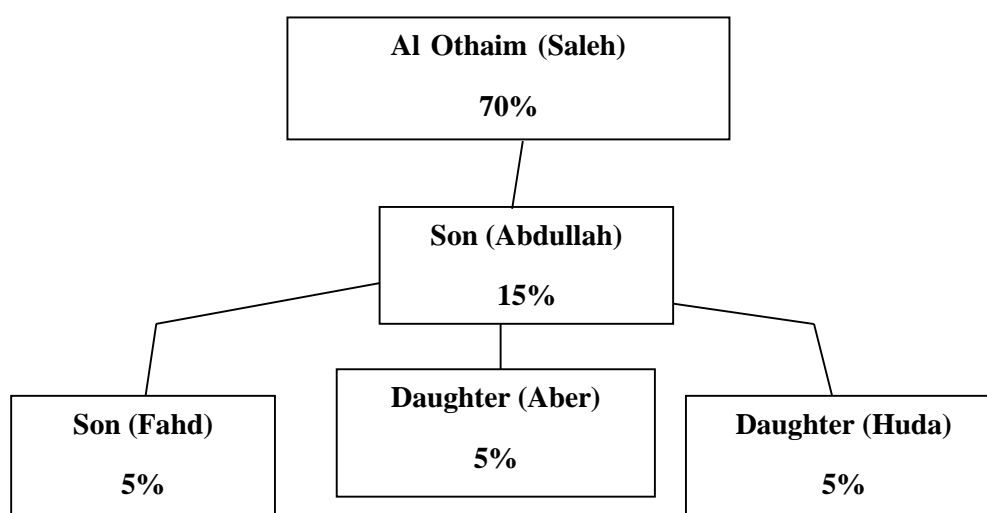
**Figure 3.1 Example of inheritance in sharia law**

The chart above demonstrates the complexity confronted by the third generation. The founder possesses 100 % of the property. Assuming he has two sons and one daughter, at his death, each son acquires 40%, whereas the daughter receives 20%. In the third generation, the matter becomes much more complex depending on the number and sex of the children. In this example, 40%, 27%, and 13% of shares are received by the three grandsons, whereas granddaughters receive 13% and 7% of shares. This unequal way of distribution creates differences in the voting rights of the shareholders. Furthermore, real cases are likely to be even more complicated, as the average family size in KSA is bigger than in the West. This is more complicated just a matter of distributing unequal proportions among the family members (Booz & Company Report, 2009).

In the following life example of a family firm, we will see how people are identified in the company report by their names and the percentage of shares they own:

Al-Othaim Holding Company is in the retail sector. The company was founded in 1956 and is based in Riyadh, Saudi Arabia. Mr. Abdullah bin Saleh Al Othaim is the Chairman

and Chief Executive Officer. Al Othaim became a listed company in 2007 by floating 30% of its shares to the public. Al Othaim Company was founded by Sheikh / Saleh Othaim, and in 1981 Abdullah Saleh Othaim and his brothers continued the business started by their father (God's mercy on him) and expanded the business by opening other centres for wholesale and retail. The founder, Saleh, left 70% of the company shares for his family, and his son, Professor Abdullah, purchased 30 % from his brothers for himself and his family (one son and two daughters).. The following chart indicates the shareholders of the family business in 2007.

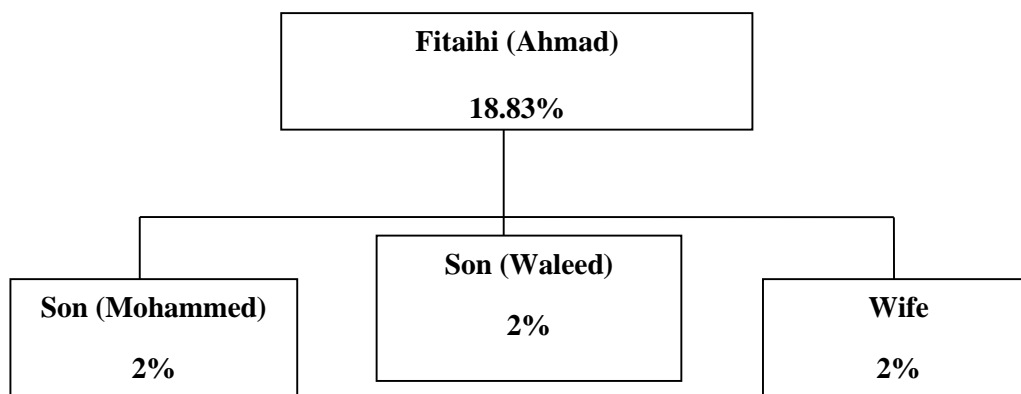


In 2008, the share percentages held by family members changed, as shown in the following table:

<b>Owner Name</b>	<b>%</b>	<b>Year</b>
Saleh Al Othaim Company	49	2008
Al Othaim (Abdullah Bin Saleh Bin Ali)	6	2008
Al Othaim (Fahad Bin Abdullah Bin Ali)	5	2008
Al Othaim (Huda Bin Abdullah Bin Ali)	5	2008
Al Othaim (Abier Bin Abdullah Bin Ali)	5	2008
<hr/>		
Al Othaim Holding Company	31.22	2009
Al Othaim (Abdul-Aziz Saleh Ali)	17.78	2009
Al Othaim (Abdullah Bin Saleh Bin Ali)	6.00	2009
<hr/>		
Al Othaim Holding Company	27.60	2010
Al Othaim (Abdul-Aziz Saleh Ali)	17.70	2010
Al Othaim (Abdullah Bin Saleh Bin Ali)	6.00	2010
<hr/>		
Al Othaim Holding Company	27.60	2011
Al Othaim (Abdul-Aziz Saleh Ali)	17.70	2011
Al Othaim (Abdullah Bin Saleh Bin Ali)	6.00	2011

The second example is Fiti Hai Holding Group. Fiti Hai is a family name that is associated with several businesses and companies owned by different members of the family. In

1996, Mohammed Fitaihi, the son of Ahmad Hassan Fitaihi, started a subsidiary company to the Fitaihi Group and introduced a new brand “Fitaihi Junior”, in addition to his a role a board member of the Fitaihi Holding Co. The following chart indicates the shareholders of the family business in 2007.



In 2008, the shareholding percentages of the family changed, as shown in the following table.

Owner Name	%	Year
Fitaihi (Ahmad Hassan Ahmad)	20.8	2008
Fitaihi (Waleed Ahmad Hassan Ahmad)	2	2008
Fitaihi (Mohammed Ahmad Hassan Ahmad)	2	2008
(Ahmad Hassan Ahmad) his wife	2	2008
Fitaihi (Ahmad Hassan Ahmad)	20.50	2009
Fitaihi (Waleed Ahmad Hassan Ahmad)	2	2009
Fitaihi (Mohammed Ahmad Hassan Ahmad)	2	2009
(Ahmad Hassan Ahmad) his wife	2	2009
Fitaihi (Ahmad Hassan Ahmad)	22.80	2010
Fitaihi (Maha Ahmad Hasan Ahmad)	1	2010
Fitaihi (Mohammed Ahmad Hassan Ahmad)	2	2010
(Ahmad Hassan Ahmad) his wife	1	2010
Fitaihi (Ahmad Hassan Ahmad)	23.20	2011
Fitaihi (Maha Ahmad Hasan Ahmad)	1	2011
Fitaihi (Mohammed Ahmad Hassan Ahmad)	2	2011
(Ahmad Hassan Ahmad) his wife	1	2011

Favouritism is commonly an issue in the case of family businesses with a central family system. This can be clearly observed in the case of succession planning, as normally the eldest male in the family is considered to be the person who will take over the business and have power. This is based on the society and its culture. Saudi Arabia is a country where collectivism plays a major role in the culture, along with sharia legal structure, and

the family is considered very important. Therefore, in such a country, it is very common for the business system to be taken over by the family system.

In family businesses in Saudi Arabia, it is relatively easy to identify the names of members of the family in the company because the whole family has the same family name, whether they are male or female, before or after marriage. Also, wives are identified as family shareholders, even if they retain their father names. This is because Islamic law in Saudi Arabia gives the right for a woman to keep the name of her father after marriage. Therefore, the names of owners in the second generation of family firms will be clear and easy to identify. For the third generation, we can determine the family ownership in firms through males, but sons and daughters of second generation families are difficult to identify because they will appear under another family name (their fathers), unless their father has the same family name.

Therefore, the available data in this study is accurate because the firms listed in the Saudi market are from the second and third generation of family members. Also, this study, compared with other studies of family firms in Europe and the United States, is clearer about family ownership, because women in these countries take their husband's name after marriage, resulting in determining the ownership in firms in the second or third generation being difficult for females.

Four points can be summarised in this study:

- We can identify all the second generation ownership percentages (males and females).
- We can identify all the third generation ownership percentages through males.
- We can identify all ownership percentages of wives, as they are mentioned in financial reports.
- We cannot identify third generation ownership percentage through females.

### **3.6 Companies Law (1965) and Company Structure**

The Companies Law was established with the help of the British Companies Law; it is an important law as it was established in 1965 with the aim of regulating the companies in Saudi Arabia. It was proposed by the Royal Decree to act as a fundamental law for providing a set of rules to be followed at that time. However, it is now believed that this

is an old law and it is insufficient to meet the latest needs of the business world, even after it has been enhanced a number of times due to advancements in the way companies are operated (Al-Ghamdi & Alangri, 2005). Normally, the system which is adopted by a company is determined by the framework of that company. Its legal position is also determined in the same way.

### **3.7. Capital Market Authority**

In Saudi Arabia, the Capital Market Authority (CMA) began informally in the mid-1950s (Capital Market Authority, 2012). In 2004, the CMA was established by Royal Decree. The fundamental objective of the CMA is to control and build up the Saudi Arabian capital market, including setting up guidelines and regulations that coincided with the Saudi Stock Exchange (Alshehri, 2012). The main duties of the CMA are as follows:

1. To issue the regulations and rules of the Capital Market Law.
2. To monitor and protect investors from any illogical practices.
3. To reduce the risk by taking measures in the exchange of securities.
4. To develop and monitor the issuance of equity.
5. To monitor the activities of elements that work under the CMA.
6. To monitor all information and data identified with issuers and securities.

Five individual members represent the CMA, and they should be Saudi nationals and designated by Royal Decree (Capital Market Authority, 2012).

### **3.8 Board of Directors**

#### *Responsibilities of the Board*

The shareholders are represented by the board of directors as they have many liabilities for running the company. In companies with delegates or committees, the power is often given to a third party. According to the code of corporate governance, the board of directors has the major liabilities. Nevertheless, the structure of the firm determines the responsibilities a board has towards the shareholders or any other people who invest in the firm. Usually, the major responsibility of the board is to ensure that the financial reports are accurate and honestly made.

A board of directors is created based on the following conditions:

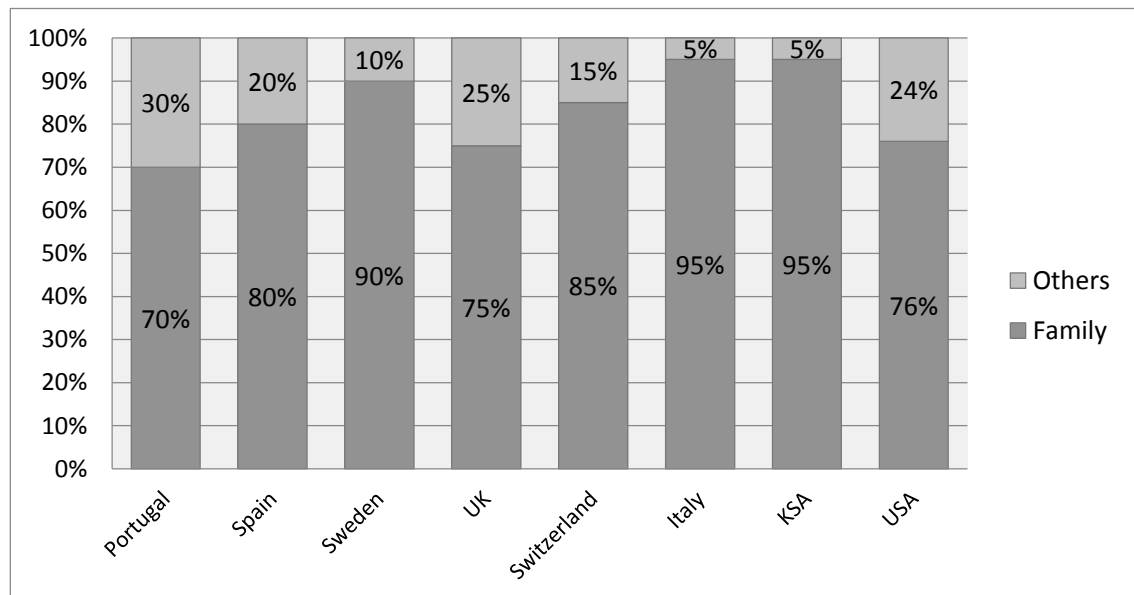


- 1- Any member of the board of directors cannot be on the board of directors of more than five companies at the same time.
- 2- Out of the total members, one-third must be completely independent.
- 3- The number of directors on the board should be between three and eleven.
- 4- One third of the board of directors, which also forms its majority, must be non-executive.
- 5- The person who is the Chairman of the board cannot hold any other executive position, such as the CEO of the company.

### 3.9 Family-owned Businesses in Saudi Arabia

Since the beginning, Saudi Arabia focused on the position that family businesses have in the economy. King Faisal, the Saudi ruler from 1964-1974, organized the inception of the Management Council for the assurance and conduct of company business. According to Welsh and Raven (2006), family companies represent almost 95% of the registered businesses in Saudi Arabia (listed and unlisted) which are administered by the founder of first generation; they are similar to the businesses operating in other countries.

**Chart 3.1 Percentage of family business in KSA compared to other countries**



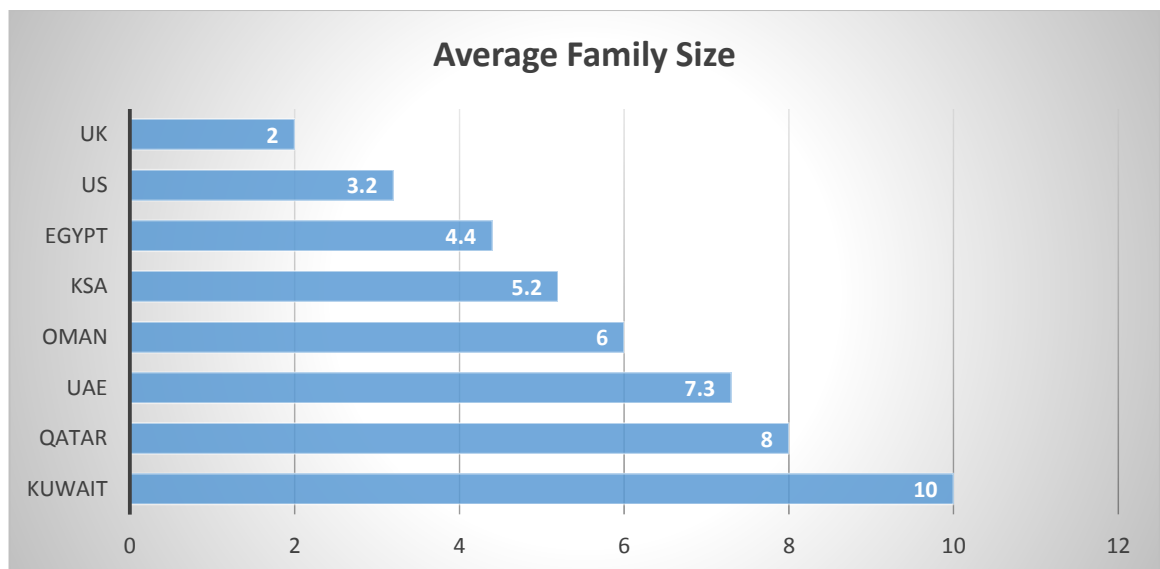
**Source:** Council of Saudi Chambers (2010)

The family-owned businesses are mostly limited liability companies. These businesses can be categorized into blocked joint stock companies, partnership companies, and limited liability companies, according to their funds and legal outlines (MCI, 2010). Algalayani (2010) stated that 70% of the companies are managed by the founders, 20%

by the second generation, and only 10% by the third generation. However, such businesses are characterised by their administrative steadiness and prosperity. The regulations in Saudi Arabia mandate the disclosure of ownership that is more than 5% in a company as well as board ownership.

Compared to Western counterparts, the family-owned business of the MENA region, KSA being one of this countries, are much more complicated as far as the volume of the businesses and family members is concerned. In the MENA region, the average family size of family owned corporations, compared to the US and UK, is nearly double. Thus, there is a visible growth in the amount of family members involved in the business. Chart 3.2 shows the average family members’ size in KSA compared to some other countries.

**Chart 3.2 Average family business size in KSA compared to some countries**

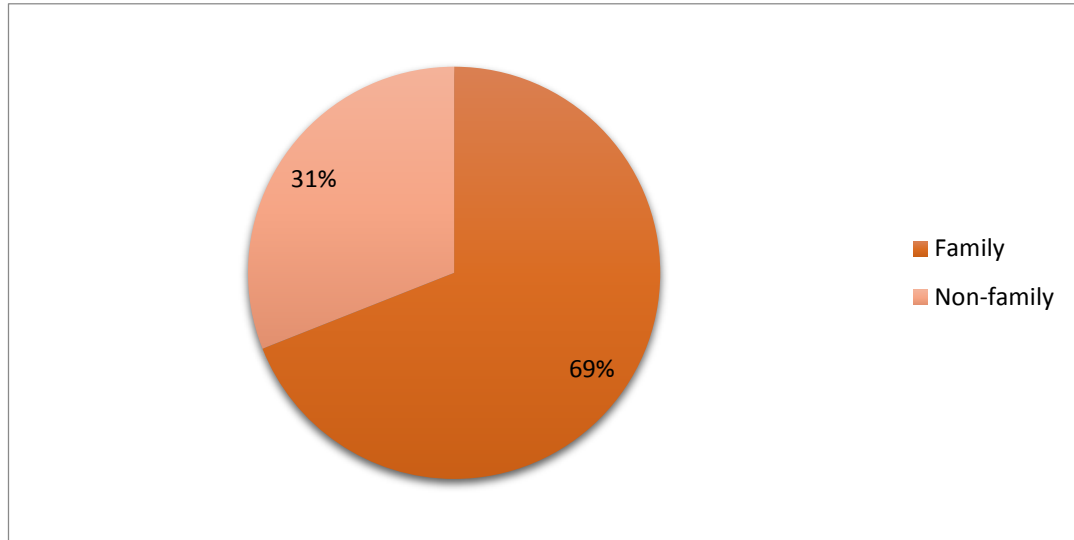


Source: MENA Family Businesses (2011)

### ***3.9.1 Seats on Boards of Directors***

As shown in chart 3.3, the number of seats on boards of directors in the stock market is 1310, of which 900 are occupied by families, divided among 228 families; this represents 69 percent of the seats in the market, while 410 seats are held by non-family members, representing 31 percent of the seats on the boards of companies in the market.

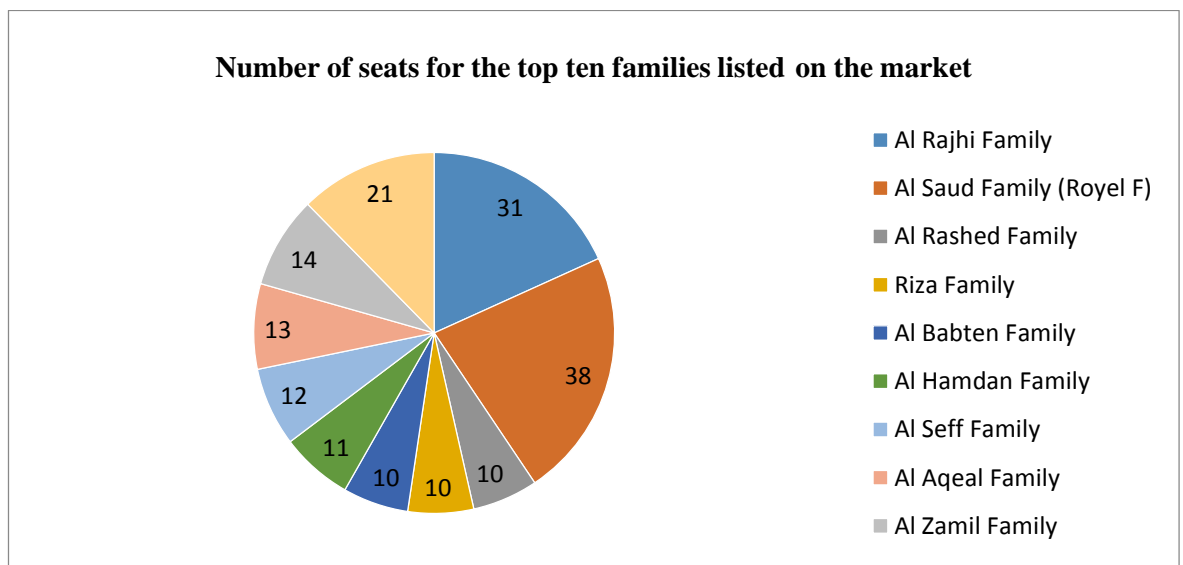
**Chart 3.3: The percentage of board seats in Saudi-listed companies which are taken by family members**



Source Aleqtisdiah, 2013, Issue 7049

Chart 3.4 shows the major family holdings. The Rajhi family has 31 seats, accounting for 2.4 percent of the seats in the market and 3.4 percent of the total family seats, spread over 19 companies. The Alissa family occupies 21 seats, representing 1.6 percent of the market and 2.3 percent of the family seats divided across 18 companies (Alsayah & Abdullah Al-Muhanna, 2013). The Al Saud family dominates the market in terms of the number of seats on the boards of companies, with a total of 38 seats, representing 2.9 percent of the seats in the market and 4.2 percent of the total seats in families, spread over 27 companies.

**Chart 3.4: Number of seats for the top ten families listed on the market**



Source: Aleqtisdiah, 2013; Issue 7049

The distribution of seats in the sectors as follows: 275 seats in the insurance sector, and 122 seats in the petrochemical sector. and the same number 122 seats in the agriculture sector and food industries; there are 119 seats in the construction sector, 108 seats in the banking sector, 106 seats in the industrial investment sector , 103 seats in the cement sector, 81 seats in the retail sector, 78 seats in the real estate sector, 52 seats in the multi-investment sector, 46 seats in the telecommunications sector, 33 seats in the transport sector, 28 seats in the media and publishing sector, 21 seats in the tourism sector, and 16 seats in the energy sector (Table 3.3).

**Table 3.3 Boards' seats in each sector**

<b>Sectors</b>	<b>No. of boards seats by sectors</b>
Insurance	275
Petrochemical	122
Agriculture	122
Construction	119
Banking	108
Industrial investment	106
Cement	103
Retail	81
Real Estate	78
Multi-Investments	52
Telecommunications	46
Transport	33
Media	28
Tourism	21
Energy	16
<b>Total</b>	<b>1310</b>

Ten families each control ten or more seats on the boards across all firms on the KSA market. These families accounted for 170 seats in total, representing 13 percent of the seats on boards of the market, while the rest of the families occupied fewer than ten seats each, occupying 730 seats in total and representing 56 percent of the total seats on boards in the market (see Table 3.4).

**Table 3.4 Number and distribution of families in Saudi-listed firms**

<b>No. of Families</b>	<b>No. of seats</b>	<b>Total</b>	<b>% in the SSM</b>
<b>93</b>	2	186	14
<b>52</b>	3	156	12
<b>33</b>	4	132	10
<b>15</b>	5	75	6
<b>9</b>	6	54	4
<b>6</b>	7	42	3
<b>5</b>	8	40	3
<b>5</b>	9	45	3
<b>3</b>	10	30	2
<b>1</b>	11	11	1
<b>1</b>	12	12	1
<b>1</b>	13	13	1
<b>1</b>	14	14	1
<b>1</b>	21	21	1.6
<b>1</b>	31	31	2.4
<b>1</b>	38	38	2.9
<b>228</b>	<b>194</b>	<b>900</b>	<b>69%</b>

### **3.10 Conclusion**

Since the onset of the twenty-first century, the stock market in Saudi Arabia has been working on detailed and developed programs. The CMA took over the management and administration of the market in 2003. Following this, a number of rules and laws to

regulate the stock market have been enacted by the CMA. However, the impact of these regulations became more apparent after 2006. Towards the end of 2006, the stock market crashed and this led to further strictness of these rules and regulations. After 2006, more stability and rationality of stock market transactions were evident due to the rules and consequential punishments ordained by the CMA, even though its implementation in the market was delayed. A rise in the sectors that were part of the market and the listed companies on the stock market were some of the most significant events in the entire history of the Saudi Arabian stock market after 2006. There major features of the investment legal system in Saudi Arabia. Is that it does not allow riba (interest) on debt. Instead, it offers other Islamic financial instruments which are more equal towards all parties whereby all parties share the risk in accordance with their participation in the transactions.

# **CHAPTER FOUR**

## **FAMILY FIRMS AND PRELIMINARY ANALYSIS OF BEHAVIOUR**

### **4.0. Introduction**

The purpose of this chapter is to answer the following questions: Is there any significant difference in agency costs between family firms and non-family firms? Do family-owned firms perform better? This study explores how and why firm performance, measured by return on assets (ROA) and Tobin's Q, in family firms compared to non-family firm is affected by ownership concentration, agency costs, capital structure, and board of directors for firms listed on the Saudi Stock Exchange. In this chapter, we aim to address and provide detailed definitions of what constitutes a family firm, and a discussion of the identification and characteristics of family firms will be provided. Also, we aim to address and provide information about the impact of ownership structure and board structure on corporate performance using data from Saudi Arabian companies. There are several important features of our analysis, which, we believe, contribute to the literature on agency theory and corporate governance in several ways. First, the discussion and an examination of the characteristics of family and non-family firms will serve to both provide some preliminary results. We consider whether the classical agency theory of conflict between managers and shareholders holds for Saudi firms. Second, it will contribute to the understanding of the role of agency issues in a developing country context, which is in line with Shleifer and Vishny's (1997) call for more international studies on corporate finance. Third, the description and analysis in this chapter will therefore also serve to highlight those concepts relevant to understanding why family firms might behave and perform differently than their non-family counterparts. In particular, a discussion of the effect and control of agency costs will be provided. Fourth, there is relatively little work addressing agency issues that may be dominant in different countries, so our study is important to fill this gap. In this chapter we will provide and descriptive statistical analyses for comparison of family and non-family-owned firms. The descriptive statistics include mean, standard deviation, minimum and maximum, as well as use of the Pearson correlation to analyse the complimentary and substitution effects between variables. There will also be specific, testable hypotheses using the chi-

square test to look for association among two or more of the variables. It is one of the tools that may be used with cross-tabulation analysis and assumes under the null hypothesis that distribution is random. Each relationship in the test will be discussed, followed by the chart analyses using the return index and price index to see if there is any deference between them during the period of study. These analyses will help to see the variation in terms of the behaviour and performance of firms with different levels of shareholding, which will enable family ownership to be defined and determined. Data for all the companies were collected mainly from secondary sources, especially from the Datastream database. These data represent eight years from 2006 to 2013. Section 4.4 in this chapter will present details about the data.

#### **4.1 How Family Firms are Defined in the Literature**

The first goal is to understand the concept of a family firm. There are no specific definitions for family business. In this section we present some definitions from previous studies such as Chua et al (1999) after they assessed 250 research articles on family firms. There were three kinds of qualifying operational combinations present in terms of management and ownership in their definition. There is the absence of a clear definition of the term family, which has been brought forward by Anderson et al. (2003). The family structure and cultures are quite different. Hence, as time passes, this lack of definition may cause various issues. Three aspects have been included as part of the traditional family business definition by researchers. These aspects of succession, management, and ownership vary from one generation to another (Hoover & Lombard-Hoover, 1999).

The US economy is affected by family firms and this aspect has been researched by Shanker and Astrachan (2003). The research indicates that there is no common definition which clearly explains the family business concept. To define the family business, it must be divided into three categories, which are narrow, middle and broad.

One of the purposes of this thesis is to explain how family businesses behave and perform compared with non-family firms. This behaviour would affect the family firm definition based on the agency theory, taking the Saudi Arabian context into account. Family and non-family firms have different behaviours, which lead to family firms outperforming non-family firms (Sraer & Thesmar, 2007).



Miller et al. (2007) compiled a list of 28 definitions of family firms that are used in a plethora of studies in various finance and management journals globally, from 1996 to 2006. The following are some of the diverse definitions of family business:

James (1991) frames the idea of family businesses either as that which is entirely or majority owned by one person or by various members of one given family. On the contrary, other researchers have shifted the definition of family business towards the concept of any business where management or active ownership responsibility is adopted by a given set of family members. Hayward (1989) states that a family business must have 50% or more of its ownership held by a single family; in addition, a single-family group might concretely run the business or have actual control of proportion of the senior management.

The family business concept and the way it has been defined plays a vital role in the performance of these firms. Agency costs may be created due to the differences in the business interests and goals of the owners and managers of the family firms; this aspect has been clearly defined in chapter two. After this analysis, the characteristics of family and non-family firms have been brought forward. The preliminary results, along with later model specification, will be brought forward through this thesis. The description and analysis in this chapter will help to highlight those concepts relevant to understanding why family firms might behave and perform differently than non-family firms.

## **4.2. Research Sample**

The research covers the period from 2006 to 2013, a total of eight consecutive years. Data for an extended period is considered necessary to draw clear statistical estimations of the relationships between variables.

The Saudi Stock Exchange (SSE) came into existence in the early 1970's, in an informal operational mode. However, in 1984, the market was regulated by the Ministry of Finance and Commerce and the Saudi Arabian Monetary Agency (SAMA). The SSE, now referred to as Tadawul, is the only market in its class today. Having unique and distinctive marketing features, the Saudi market is distinguished from other counterparts around the world. Meanwhile, share trading is carried out by renowned commercial banks that deal in business transactions between customers and seller.

The Saudi Stock Market is one of the largest markets in the Gulf Cooperation Council (GCC), which include six countries.

Listed companies are classified into fifteen sectors according to the Saudi Stock Exchange industry classification.

**Table 4.1 Number of companies by sectors**

<b>Sectors</b>	<b>Number of companies</b>	<b>%</b>
<b>Banks &amp; Financial Services</b>	12	7.36
<b>Petrochemical Sector</b>	14	8.58
<b>Cement Sector</b>	13	7.97
<b>Retail Sector</b>	12	7.36
<b>Energy &amp; Utilities Sector</b>	2	1.22
<b>Agriculture &amp; Food Industries</b>	16	9.81
<b>Telecommunication Sector</b>	5	3.06
<b>Insurance Sector</b>	35	21.47
<b>Multi-Investment Sector</b>	7	4.29
<b>Industrial Investment Sector</b>	14	8.58
<b>Building &amp; Construction Sector</b>	16	9.81
<b>Real Estate Sector</b>	8	4.90
<b>Transport Sector</b>	4	2.45
<b>Media and Publishing Sector</b>	3	1.84
<b>Hotel &amp; Tourism Sector</b>	2	1.22
<b>Total</b>	<b>163</b>	<b>100%</b>

Source: Tadawul web site ([www.tadawul.com.sa](http://www.tadawul.com.sa))

Banks and finance and insurance companies are excluded from our list because they have different financial reports, as their balance sheets have significantly different structures from those of non-financial companies (Chtourou et al., 2008).

### **4.3. Research Questions and Variable Measurement**

The differences in performance between family firms and non-family firms and which is more or less valuable remains an open question; many studies have produced different results. For example, Anderson and Reeb (2003) and Sraer and Thesmar (2007) find that family firms outperform non-family firms, whereas some other research such as Miller et al. (2007) and Barth et al. (2005) found that family firms have a lower performance than non-family firms. In other economies, the evidence is mixed (Cronqvist & Nilsson, 2003).

In order to understand whether family firms perform more or less than non-family firms, we must distinguish among three main elements in the family firm definition: control, management, and ownership. The main criteria were that families should be able to exert control on the board, through their involvement in management, and also have a substantial stake in the firm as shareholders. In this section, the research questions and process of measuring variables will be discussed, which will be used to answer the following question:

Is there any significant difference in agency costs between family firms and non-family firms?

Agency costs exist if there is a separation between ownership and management but may not exist if ownership and management of firms are not separated, as most researchers agree (Jensen & Meckling, 1976; Fama & Jensen, 1983). The idea of agency theory is that managers who are not owners will not watch over the affairs of a firm as carefully as owner-managers. Morck et al. (1988) documented other kinds of agency costs between minority shareholders and majority shareholders as a result of having an entrenched dominant shareholder, as mentioned in chapter two in the section on principal-principal conflicts.

To improve the understanding of agency costs in family firms, empirical evidence of the differences in the agency costs in family and non-family firms will be presented through the impacts of agency costs on performance.

A comparison of agency costs can be expressed by dividing the firms into two categories, where group one represents the family firms and group two represents non-family firms.

### ***4.3.1 Measurement of Agency Costs***

According to literature, there were seven proxy variables suggested to measure agency costs: total asset turnover (Ang et al., 2000; Singh & Davidson, 2003), operating expense to sales ratio (Ang et al., 2000), administrative expense to sales ratio (Singh & Davidson, 2003), earnings volatility, advertising and R&D expense to sales ratio, floatation cost (Crutchley & Hansen 1989), and free cash flows (Chung et al., 2005). Therefore, in this research, three variables were chosen to measure agency costs. It is important to note that total asset turnover is the only inverse proxy variable for agency costs, meaning that agency costs increase as total asset turnover decreases. The three proxy variables are defined as follows:

- **Annual sales to total assets (asset turnover).** This ratio shows the effectiveness of management. For example, a high asset turnover ratio may signify good investment decisions. Firms with low asset turnover ratios are expected to have high agency costs between managers and shareholders (Ang et al., 2000; Singh & Davidson, 2003). This variable will be taken into consideration in the following chapter in the main regression result.
- **Expense ratio (EXPRAT).** This is the operating expense scaled by annual sales; this measure shows how successfully the management controls operating costs, including consumption and other agency costs (Danielson & Scott, 2007). Companies with high expense ratios are expected to have high agency costs between managers and shareholders. This variable will be taken into consideration in the following chapter in the robustness result.
- **Administration expense ratio (ADM RAT).** This is the administrative expense scaled by annual sales (Wang, 2010). ADM RAT is the third proxy, which includes commissions by agents, advertising, salaries, and many more expenses. The managerial activities of spending firm resources are reflected by the expense ratio. A high administration expense ratio would lead to high agency. This variable will be taken into consideration in the following chapter on robustness results.

Does concentration of ownership affect firm performance?

The effect of ownership concentration on firm value is most often positive. The following are some previous researchers who found a positive relationship in terms of the agency

cost issue (agent-principal problem). Shleifer and Vishny (1986) found a positive relationship between ownership concentration and firm value, as agency costs are resolved by control and monitoring activities in the firm. Berle and Means (1932) mentioned the importance of ownership concentration in reducing agency problems between owners and managers in the firm. Holderness and Sheehan (1988) summarise that firms with majority shareholders have a positive impact on performance relative to most firms. Large owners have a great interest in maximising their profit; thus they address the agency problem in the company (Shleifer & Vishny, 1997).

This study needs to collect information on the distribution of the firm's equity among its shareholders to determine the level of ownership concentration. To identify family firms, they are classified as family-controlled if the family owns at least 10% percent. The Thomson ONE Banker database was our main source of ownership concentration information.

#### ***4.3.2 Measurement of Ownership Structure***

**Ownership Concentration.** The definition of ownership concentration is total percentage holding by shareholders, where the total family holding exceeds 10% of the firm shares, which is why this study makes use of the same characteristic for large shareholders as was used by La Porta (1999).

A major shareholder has been defined as an individual who directly or indirectly holds 10% or more of the firm's shares (La Porta, 1999). Various variables have been applied to study the large shareholder effect on the performance of the firms. There were various researchers who used the voting rights percentage to determine largest shareholders (Thomsen & Pedersen, 2000), and there were other researchers have used cash flow and voting rights to determine the largest shareholders. The ownership concentration impact on performance was measured by Shleifer and Vishny (1986), who used the largest three shareholders for their study. Also, some other researchers used the largest five shareholders to measure ownership concentration (Demsetz & Villalonga, 1998). In this study, we avoid measuring the ownership concentration based on top five or ten largest shareholders since that may not be accurate; in the annual report, the list of the top owners did take into account different securities accounts belonging to the same person.

For this research, the percentage holding of the largest (block of) shareholders where the total family holding exceeds 10% would be used to measure ownership concentration. Large shareholdings are recorded for individuals where at least 5% of the shares are held. The abbreviation OWNCON has been used to identify the ownership concentration of the large shareholders. The ownership variables would be extracted from the annual reports of the firms. According to the policy of KSA, any entity that holds more than 5% of shares in the firm has to be shown in the financial report at the end of the year.

**State Ownership.** State ownership is measured by the total percentage of shares in the company that are held by the government (NurulAfzan & Rashidah, 2011, NazliAnum, 2010). In this study, STATOWN is used as a proxy for state ownership. Data is collected from the annual reports as at the end of each of the financial years from 2006 to 2013. This variable will be taken into consideration in the following chapter in the main regression result.

**Managerial Ownership.** Managerial ownership is measured in terms of percentage of shares owned by executive and non-executive directors in the firms (McConnell & Servaes, 1990; Short & Keasey, 1999). In this study, MOWNER is used as a proxy for managerial ownership. Data is collected from the annual reports at the end of each of the financial years from 2006 to 2013.

Executive directors refer to the managers who operate the company on a daily basis, and the non-executive directors refer to directors who do not involve themselves in the day-to-day activities of the company. In this research, we assumed that non-executive directors are part of a one-tier system of the management body in the board room. In this study, MOWNER is used as a proxy for managerial ownership. Data is collected from the annual reports at the end of each of the financial years from 2006 to 2013.

#### ***4.3.3 Measurement of Profitability***

The company's performance can be viewed commonly in primarily two ways: market measures (such as stock returns) and accounting measures (for instance, return on assets (ROA) (Bhagat & Bolton, 2008). As far as market measures are concerned, not much consideration is given to them, and previous studies have embraced accounting measures (or Tobin's Q the ratio of market value to the book value of total assets) to measure the value of the firm. Some researchers (Chakravarthy, 1986; Oswald & Jahera, 1991) argued

that the company's performance cannot be signified through the accounting measure and it is deficient when considering company performance. Chakravarthy (1986) identified that the major problem with accounting data is that it can be influenced very easily by management authorities. Additionally, there is a chance that two companies may practise contrasting accounting methods (for instance, depreciation) and dispense distinctive accounting reports (Oswald & Jahera, 1991). Furthermore, Fisher and McGowan (1983), Brealy and Myers (1996), and Oswald and Jahera (1991) expressed the view that by considering the financial situation, the market value of the company's stock provides the best reflection of the company performance. Gitman and Madura (2001) acknowledged that in order to analyse whether the managers' interests are consistent with those of the shareholders, the market return performance is usually taken into consideration. The managerial skills and abilities can be challenged as to whether they are competent enough to maximize shareholders' wealth, if the stock price is relatively weaker than the market price.

Conversely, Boardman et al. (1997) mentioned that accounting measures are extensively used due to the feasible empirical proxies to calculate the company's economic rate of returns, despite the fact that there is criticism of the use of accounting measures.

This research will employ both the market returns and accounting measures (profitability) as possible substitute proxies for the company's performance. These two factors will be taken into consideration in the following chapter. So, performance and evaluation are measured by two variables that are widely used in the literature. The first one is Tobin's Q, which is defined as a ratio of the market value of the firm to the replacement cost of assets (see, for example, Ozkan & Ozkan 2004; Bhagat & Bolton, 2008). This variable is not publicly available for Saudi firms. The second performance measure is return on assets (ROA). A positive relationship between ownership concentration and firm performance measured by ROA is expected since if there is an agency problem, monitoring, which is acting in the shareholders' interest, will be greater in concentrated firms.

#### ***4.3.4 Measurement of Other Variables***

**Board Size (BRSIZE).** This is measured by the total number of members on the board. An internal governance body has been formed to monitor the behaviour of the

management as agents of the shareholders, to help protect shareholders from those managers who may be interested in following their personal interests or may be acting in a manner which is not in best interest of the shareholders' objectives (Jensen & Meckling, 1976). When agency issues need to be resolved, a larger board size proves to be much more efficient since the directors on this board are quite experienced and would be able to monitor and review the activities in an efficient and effective manner (Kiel & Nicholson, 2003).

The agency theory also states that through a larger board, CEO authority is reduced, which is why effective monitoring is possible. Hence, the overall shareholder interests are protected (Singh & Harianto, 1989). With reference to the CEO, the larger boards help improve the bargaining power of its members, which is why they are referred to as effective in monitoring the management.

**Firm Size (FSIZE).** Firm size is measured by the log of total assets. This measure has been used in many previous studies such as Cassar and Holmes (2003) and Akhtar (2005). The use of the logarithm in this measure is to justify and mitigate heteroscedasticity problems and to correct data distribution positive skewness (Aliani, 2012). This variable used to analyse the relationship between firm performance and firm size and to explain the economies of scale which may be possible. The firm size variable has been considered in previous literature. Many of the research studies have indicated that a small firm is much more efficient than large firms due to the size difference. The explanation for that is because the management in large firms has less control over the operations and activities as the size of the firm is too large. On the other hand, some studies such as Nenova (2003) believe that large firms have a higher security level and it would be much more difficult to attain any kind of personal benefits. Moreover, large firms have more market power, which would lead to higher performance.

**Leverage (LTDTA).** In this study, we measure leverage by long-term debt divided by total assets (LTDTA). This measure is considered to be a ratio which shows the organization debt in relation to its total assets. It defines how the company uses debt to finance its assets. This variable (debt ratio) informs users on how much debt the company retains compared to the assets on the balance sheet. There is a relationship between leverage and risk; if the leverage is very high in the company, the firm's operation risks are in direct proportion to the ratio. Conservative financing would be indicated by a low debt ratio where the firm would be able to borrow in the future at low risk.



**Table 4.2 Definition and measures for variables**

<b>Symbol</b>	<b>Descriptions and Measures</b>	<b>Sources</b>
<b>OWNCON</b>	The percentage holding of the largest (block of) shareholders where the total holding exceeds 10%; large shareholdings are recorded for individuals where at least 5% of the shares are held	Thomson ONE Banker database and financial reports
<b>ARTN</b>	Annual sales to total assets (asset turnover)	Datastream database
<b>EXPRAT</b>	Operating expense scaled by annual sales	Datastream database
<b>BRSIZE</b>	Total number of members on the board	Financial reports
<b>LTDTA</b>	Long-term debt divided by total assets; it is used to investigate the effect of long-term debt on a firm's performance	Datastream database
<b>F SIZE</b>	Logarithm of total assets adjusted for inflation	Datastream database
<b>Tobin's Q</b>	The ratio of the book value of total assets minus the book value of equity, plus the market value of equity to the book value of assets	Datastream database
<b>ROA</b>	Ratio of the net income divided by total assets	Datastream database
<b>Family-Firm</b>	A dummy variable that takes the value of 1 if the company is a family firm, otherwise 0.	

#### 4.4 Preliminary Analysis of Behaviour

Agency problems can be resolved in family firms are they are run by family owners (Mcvey & Draho, 2005). Usually, firms with large shareholders set the owners in high board management positions (Holderness & Sheehan, 1988). Denis and Denis (1994) summarise that family management is required in family firms to resolve the agency cost issue. . Moreover, in the case of family firms, those managed by family members who have the most company shares can lead to better performance because of the alignment of interests (Lemmon & Lins, 2003).

In this section, a preliminary analysis is conducted of the data that were collected mainly from secondary sources, specifically the Datastream database and Thomson ONE Banker database. The research covers the period from 2006 to 2013, a total of 8 consecutive years for listed companies which are classified into fifteen sectors according to the Saudi Stock Exchange industry classification codes. In this section, the analysis is to look for an association among two or more of the variables in our study, which are family shareholding, agency costs, capital structure, board of directors' characteristics, and performance. Based on our statistical results, we will determine the definition of family firms and identify how the behaviour and performance of firms differ as family shareholding changes. The chi-square statistic is one of the tools that may be used with cross-tabulation analysis, assuming under the null hypothesis that distribution is random. Using the cross tabulations, we try to provide a basic picture of the interrelation between two variables and find interactions between them. Cross tabulations of data could support the development of the hypotheses.

The chi-square statistic is an overall measure of how close the observed frequencies are to the expected frequencies. The expected frequencies are a theoretical distribution. Accordingly, each category emerges in its own way rather than being disturbed by the emergence of another category. In other words, the distribution of the expected frequencies of the categories reflects an independent and unbiased outcome. Hence, the expected frequencies are a probabilistic distribution.

The chi-square formula that for the contingency table is as follows:

$$\chi^2 = \sum \frac{(O-E)^2}{E} \quad (\text{Cooper \& Schindler, 2003}),$$

where

$\chi^2$  = Chi-square value

O = Observed frequency for each category

E = Expected frequency for each category

The following formula calculates expected frequencies:

$$E = \frac{\text{row total} * \text{column total}}{\text{Grand total}}$$

**Grand total**

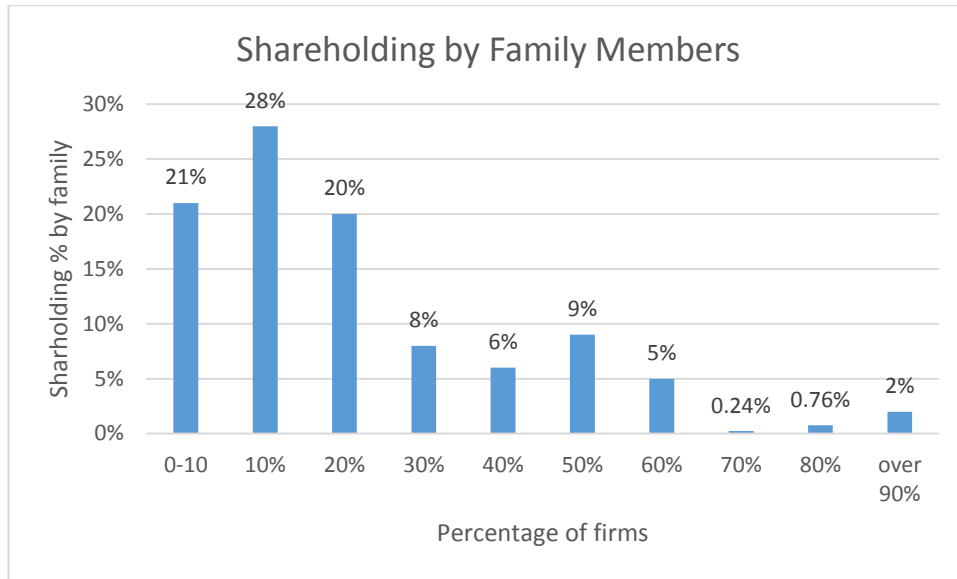
The next step is to calculate the degrees of freedom, which are equal to the number of rows minus 1; multiply the number of columns minus 1 for each cross tabulation. Subsequently, we move to the chi-square table to find the critical values of  $\chi^2$ . If the chi-square test statistic is greater than the critical value with a 95% confidence for the relevant number of degrees of freedom, the null hypothesis is rejected. Otherwise, we accept the null hypothesis.

If the p value or its test statistic < critical value (0.05), reject the null hypothesis.

If the test statistic > (0.05), do not reject the null hypothesis.

For example, Table 4.4 analyses the association between the ownership concentration and return on assets (ROA). First, regarding ownership concentration by family members, based on the Saudi-listed firms' data, we can see that most ownership concentrations by family members are more than 10% (see chart 4.1). This reflects the distribution of shareholding by family members, and we can see clearly the high ownership percentage, from 10 % and above. There are 28% of family members who hold 10% of ownership in our sample and in total 79% of ownership are by family members.

**Chart 4.1: Shareholdings by family members**



#### ***4.4.1 Ownership Concentration and Return on Assets***

In this section, we used the chi-square statistic to look for an association between two of the variables, which are ownership concentration and performance (ROA). It is one of the tools that may be used with cross tabulation analysis and assumes under the null hypothesis that distribution is random. This analysis will help to see the variation in terms of the behaviour and performance of firms with different levels of shareholding. The null hypothesis of independence is rejected if the calculated  $\chi^2$  is greater than the critical value.

We can see in Table 4.3 how each variable was divided into categories to make a cross tabulation between them and calculate the chi-square. These categories are designed like this to avoid any dispersion in the real value, which could occur with any increase in the categories. In one example from this group, the ownership concentration variable is categorised into four groups of percentages: 0-5%, 6-20%, 21-50%, and 50-100%. The first group represents non-family firms because the regulations in Saudi Arabia mandate the disclosure of ownership that is more than 5% in a company.

**Table 4.3 Categories for each variable in the study**

<b>ROA</b>	<b>LEV</b>	<b>OWNCON</b>	<b>BRSIZE</b>	<b>ARTN</b>
-0.67	< 0.10	0- 0.05	< 7	< 0.70
0 - 0.09	0.11 - 0.20	0.06 - 0.20	7-9	0.71 - 1
0.10 - 0.19	0.21 - 0.40	0.21 - 0.50	10-11	1.1 - 5
0.20 - 0.65	0.41 - 0.60	0.51 - 1	12-14	
<b>EXPRAT</b>				
< 0.60				
0.61 - 1.2				
1.3 - 4				

Return on assets: (ROA); leverage: (LEV); Board size: (BRSIZE); asset turnover: (ARTN); expense ratio: (EXPRAT); OWNCON: (ownership concentration)

In our example in Table 4.4, a chi-square statistic indicates that there is an association between the ownership concentration and performance (ROA) because the calculated chi-square value is 26.38, with nine degrees of freedom. The critical value with the 0.05 confidence level is 16.92, and the p-value is  $0.007 < 0.05$ . As the chi-square value is higher than the critical value, and the p-value is less than the confidence level of 0.05, the null hypothesis of “a random joint distribution” is rejected.

**Table 4.4** Contingency table for family shareholding and return on assets

<b>ROA</b>	<b>Ownership concentration</b>				<b>Total</b>
	<b>0-0.05</b>	<b>0.06-0.20</b>	<b>0.21-0.50</b>	<b>0.51-1</b>	
<b>-0.67</b>	42	18	23	8	<b>91</b>
<b>0 - 0.09</b>	157	152	112	87	<b>508</b>
<b>0.10 - 0.19</b>	14	12	14	5	<b>45</b>
<b>0.20 - 0.30</b>	18	11	28	11	<b>68</b>
<b>Total</b>	231	193	177	111	<b>712</b>
<b>Chi-squared</b>	26.38				
<b>df</b>	9				
<b>P-value</b>	0.007*				
<b>Critical value</b>	16.92				

\* **Significant** at the 0.05 level

In this study, we explore the association between ownership concentration and firm performance among Saudi Stock Market (SSM) firms. Using accounting measures of firm performance (ROA), we conduct a time-series cross-sectional comparison of family and non-family firms (2006-2013). It is clear that the performance is at its highest rate when the shareholding is between 0–0.05 percent, and this rate decreases with an increase in

the ownership concentration. Therefore, non-family firms will perform better than family firms because in these firms there will be no concentration of ownership.

Existing literature supports the result that family-owned business can be less productive than their publically held counterparts. Family-owned businesses would have a high interest rate because their risk rate would be higher due to the concentration of resources (Demsetz & Lehn, 1985). If the family members have all their assets in their own firm, the stakes would often be very high for them in the event that drastic measures are needed in order for the business to prosper (Gallo & Vilaseca, 1996).

#### 4.4.2 An Index of the Association between variables

The results in Table 4.5 below show all the chi-squared tests for pairs of variables. The null hypothesis of random distribution is rejected for all results except Tobin's Q.

**Table 4.5 Statistical results of  $\chi^2$  of the independence of pairs of variables from the contingency tables**

	OWNCON		ROA		Tobin's Q		BRSIZE	
	$\chi^2$	P-Value	$\chi^2$	P-Value	$\chi^2$	P-Value	$\chi^2$	P-Value
ROA	26.38	0.007*					20.17	0.002*
Tobin's Q	8.23	0.221					13.04	0.042*
LEV	18.23	0.005*	33.94	0.000*	46.50	0.000*		
BRSIZE			20.17	0.002*	13.04	0.042*		
ARTN	21.73	0.001*	46.38	0.000*	27.53	0.000*	30.47	0.000*
EXPRAT	17.71	0.006*	70.15	0.000*	19.73	0.000*	25.61	0.000*

\* Significant at the 0.05 level \*.

Return on assets: (ROA), leverage: (LEV); board size: (BRSIZE); asset turnover: (ARTN); expense ratio: (EXPRAT); ownership concentration: (OWNCON).

	F - shareholding 10% above + Board		F - shareholding 20% above + Board	
	$\chi^2$	P-Value	$\chi^2$	P-Value
ROA	35.23	0.000*	34.15	0.000*
Tobin's Q	13.61	0.034*	15.78	0.014*

\* Significant at the 0.05 level

In our study, a chi-square test indicates that there is an association between ownership concentration and performance (Tobin's Q) because the chi-square value is 8.23 with six degrees of freedom. The critical value with the 0.05 confidence level is 12.59. As the chi-square value is less than the table value, the null hypothesis is likewise rejected.

In addition, a chi-square test indicates that there are associations between the ownership concentration and agency costs through asset turnover (ARTN) and the expense ratio (EXPRAT), because the calculated chi-square value is 21.73 and 17.71, with six degrees of freedom for both (see Table 4.5). The critical value with the 0.05 confidence level is 12.59. Considering that the chi-square value is greater than the table value, the null hypothesis is rejected.

Many researchers, such as Fan and Wong (2001), mentioned that there is association between ownership concentration and the agency problem. Highly concentrated ownership is with the shareholders who then use this power to protect and retain their investments (Kang & Sorensen, 1999). Governments and family shareholdings have high ownership concentrations within Saudi companies. This kind of ownership usually gives priority to the large shareholders, and the small shareholders' interests are not taken into account.

In this association, with an increase in ownership, the agency costs decrease. This finding is in line with prior research which revealed that when the number of shareholders increases, their stake will decrease. Hence, their incentive to monitor and control the business processes will also be lowered, thus increasing the agency cost of the business. This means that the most effective way to keep agency costs low is to have a relatively simple organisational and ownership structure. Having fewer shareholders in family firms will allow them to have a greater share of equity, in turn generating more power to control and supervise management, therefore minimizing agency costs. This result is to be expected because in Saudi-listed family firms, most family members hold leadership positions, and that will lead to reducing agency costs. Also, the number of families who hold shares in each firm was between one to three families.

In addition, the finding is consistent with the idea that the larger the board size is, the less effective the performance. My expectation of this association is that the impact of board size on firm performance may differ according to the abovementioned characteristics and also according to firm size. Some of the disadvantages of large boards are organisation and communication between board-members, leading to less efficient decision making, difficulty in arranging board meetings, and failure to reach a consensus (Jensen, 1993). Communicating diminishes and it is more difficult to clearly share a common goal (Lipton & Lorsch, 1992).

Board size is considered an influential characteristic that may have an impact on firm performance through ROA and Tobin's Q. The result shows that board size is associated with firm performance because the calculated chi-square value for board size with ROA and Tobin's Q is 20.17 and 13.04 respectively, with six degrees of freedom (See Table 4.3). The critical value with the 0.05 confidence level is 12.59, and the p-values are  $0.002 < 0.05$  and  $0.042 < 0.05$  respectively. As the chi-square value is higher than the critical value, and the p-value is less than the confidence level of 0.05, the null hypothesis is rejected.

Furthermore, the disadvantage of having large boards is considered to have an effect on agency costs through asset turnover (ARTN) and the expense ratio (EXPRAT). The result shows that board size is associated with agency costs because the calculated chi-square value for board size with ARTN and EXPRAT is 30.47 and 25.61 respectively, with four degrees of freedom (See Table 4.3). The critical value with the 0.05 confidence level is 9.48, and the p-values are  $0.000 < 0.05$  and  $0.000 < 0.05$  respectively. As the chi-square value is higher than the critical value, and the p-value is less than the confidence level of 0.05, the null hypothesis is rejected.

The findings in Table 4.5 show that larger board sizes lead to more agency costs, which is a result supported by prior studies such as Lipton and Lorsch (1992). This result is, as suggested before: the impact of board size on firm performance may differ according to these characteristics and also according to firm size.

Conversely, we can clearly see there are associations between the firms' performance and leverage. The chi-square value for ROA is 33.94 with six degrees of freedom, and the critical value, with a 0.05 confidence level, is 0.000. As the chi-square value is greater than the critical value, the null hypothesis is rejected. Also, with Tobin's Q and leverage, the chi-square value for Tobin's Q is 46.50 with six degrees of freedom, and the critical value with the 0.05 confidence level is 0.000. As the chi-square value is greater than the critical value, the null hypothesis is rejected.

This result shows association between leverage and performance; therefore, the higher the leverage, the lower the performance, which is supported by prior literature, such as Rajan and Zingales (1995) and Bevan and Danbolt (2000). This was also as expected



before. Regarding cross tabulation, it has been found consistently that large firms in the Saudi stock market are likely to have higher leverage ratios than small firms

#### **4.5. Defining Family-owned firms**

We began our study with the overarching question of how family firms are identified, also whether family firms perform better than non-family firms and whether there is a significant difference in agency costs between family firms and non-family firms. The preceding has not served to define a family-owned firm, but the percentage of the shareholding family members was used as a variable for examination. To further this research, a definition of a family shareholding firm might be of use; however, there is no single definition obtained from the literature. Because of the great variety of definitions, an effective comparison reveals itself to be problematic. This influences the scope and variation of the reports on the levels of financial return and contributions of family-run businesses to the country's economy.

We will adopt the definition of family firms based on our statistical results of chi-square, as well as how the behaviour and performance of firms differ as family shareholding changes. We can see clearly from the chi-square result in Table 4.5 that there is a significant association between family shareholdings on the level of 10% above + one of family on the board of directors and 20% above + one of family on the board of directors and performance variables. As the chi-square value is higher than the critical value, and the p-value is less than the confidence level of 0.05, the null hypothesis is rejected. Which confirm that there is no difference in performance when we cut family shareholdings percentage, whether we choose 10% or 20% and above include one of family members in the board of directors, also, major shareholders in Saudi listed family firms, who have a minimum of 10% of the right in the company.

Also, previous papers have used the same percentage in the case of ownership structure, in order to find out if the shareholder of the company is controlling the company (Maury, 2006; Dahya et al., 2008). Thus, the definition of family firm in this study will be a firm where the family owns a minimum of 10% of the equity of the firm, and at least one representative of the family is involved in the management board. That is because in the case of our sample, 16 out of 54 family firms have a CEO from the same family, which means 29.09% of the CEOs are family members and 70.90% are outsiders or hired CEOs,

as shown in Table 4.6. In these firms, we also see that one of the family members is included on the board of directors. Based on this definition, 54 family firms and 44 non-family firms were selected for this study.

**Table 4.6 CEOs in shareholding firms**

	<b>Family Firms</b>	<b>CEO-family</b>	<b>CEO-hired</b>
<b>Total</b>	54	16	38
<b>Percent</b>	100%	29.62%	70.37%

#### **4.5.1 Firms Observations (FM)**

We have formed a variable called Family Firm according to the definition. This takes the value of one if the firm qualifies as a family firm and zero otherwise. Overall, our sample consists of 98 firms and 624 firm-year observations: 330 family firm-year observations and 294 non-family firm-year observations.

**Table 4.7 Composition of sample**

<b>Year</b>	<b>All Firms</b>	<b>Family Observation</b>	<b>Non-Family Observation</b>
<b>2006</b>	51	23	28
<b>2007</b>	61	31	30
<b>2008</b>	76	39	37
<b>2009</b>	80	43	37
<b>2010</b>	80	43	37
<b>2011</b>	80	43	37
<b>2012</b>	98	54	44
<b>2013</b>	98	54	44
Total firm observations	<b>624</b>	<b>330</b>	<b>294</b>

**Note:** This table shows the development of the ownership data sample composition over time. Column 1 presents the six sample years between 2006 and 2013, column 2 presents the number of firms in each year, and columns 3 and 4 present the number of family and non-family observations in each year.

#### **4.6. Family and non-family firms (chi-square result)**

In this section, we show the results of the chi-square statistic which used with cross-tabulation analysis, assuming under the null hypothesis that distribution is random. To provide a basic picture of the interrelation between two variables and find interactions between them after we identified the family firms in last section. The firms are separated into two groups, family and non-family firms, to compare the chi-square results. Table

4.8 represents the chi-square result for family firms, and 4.9 represents the chi-square result for non-family firms.

**Table 4.8 Statistical results of  $\chi^2$  of the independence of pairs of variables from the contingency tables for family firms**

	OWNCON		ROA		Tobin's Q		BSIZE	
	$\chi^2$	P-Value	$\chi^2$	P-Value	$\chi^2$	P-Value	$\chi^2$	P-Value
<b>ROA</b>	20.77	0.013*					10.87	0.092
<b>Tobin's Q</b>	4.81	0.568					11.08	0.085
<b>LTDTA</b>	16.39	0.011*	9.85	0.131*	30.85	0.000*		
<b>BSIZE</b>			22.68	0.000*	14.13	0.028*		
<b>ARTN</b>	33.75	0.000*	40.77	0.000*	21.62	0.000*	23.83	0.000*
<b>EXPRAT</b>	27.43	0.000*	24.85	0.000*	13.23	0.010*	13.03	0.011*

\*Significant at the 0.05 level

\* Ownership concentration: (OWNCON); return on assets: (ROA); board size: (BSIZE); asset turnover: (ARTN); expense ratio: (EXPRAT); long-term debt to total assets: (LTDTA)

**Table 4.9 Statistical results of  $\chi^2$  of the independence of pairs of variables from the contingency tables for non-family firms**

	ROA		Tobin's Q		BRDSIZE	
	$\chi^2$	P-Value	$\chi^2$	P-Value	$\chi^2$	P-Value
<b>LTDTA</b>	19.61	0.003*	24.13	0.000*		
<b>BSIZE</b>	10.14	0.118	6.29	0.391		
<b>ARTN</b>	25.77	0.000*	7.63	0.106	24.94	0.000*
<b>EXPRAT</b>	85.58	0.0000*	21.98	0.000*	20.27	0.0004*

\* Significant at the 0.05 level

\* Return on assets: (ROA); board size: (BSIZE); asset turnover: (ARTN); expense ratio: (EXPRAT); long-term debt to total assets: (LTDTA)

We can see that in family firms there is an association between ownership concentration and performance (ROA) because the calculated chi-square value is 20.77 with six degrees of freedom. The critical value with the 0.05 confidence level is 12.59. Considering that the chi-square value is higher than the table value, the null hypothesis is rejected. In addition, the chi-square test indicates that there is no association between ownership concentration and performance (Tobin's Q) because the chi-square value is 4.81 with four

degrees of freedom. The critical value with the 0.05 confidence level is 9.48. As the chi-square value is less than the table value, the null hypothesis is not rejected.

The result is inconsistent with existing literature that supports the result that Shleifer and Vishny (1988): there is an association between the large ownership and firm performance, measured by Tobin's Q, which increases when ownership is between 0 and 5 percent but decreases when ownership concentration increases above 5 percent. In our sample, in all family firms the ownership was more than 10%, which is why we found no association between family ownership and performance (Tobin's Q) in family firms.

Moreover, we found that there is an association between firm performance and agency costs through the asset turnover (ARTN) and expense ratio (EXPRAT) in family and non-family firms. In family firms, the calculated chi-square value for ROA with agency costs is 40.77 and 24.85, with four degrees of freedom (see table 4.8). The critical value with the 0.05 confidence level is 9.48. Considering that the chi-square value is greater than the table value, the null hypothesis is rejected. Furthermore, In non-family firms, the calculated chi-square value for ROA with agency costs (ARTN) and (EXPRAT) is 25.77 and 85.58, with four and two degrees of freedom respectively (see Table 4.9). The critical value with the 0.05 confidence level is 9.48 and 5.99. Considering that the chi-square value is greater than the table value, the null hypothesis is rejected.

In our analyses, we found that there is association between performance and agency costs. For example, with (ARTN), which measures how effectively management arranges their assets, less than one percent of family or non-family firms obtain the highest performance (ROA or Tobin's Q); performance decreases with an increase in the asset turnover percentage. Also, with EXPRAT, which measures how effectively management controls operating costs, we see that when this ratio decreases, the firms perform better.

Board size is considered an influential aspect of board characteristics that may have an impact on firm performance through ROA and Tobin's Q. The result in non-family firms shows that there is no association between board size and firm performance because the calculated chi-square value for board size with ROA and Tobin's Q is 10.14 and 6.29 respectively, with six degrees of freedom (See Table 4.9). The critical value with the 0.05 confidence level is 12.59, and the p-value is  $0.118 > 0.05$  and  $0.391 > 0.05$  respectively. As the chi-square value is less than the critical value, and the p-value is higher than the confidence level of 0.05, the null hypothesis is not rejected.

#### 4.7. Descriptive Analysis

This section will discuss the results obtained from the study conducted within 98 firms in the Saudi Stock Exchange (SSE), divided into two categories: 54 firms representing family businesses and 44 firms representing non-family firms. Also, this section will use the sample set to further show and discuss some descriptive statistics for these variables. The descriptive statistics include mean, standard deviation, minimum, and maximum. From these data, we can see the variation in terms of the behaviour and performance of firms with different (non-zero) levels of family shareholding, and that allows for a definition and determination of family ownership.

Tables 4.10 through 4.12 present summary statistics for the variables that are used in the analysis.

**Table 4.10 Descriptive statistics for all samples (2006-2013)**

<b>Variables</b>	<b>Obs</b>	<b>Mean</b>	<b>Max</b>	<b>Min</b>	<b>S Deviation</b>
<b>OWNCON</b>	792	0.19	0.95	0.00	0.21
<b>ROA</b>	729	0.07	0.62	-0.67	0.10
<b>Tobin's Q</b>	712	0.43	4.08	0.00	0.36
<b>ATRN</b>	711	0.60	4.81	0.008	0.52
<b>EXPRAT</b>	720	0.81	3.20	0.01	0.28
<b>FSIZE</b>	759	8.95	12.74	5.46	1.42
<b>BRSIZE</b>	738	8.10	13	4	1.65
<b>LTDTA</b>	727	0.10	0.66	0.00	0.14

Ownership concentration: (OWNCON); return on assets: (ROA); board size: (BRSIZE); asset turnover: (ARTN); expense ratio (EXPRAT); firm size: (FSIZE); long-term debt to total assets: (LTDTA)

**Table 4.11 Descriptive statistics for family firms (2006-2013)**

<b>Variables</b>	<b>Obs</b>	<b>Mean</b>	<b>Max</b>	<b>Min</b>	<b>S Deviation</b>
<b>Price</b>	432	27.92	44.77	16.42	5.92
<b>R-Index</b>	432	33.44	55.22	17.40	8.31
<b>OWNCON</b>	440	0.20	0.80	0.00	0.21
<b>ROA</b>	402	0.08	0.57	-0.60	0.09
<b>Tobin's Q</b>	385	0.49	4.08	0.00	0.40
<b>ATRN</b>	403	0.68	3.05	0.01	0.55
<b>EXPRAT</b>	404	0.79	2.05	0.01	0.25
<b>FSIZE</b>	421	9.11	12.74	5.46	1.39
<b>BRSIZE</b>	407	8.22	13	4	1.78
<b>LTDTA</b>	398	0.102	0.66	0.00	0.15

Price index: (Price); return index (R-Index); ownership concentration: (OWNCON); return on assets: (ROA); board size: (BRSIZE); asset turnover: (ARTN); expense ratio (EXPRAT); firm size: (FSIZE); long-term debt to total assets (LTDTA)

**Table 4.12 Descriptive statistics for non-family firms (2006-2013).**

<b>Variables</b>	<b>Obs</b>	<b>Mean</b>	<b>Max</b>	<b>Min</b>	<b>S Deviation</b>
<b>Price</b>	352	35.24	83.37	13.62	10.36
<b>R-Index</b>	352	38.78	85.83	14.22	10.45
<b>OWNCON</b>	352	0.16	0.75	0.00	0.18
<b>ROA</b>	327	0.05	0.62	-0.67	0.10
<b>Tobin's Q</b>	327	0.37	2.69	0.02	0.37
<b>ATR</b>	308	0.50	4.81	0.00	0.46
<b>EXPRAT</b>	316	0.84	3.20	0.01	0.31
<b>FSIZE</b>	338	8.75	12.38	5.68	1.45
<b>BRSIZE</b>	331	7.96	12	4	1.46
<b>LTDTA</b>	329	0.11	0.59	0.00	0.13

Price index: (Price); return index (R-Index); ownership concentration: (OWNCON); return on assets: (ROA); board size: (BRSIZE); asset turnover: (ARTN); expense ratio (EXPRAT); firm size: (FSIZE); long-term debt to total assets (LTDTA)

Expense ratio

These tables contain descriptive statistics for variables used in the analysis of the sample of 54 family and 44 non-family Saudi-listed firms for the years 2006-2013. There are differences in the mean prices between family and non-family firms. All the price index is rebased to 40 in 2007, and all other points are expressed as a number relative to 40. In Table 4.6 for family firms (2006-2013), the price index ranges from a minimum of 16.42 to a maximum of 44.77 with an average of 27.92, whereas the price index in Table 4.7 for non-family firms ranges from a minimum of 13.62 to a maximum of 83.37, with an average of 35.24. Further, it is found that family listed firms exhibit a lower average. There are differences between family and non-family firms in the mean and for the return index, which suggests significant skewness in the distribution of the size of the firms included in the sample.

The mean of family firms for the Tobin's Q is 0.49, and the mean for ROA is 0.08. Tobin's Q ranged from 0.00 to 4.08, with a high standard deviation of 0.40 compared with 0.30 for non-family firms. The Tobin's Q for non-family firms has a mean of 0.37 and the ROA is 0.05, and the Tobin's Q range is from 0.02 to 2.69. We calculate the Tobin's Q for each company for eight years as we collect the total market value and the total assets for each company. We then obtain Tobin's Q; however, one company did not have data for this variable.

Firm size is represented by the logarithm of total assets adjusted by the effect of inflation. We can see slight differences in the means between family firms and non-family firms, 9.11 and 8.75 respectively, with a low standard deviation of 1.39 and 1.45 respectively. It is clear from the figures for total assets that the sizes of the companies in general increased through the study period; this means that Saudi companies are growing gradually.

#### 4.8 Comparing the Means

Before performing the regression analysis, an independent t test was conducted to test whether the differences of means for variables in the study between family and non-family firms were statistically significant. Table 4.13 presents the t test results.

**Table 4.13 Comparing the Means**

<b>Variables</b>	<b>F-Mean</b>	<b>Non-F-Mean</b>	<b>Diff-Mean</b>	<b>SDE</b>	<b>t</b>	<b>Sig (2Tailed)</b>
<b>Number of firms</b>	54	44				
<b>OWNCON</b>	0.236	0.141	0.094	0.015	6.23	0.000*
<b>ROA</b>	0.086	0.059	0.025	0.007	3.58	0.000*
<b>Tobin's Q</b>	0.494	0.371	0.123	0.027	4.50	0.000*
<b>ARTN</b>	0.682	0.503	0.178	0.039	4.51	0.000*
<b>EXPRAT</b>	0.796	0.845	-0.052	0.021	-2.46	0.014*
<b>FSIZE</b>	9.115	8.753	0.361	0.103	3.49	0.000*
<b>BRSIZE</b>	8.226	7.963	0.262	0.122	2.14	0.032*
<b>LTDTA</b>	0.085	0.131	-0.046	0.010	-4.24	0.000*

\*. Mean is Significant at the 0.05 level (2-tailed). \*\*. Mean is Significant at the 0.01 level (2-tailed). \*\* (SDE) standard error.

**Table 4.14 Yearly mean difference**

Y	Mean Difference							
	OWNC	ROA	Tobin's Q	ARTN	EXRA T	FSIZE	BRSIZE	LTDTA
2006	0.105	0.245	0.283	0.246	-0.062	0.477	0.368	-0.001
	t= 0.277	t= 1.188	t= 1.584	t= 2.262	t= -1.094	t= 1.593	t= .849	t= -0.053
	Sig .781	Sig 0.238	Sig 0.117	Sig .026*	Sig0.277	Sig 0.114	Sig 0.398	Sig 0.957
2007	0.596	0.045	0.076	0.227	-0.044	0.506	0.396	-0.065
	t= 1.454	t= 2.458	t= -0.648	t= 2.162	t= -0.777	t= 1.819	t= 0.984	t= -2.136
	Sig .149	Sig .011*	Sig 0.518	Sig .033*	Sig 0.439	Sig 0.072	Sig 0.327	Sig0.035*
2008	0.109	0.033	0.141	0.092	-0.085	0.482	0.425	-0.043
	t= 2.404	t= 1.737	t= 2.704	t= 0.664	t= -1.136	t= 1.965	t= 1.137	t= -1.448
	Sig .018**	Sig 0.085	Sig 0.008*	Sig .507*	Sig 0.258	Sig .052*	Sig 0.258	Sig 0.150
2009	0.116	0.046	0.089	0.195	-0.056	0.438	0.499	-0.057
	t= 2.670	t= 2.160	t= 1.673	t= 1.988	t= -1.043	t= 1.923	t= 1.431	t= -1.793
	Sig .008**	Sig .030*	Sig 0.097	Sig .049*	Sig 0.299	Sig .057*	Sig 0.115	Sig 0.076
2010	0.110	0.024	0.101	0.171	-0.038	0.402	0.220	-0.060
	t= 2.558	t= 1.320	t= 2.522	t= 1.765	t= -0.695	t= 1.906	t= 0.682	t= -1.982
	Sig .012*	Sig 0.189	Sig 0.013*	Sig 0.080	Sig 0.488	Sig .059*	Sig 0.496	Sig 0.050*
2011	0.115	0.030	0.125	0.184	-0.047	0.394	0.128	-0.060
	t= 2.737	t= 1.256	t= 2.285	t= 1.672	t= -0.816	t= 1.982	t= 0.420	t= -2.003
	Sig .007**	Sig 0.211	Sig 0.013*	Sig 0.097	Sig 0.416	Sig .050*	Sig 0.675	Sig .047*
2012	0.117	-0.002	0.117	0.186	-0.022	0.015	0.059	-0.036
	t= 2.842	t= -0.095	t= 2.285	t= 1.651	t= -0.351	t= -0.935	t= 0.192	t= -1.130
	Sig .005**	Sig 0.924	Sig 0.024*	Sig 0.102	Sig 0.725	Sig 0.351	Sig 0.847	Sig 0.261
2013	0.117	0.010	0.111	0.125	-0.063	0.168	0.059	-0.049
	t= 2.839	t= -0.550	t= 2.156	t= 1.012	t= -1.145	t= -0.960	t= 0.192	t= -1.305
	Sig .005**	Sig 0.583	Sig 0.033*	Sig 0.314	Sig 0.255	Sig 0.339	Sig 0.874	Sig 0.195

\*. Mean is significant at the 0.05 level (2-tailed). \*\*. Mean is significant at the 0.01 level (2-tailed).

Tables 4.13 and 4.14 present a comparison of the means t-test outcomes. This outcome consists of two parts: the mean difference for all observations' data and the yearly mean



difference test. The result provides the mean difference, standard deviation, *t* test, and the two-tailed level of significance for each variable. Fundamentally, these statistics tell us the strength of the relationship of every two variables. The closer the correlation value is to 1 (or -1), the more related the two variables are. The mean difference is obtained by subtracting the mean for the first measurement from the mean for the second measurement. Also, Table 4.14 presents the yearly sample t-test outcome.

We can clearly see the result by looking at the Sig. (2-tailed) column in Table 4.13; all variables are statistically significant based on the differences between variable means; this is because the Sig. (2-tailed) is less than 0.05. Because of this, we can conclude that there is a statistically significant difference between the means in family firms and the means in non-family firms in these variables (reject the null hypothesis).

#### 4.9. Correlation Matrices

This section illustrates the correlation between the variables of agency costs, ownership, performance, and control by using the Pearson and Spearman tests (See tables 4.15 and 4.16). A correlation coefficient analysis is important in order to test the relationship between dependent and independent variables. Table 4.15 presents the correlation coefficients for the family firms, and Table 4.16 presents the correlation coefficients for the non-family firms. This section aims to provide information concerning collinearity among variables in empirical models.

**Table 4.15 Correlations (family firms)**

Variables	LTDTA	ROA	Tobin's	ARTN	EXPRAT	FSIZE	BRSIZ	OWNCON
LTDTA	1							
ROA	<b>-0.184**</b> <b>0.000</b>	1						
Tobin's Q	0.038 0.460	0.043 0.404	1					
ARTN	<b>-0.159**</b> <b>0.001</b>	<b>0.367*</b> <b>0.000</b>	<b>0.204**</b> <b>0.000</b>	1				
EXPRAT	0.083 0.101	<b>-0.244*</b> <b>0.000</b>	<b>0.144**</b> <b>0.005</b>	<b>0.301**</b> <b>0.000</b>	1			
FSIZE	-0.023 0.645	0.076 0.126	<b>0.122**</b> <b>0.015</b>	-0.085 0.089	<b>-0.192**</b> <b>0.000</b>	1		

<b>BRSIZE</b>	<b>0.139**</b> <b>0.006</b>	<b>0.108*</b> <b>0.032</b>	-0.076 0.140	<b>-0.179**</b> <b>0.000</b>	<b>-0.275**</b> <b>0.000</b>	-0.013 0.793	1	
<b>OWNCO</b>	0.007 0.881	0.002 0.966	0.021 0.668	0.088 0.074	<b>0.188**</b> <b>0.000</b>	<b>-0.154*</b> <b>0.001</b>	-0.075 0.129	1

\*. Correlation is significant at the 0.05 level (2-tailed) \*\*. Correlation is significant at the 0.01 level (2-tailed).  
\* Ownership concentration: (OWNCON); return on assets: (ROA); Board size: (BSIZE); asset turnover: (ARTN); expense ratio: (EXPRAT); firm size: (FSIZE); long-term debt to total assets: (LTDTA)

**Table 4.16 Correlations (non-family firms)**

	OWNC	LTDTA	ROA	Tobin's Q	ARTN	EXPRAT	FSIZ E	BSIZ
<b>OWNCO</b>	<b>1</b>							
<b>LTDTA</b>	<b>0.127*</b> <b>0.021</b>	1						
<b>ROA</b>	<b>0.145**</b> <b>0.008</b>	-0.080 0.152	1					
<b>Tobin's Q</b>	-0.057 0.299	<b>0.548**</b> <b>0.000</b>	-0.035 0.529	1				
<b>ARTN</b>	<b>0.144**</b> <b>0.011</b>	<b>-0.197**</b> <b>0.000</b>	<b>0.149**</b> <b>0.009</b>	<b>0.144**</b> <b>0.011</b>	1			
<b>EXPRAT</b>	<b>-0.235**</b> <b>0.000</b>	-0.043 0.449	<b>-0.464*</b> <b>0.000</b>	0.047 0.406	0.084 0.143	1		
<b>FSIZE</b>	<b>0.098**</b> <b>0.000</b>	<b>-0.152**</b> <b>0.006</b>	<b>0.106*</b> <b>0.053</b>	<b>-0.132*</b> <b>0.016</b>	<b>-0.195**</b> <b>0.000</b>	<b>-0.215**</b> <b>0.000</b>	1	
<b>BRSIZE</b>	<b>0.126**</b> <b>0.021</b>	0.026 0.645	<b>0.136**</b> <b>0.014</b>	-0.060 0.279	<b>-0.215**</b> <b>0.000</b>	<b>-0.288**</b> <b>0.000</b>	0.026 0.639	1

\*. Correlation is significant at the 0.05 level (2-tailed), \*\*. Correlation is significant at the 0.01 level (2-tailed).  
\*Ownership concentration: (OWNCON); return on assets: (ROA); Board size: (BSIZE); asset turnover: (ARTN); expense ratio: (EXPRAT); firm size: (FSIZE); long-term debt to total assets: (LTDTA)  
Expense ratio

Using the above analysis, tables 4.15 and 4.16 shows the correlations between variables in family and non-family firms. We can see that the relationship between leverage and Tobin's Q in non-family firms is reflected a positive significant value 0.548, which means that a positive relationship exists between performance and leverage. On other hand, negative relationships exist between leverage and return on assets (ROA), with a value of -0.184 in family firms, meaning there is a negative relationship between performance and leverage. These correlation values therefore reveal the presence of an impact of capital

structure on firm performance. On the other hand, there is no correlation between leverage and ROA in non-family firms.

The table further shows the relationship between ownership concentration and agency costs through asset turnover (ARTN) and the expense ratio (EXPRAT) in non-family firms, reflected in a -0.144 and -0.235 values respectively, which means that there is a significant negative relationship between the two variables. Any increase in the ownership concentration will lead to an expected decrease in the agency costs. Also, the relationship between performance (ROA) and agency costs (ARTN and EXPRAT) is reflected through the values of 0.149 and -0.461, which shows that there is a negative relationship between both elements in non-family firms, as expected. Also the same relationship we found between performance and agency costs in family firms see table 4.15.

The relationship between agency costs (EXPRAT and ARTN) and board size is reflected in the values of -0.179 and -0.275, which again show the negative relationship between both elements in family firms. This means any increase in board size will lead to a decrease in agency costs. The same relationship was found between agency costs and board size in non-family firms (see table 4.16). The correlation values therefore show that board size in family and non-family firms has a positive relationship with a firm's performance (ROA) and a negative relationship with Tobin's Q (see tables 4.15 and 4.16).

These results, however, are not reflective of the entire findings of the study, as more comprehensive statistical analyses are to be discussed. These findings, however, may serve as bases for comparison when conclusion and implications are drawn out from a collective analysis of all the results of the statistical methods used. These relationships need to be tested again in the multivariate analysis in chapter 5 and 6, as many other factors must be accounted for.

#### **4.10 Chart Analysis for Family and Non-Family Firms**

This section discusses the result obtained from the study of 98 firms in the Saudi Stock Market (SSM) divided into two categories: 54 firms representing family businesses and 44 firms representing non-family firms. We classify a family firm as we defined family firms previously: one where the family owns at least 10% of the firm's equity, with at least one family member on the board. Data were collected from Datastream database for

all these companies. The daily share price (P) is the total share price of shares at time t (value-weighted price index), the market value (MV) and return index (RI) which is the total return index of shares of time t. This shows a growth in the value of a share over a specified period, assuming that dividends are re-invested to purchase additional units of an equity or unit trust at the closing price applicable on the ex-dividend date. For the period from 1/Jan/ 2007-31/Dec/2013, it should be noted that firms that are delisted are not replaced.

The aim of this analysis is to discover if there is any difference in the return index and share price between family firms and non-family firms, in order to understand their performance. To compare these data over time, Base year is 2007 in each case and set to 40.

So, to compare RI and P between family and non-family firms, 2007 is designated as the base year and the price index called 40, which is used to show a relative movement.

$$RI = \sum wi RIit \qquad wi = \frac{MVit_{-1}}{TMVt_{-1}}$$

$$P = \sum wi Pi \qquad wi = \frac{MVit_{-1}}{TMVt_{-1}}$$

Where

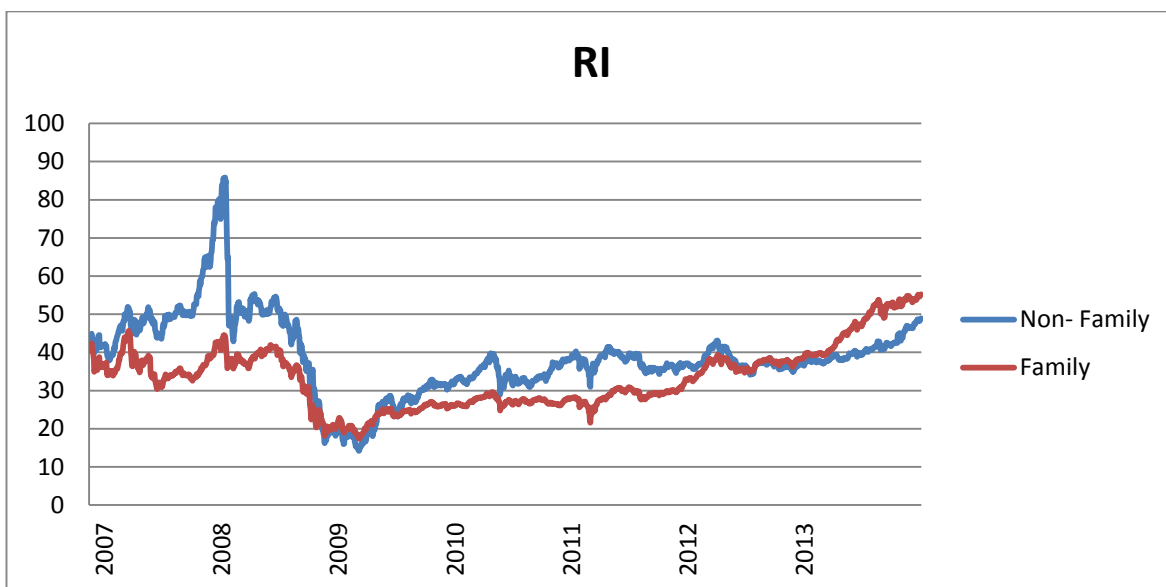
RI is the total return index of shares of time t.

P is the total share price of shares at time t (value-weighted price index).

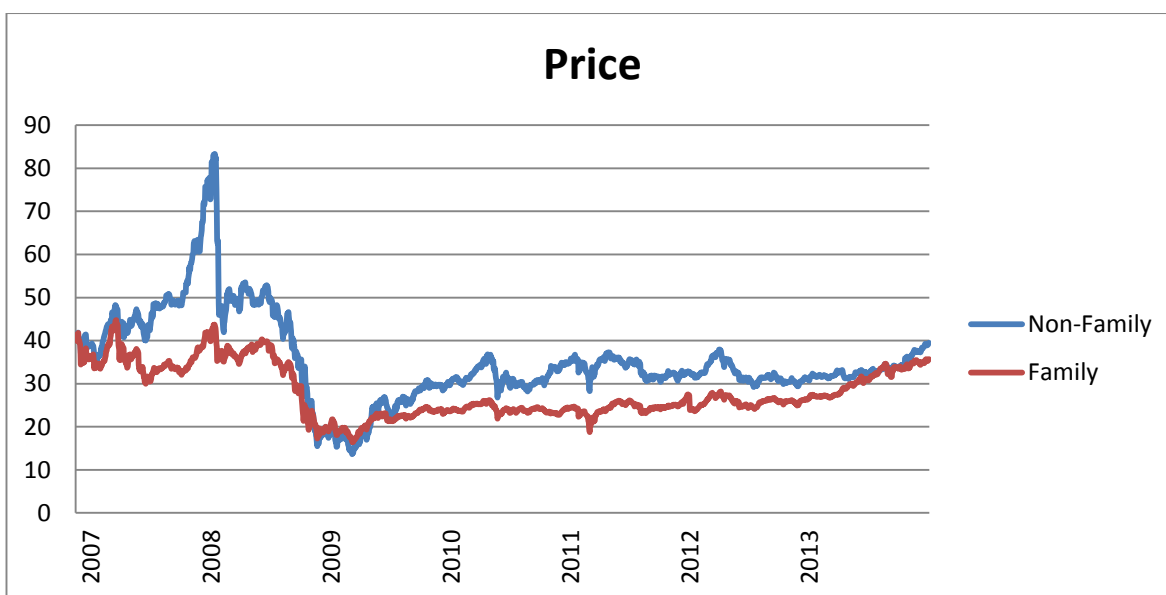
*MVi* is the total market value of shares.

*TM* is the total of the market value for all firms in each day.

**Chart 4.2 Total return index for family and non-family firms**

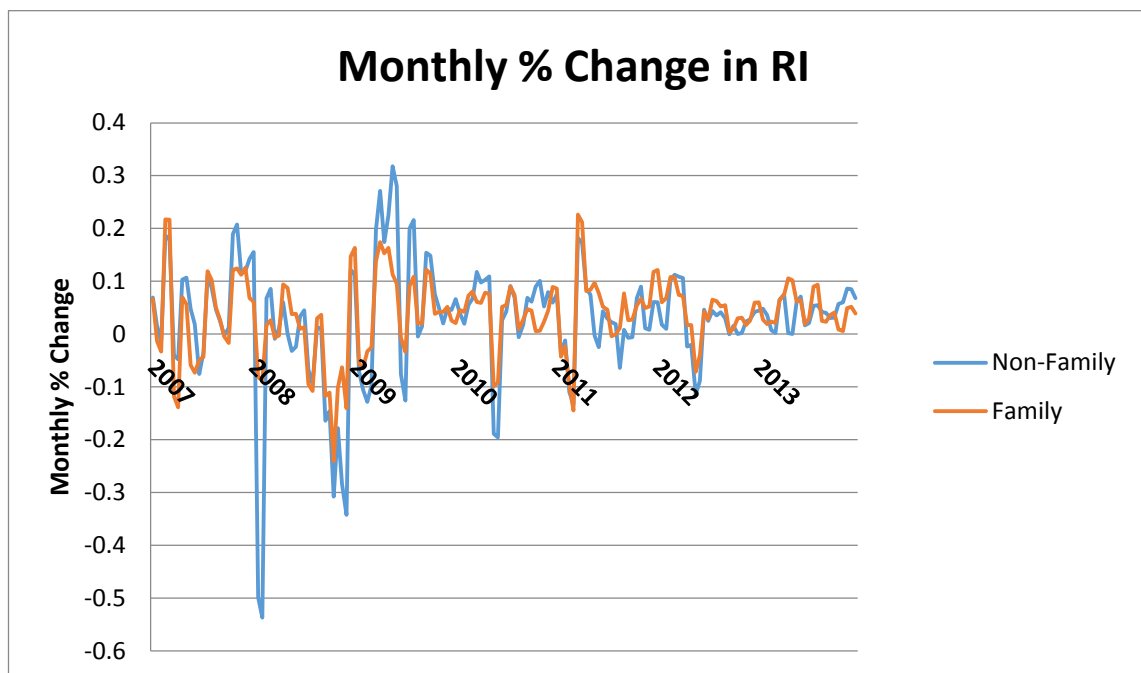


**Chart 4.3 share price for family and non-family firms**



A new chart (4.4) examines changes in the total return index (RI) to make a comparison between family and non-family firms, so we see the relative change in the monthly RI. Each series was logged and then the difference taken to provide the monthly returns.

Chart 4.4 Monthly percentage changes in RI



As can be seen chart 4.4, the monthly change in the RI is interesting, because the pattern of the index in charts 4.2 and 4.3 shows a difference in return index and price; non-family firms have a much more volatile pattern.

For that reason, chart 4.4 reflects the monthly change in return index to see the difference between family and non-family firms during the period. During 2007, there was not much change in the patterns between family and non-family firms, but in 2008 there was a change in the patterns between them because of the financial crises. During that year, non-family firms faced a sharp drop which did not happen in family firms, hence the difference between them. In the period of 2009-2013, the monthly percentage change in return index doesn't show much difference in the patterns between family and non-family firms.

Regarding the difference between the TRI and the PI in family and non-family firms, we notice that the gap between red and blue lines for both family and non-family firms in the charts show there is no different pattern before 2010 and that means dividends are not important in this period. Whereas, charts show a different pattern after 2010 which refer that dividends are important in this period. This means family and non-family firms had different dividend policy in this period, in family firms most shares are held by family members and they prefer to reinvest their profit rather than take it as dividends to increase the family wealth. On the other hand,

dividends may help in reducing the agency problem between inside and outside shareholders by reducing free cash flow (Jensen, 1986).

Overall, there is a difference in the pattern of returns, based on the sample of family and non-family firms. Relative performance appears to differ depending on the (sub) period and specific events. It appears that family firms show a less volatile pattern of returns. However, further exploration may serve to better explain why this is the case. On the other hand, the protection afforded to minority shareholders by the law is, in general, weaker in developing countries, of which Saudi Arabia is one. Family companies can relinquish the private benefits of control by committing to distribute higher and more stable dividends relative to non-family firms.

Regarding the return index in chart 4.2, we can see that the family firms performed better in 2007 and 2008 than non-family firms. During the financial crisis in 2008, the Saudi market was affected by that issue; in that year, the capitalization decreased to SAR 924.5 billion before rising to SAR 1.2 trillion in 2009. A family company is a company where the founding family is the major shareholder; however, the director is not a family member. In this type of company, the founding family has influence and power only through ownership. Thus, the large shareholders in firms are able to discipline and monitor the manager and contribute to the company performance (Shleifer & Vishny, 1986).

For that reason, we can say that the long-term returns of family firms seem to be more stable than that of non-family firms from 2007-2013. When looking at the individual indices, we can see that in the short term, non-family firms have greater returns than family firms.

In addition, we can see that the stock price and return index in the Saudi stock market for family firms during the period of crisis is better than that of non-family firms, and that is because of the ownership concentration and control of management in these firms. Mitton (2002) found that firms with higher ownership concentration had a higher return for the period of the crisis. Also, Lemmon and Lins (2003) show that during the crisis period, firms with controlling owner-managers did not suffer much loss of share value.

Furthermore, Pérez-González (2001) finds that the stock market reacts negatively to the appointment of family heirs as managers. This is reflected in what happened in family firms in Saudi Arabia, because in most of these companies, family members were in the

leadership positions in the company, even if they were not good managers and have no skills in management. Conversely, non-family firms and some family firms are run efficiently by qualified managers, which help these firms to perform better. In family business firms, the concern is that managers may act in consideration of the controlling family, but not for shareholders in general.

Some family firms are managed by family members and others are managed by non-family members; that is the situation also in the Saudi Stock Market, which could have a positive or negative effect on firm performance. Lee (2006) and Sraer and Thesmar (2007) all studied samples of listed companies in different markets and all found that owner-manager firms perform better. As far as listed companies are concerned, the results vary. Lee (2006) found a positive effect on performance for firms managed by family. Conversely, some studies found a negative effect on performance (Filatotchev et al., 2005).

In our sample of firms, 16 firms were managed by a family CEO. One of the reasons why non-family firms perform better than family firms may be because family-managed firms may have a lack of professional management, and as a result, it will be difficult for them to become successful (Dyer, 1989). Additionally, poorly educated family members in the management team may also lead to resentment on the part of senior non-family managers because they do not see merit, talent, and tenure as requisite skills.

Sraer and Thesmar (2007) said that family firms show more stable earnings per share and have a lower variance in analyst forecast dispersion than non-family firms. This is because of the trust between family members, which is an important source of strategic advantage and leads to less sensitivity to market shocks and reduces problems. In our result, we can see that family firms were clearly more stable than non-family firms in the long term, whether before or after the financial crisis. In 2008, the value of firms dropped in the Saudi stock market, but that of the non-family firms dropped sharply, which did not occur with family firms. Family managers aim for long-term value maximization, but managers of non-family firms look at short-term satisfaction of their own personal gains and shareholders (Daily & Dollinger, 1991).

The performance variations between different industries are well known in theory and practice. Interestingly, Pressey and Mathews (1997) suggested that in some industries, family firms perform much better than non-family firms. For instance, in the retail sector,



family firms are able to use their name and commitment to the firm to their benefit. This may be due to the fact that one of the main reasons for success in retailing is attributed to close, personal contact with the client. There is a great amount of evidence of this; some of the biggest retail companies in the world, such as Carrefour in Europe, are family controlled, Loeb stores in Switzerland are controlled by the family, and Wal-Mart in North America is as well. An additional example from Saudi Arabia is the Savola retail group (Panda), one of the biggest retailers in the Middle East and one of the most successful supermarket chains, owned and run by the Fakhri Family (Hawkamah Institute and IFC, 2011).

Of course, most of the world's elderly companies are in very old-economy industries, for example building, agriculture, and hospitality (Economist, 2004). These industries want long-term investment and that corresponds to the independence and objectives of family firms. In our results, this may be one of the reasons why we see that family firms are more stable and perform better in terms of long-term investment.

In addition, in general, family firms' managers avoid debt in order to reduce risk to their family capital. Masulis (1988) explains why family firms try to reduce debt levels; he suggests that managers in family firms prefer having less leverage than non-family firms to reduce the risk of their investment in the company. This theory is applicable to managers of family businesses who have a significant part of their assets invested in the business. For instance, Anderson et al. (2003) use data from the Forbes Wealthiest Americans list to show that family business owners invested an average of 69% of their wealth in the company. Therefore, CEOs of family firms prefer to avoid risk because they have "most of their eggs in one basket". Chapter seven of this study shows how capital structures differ between family and non-family firms.

In our result, that could be one of the reasons why the return index in family firms performs worse than that of non-family firms on the Saudi Stock Exchange. There is a positive relationship between return and risk (high risk, high return; low risk, low return). Agency costs in family firms might be lower if members of the founding family are involved in the management of the family firm. Based on this argument of lower agency costs in family firms, we would expect them to use less income smoothing than non-family firms. Hence, we expect that family management leads to lower levels of diversification.

#### **4.11. Summary**

This chapter reports the results of empirical findings on the association between four important sets of variables, namely, agency costs, ownership structures, board characteristics, and performance for firms listed on the Saudi Stock Exchange over the period of eight years from 2006 to 2013. The objective of this chapter has been to statistically examine the association between the above variables, analysed with the chi-square. We defined family firms as those where the family owns at least 10% of the firm's equity with at least one family member on the board, and we made a comparison between the results to see how family firms differ from non-family firms. We then discussed descriptive statistical analyses for these variables. The descriptive statistics include the mean, standard deviation, minimum, and maximum. The Pearson and Spearman tests were used to examine the correlation between the variables of agency costs, ownership, performance and control variables. Finally, analysis was conducted to discover if there is any difference in the return index and share price between family firms and non-family firms, to gain an understanding about performance.

#### **4.12 Conceptual Framework**

Based on the agency theoretical framework, this thesis includes agency costs, ownership concentration, capital structure and board of directors' characteristics to examine if they affect the firm performance. This thesis focuses on Saudi Stock Exchange firms divided into family and non-family firms.

Referring to the framework in Figure 4.1, this thesis examines agency costs in family and non-family firms. It also examines ownership structure classified as ownership concentration managerial ownership and state ownership. Finally, it examines the board of directors' characteristics through board size and CEO duality, comparing family and non-family firms.

Also, as shown in the framework in Figure 4.2, it examines and determines factors that affect capital structure in listed companies of Saudi Arabia, by comparing family and non-family firms.

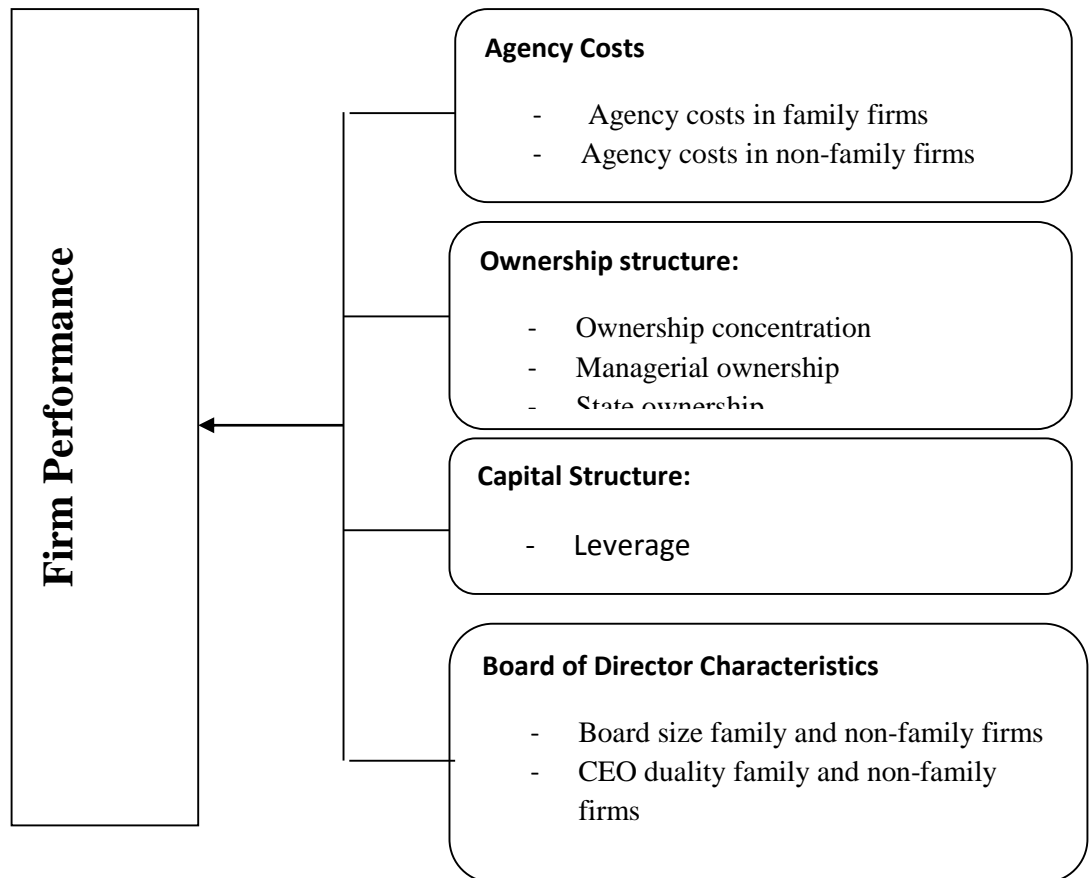


Figure 4.1 Conceptual model on firm performance

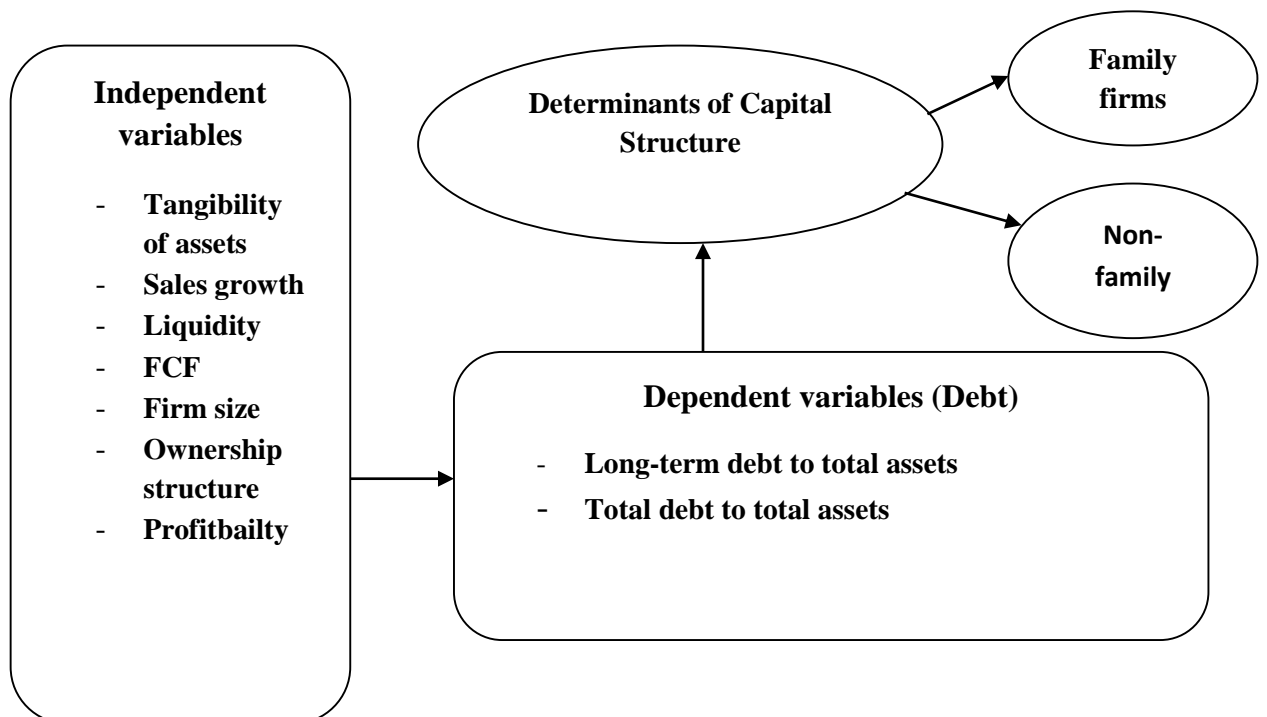


Figure 4.2 Conceptual model on capital structure

### **4.13. Hypotheses Development**

In this chapter, we discuss the results, highlighting descriptive statistics and preliminary analysis.

In chapter five, hypotheses will be developed

The chapter starts with a discussion and testing of the first and second hypotheses denoted by

(H1) and (H2); these investigate how performance is different between family and non-family firms and the relationship between ownership concentration and the firm's performance for family and non-family firms. The second section tests and discusses the third hypothesis denoted by (H3), which investigates the relationship between managerial ownership and firm performance for family and non-family firms. The third section tests and discusses the fourth hypothesis denoted by (H4), which investigates the relationship between state ownership and firm performance of family and non-family firms. The fourth section tests and discusses the fifth hypothesis denoted by (H5), which investigates the relationship between the board of director characteristics of board size, CEO duality, and CEO-family on performance in family and non-family firms. This is followed by testing and discussing the sixth hypothesis denoted by (H6), which investigates the relationship between agency costs and firm performance for family and non-family firms. The seventh hypothesis, denoted by (H7), investigates the direct relationship between firm size and firm performance, then hypothesis (H8) investigates the relationship between leverage and firm performance of family and non-family firms

These hypotheses will be tested using multivariate analysis. Then the results will be illustrated and compared with prior findings, if available. This study examines the effect of multiple variables on firm performance as a dependent variable; thus, a multiple regression is considered to be suitable in this study.

# CHAPTER FIVE

## DETERMINANTS OF FIRM PERFORMANCE

### 5.0 Introduction

In the corporate finance literature, a great deal of discussion is prevalent regarding the association between corporate governance, ownership concentration, and firm performance. Concentrating mainly on the United States and the Asian experience, there exists a large body of finance and law literature. It investigates the relations between corporate governance and firm performance in many countries by means of multi-country research or case studies of country (see Faccio & Lang, 2002; Lemmon & Lins, 2003).

A majority of the listed firms in many Arab countries have the status of family firms; hence, it is common for family members to possess considerable power in management. This may be achieved through chairmanship or being a member of the board, as well as by the control of senior management positions (OECD, 2003). It may result in conflicts of interest between the controlling family and minority stakeholders. For that reason, in Arab countries, it is very important to understand corporate governance (Saidi, 2004; Najib, 2007), as certain conditions apply that could affect corporate governance.

The impact of family ownership in firm value habitually has a positive influence. Shleifer and Vishny (1986) found a positive relationship between ownership concentration and firm performance, whereby agency costs were reduced by owners controlling and supervising activities in the firm. Holderness and Sheehan (1988) summarise that there are positive effects on performance for most firms that have majority shareholders. Berle and Means (1932) found the importance of ownership concentration in resolving the agency issues between an organisation's owners and managers.

In this chapter, we aim to address these issues in the literature by providing a detailed investigation of the impact of ownership and board structure on corporate performance using firm data from Saudi Arabia. Our examination investigates the relationship between family control (a family member in the CEO position and shareholding) and associated performance. In this study we address the following question: how does ownership

concentration affect performance when comparing family firms to non-family firms? By doing so we make an important contribution, because most other studies suffer from the problem that family ownership is not accurately measured. Avoiding significant measurement error is useful in this context since biased and inconsistent results are (largely) avoided.

Family ownership is relatively easy to track in KSA and there are, potentially, fewer biases in the measurement and determination of family ownership, which may not be the case in other settings; in family businesses in Saudi Arabia, it is easy to identify the names of members of the family in the company because the whole family has the same family name whether they are males or females, before or after marriage. This is because Islamic law in Saudi Arabia gives the right for a woman to keep the name of her father after marriage. Therefore, the names of owners in second generation family firms will be clear and easy to identify. For the third generation, we can determine the family ownership in firms through males, but sons and daughters of second generation females are difficult to identify because they will appear under another family name (their father's), unless their father has the same family name. However, most firms in our sample are from the first and second generation, and the third generation in our sample is relatively rare. In addition, we ascertained the all ownership percentages for wives as mentioned in financial reports.

Therefore, the data in this study, based on the available sources, is accurate because the firms in the Saudi market are run by second and third generation family members. Also, this study, compared with other studies of family firms in Europe and the United States, is clearer about family ownership because women in these countries take their husband's name after marriage, so determining the ownership in firms in the second or third generation is difficult for females, as we mentioned in chapter three.

Moreover, to the best of our knowledge, this is the first sample study to assess the relationship between family ownership and performance in listed KSA firms. Using market and accounting measures of performance, we run a time-series cross-sectional analysis of family and non-family firms, using the Thomson ONE Banker database for ownership concentration information; other data is sourced from Datastream and the company financial reports.

The influence and control of family in Saudi-listed firms may be even more extensive than observed ownership levels suggest. A family firm in this study is one where the family owns at least 10 percent of the company shares and has a family member on the board of directors. Such firms constitute over 53 percent of the firms. In this study, using 98 non-financial firms recorded from 2006 to 2013, we notice that families are a prevalent and important class of investors. We believe that our analysis contains several features that add to many aspects of the literature on agency theory and ownership. There is a recognized gap with regard to family ownership in the Arab region, and the research contributes to filling this gap. Corresponding to Shleifer and Vishny's (1997) claim for additional international research on corporate finance, this analysis will play a part in comprehending the role of agency issues from a developing country perspective. It is also able to address the measurement of family ownership

Extensive research regarding corporate governance in Arab countries is much needed, to provide information and as a basis for corporate governance action plans and corporate sector reforms in these countries; this will help to establish priorities. Some Middle Eastern countries have the same culture, language, heritage, and religion; also, the regulatory and institutional environments and the corporate structure of firms are similar. Because of this, the research will be beneficial to other economies, despite the fact that the main concentration of this research is in Saudi Arabia. The family-owned corporate structure is not unique to Saudi Arabia. A number of other countries, especially those in the Middle Eastern region, also have the same or a similar environment.

This research also extends previous research on corporate governance (see Haniffa & Hudaib, 2006 and Ghosh, 2006) by keeping in view the influence of a vital family ownership and board characteristics (for instance, when a family member holds the position of the CEO) on the firm's performance, which can probably function as a vital governance tool.

The rest of this chapter is organized as follows. In section 5.1, firm performance measurement is discussed. Section 5.2 reviews the related literature and establishes empirical hypotheses. Section 5.3 contains the model specification. Section 5.4 describes the data and techniques of statistical analysis. Section 5.5 provides descriptive statistics, section 5.6 reports the multivariate analysis, section 5.7 tests the robustness of the result, section 5.8 provides the conclusion, and section 5.9 contains summary of results.

## 5.1 Firm Performance Measurement

The company's performance can be viewed commonly in primarily two ways: (i) market measures (such as stock returns) and (ii) accounting measures (for instance, return on assets (ROA) (Oswald & Jahera, 1991). As far as market measures are concerned, not much consideration is given to them and previous studies have embraced the accounting measures (or Tobin's Q, the ratio of market value to the book value of total assets) to verify company performance. Some researchers (Chakravarthy, 1986; Oswald & Jahera, 1991) argued that the company's performance cannot be signified through the accounting measure and it is deficient when considering the efficiency of company performance. Chakravarthy (1986) identified that the major problem with accounting data is that it can be influenced very easily by management authorities. Additionally, there is a chance that two companies may practise contrasting accounting methods (for instance, depreciation) and dispense distinctive accounting reports (Oswald & Jahera, 1991). Furthermore, Brealey and Myers (1996) and Oswald and Jahera (1991) expressed the view that by considering the financial situation, the market value of the company's stock provides the best reflection of company performance. Gitman and Madura (2001) acknowledged that in order to analyse whether the managers' interests are consistent with those of the shareholders, the market return performance is usually taken into consideration. The managerial skills and abilities can be challenged regarding whether they are competent enough to maximize shareholders' wealth, if the stock price is relatively weaker than the market price.

Conversely, Boardman et al. (1997) mentioned that accounting measures are extensively used due to the feasible empirical proxies to calculate the company's economic rate of returns, despite the fact that there is criticism of the use of accounting measures (Boardman et al., 1997). Gitman and Madura (2001) mentioned that large companies, like General Motors and IBM in the US, are profoundly involved in increasing their profitability and return on stock through enhancing the overall efficiency. This research will employ both the market returns and accounting measures (profitability) as possible substitute proxies for the company's performance. These two factors will be taken into consideration in the following section.



### ***5.1.1 Firm Performance***

The effect of performance on the owners' decision to increase their shares is vague, as has been ascertained through past studies. To measure firm performance, it is difficult to pick a perfect performance measure for listed firms. In the corporate governance literature, Tobin's Q is by a wide margin the most broadly utilized measure of firm performance. The first critical study that used this indicator was Morck et al. (1988), followed by more recent works (Kapopoulos & Lazaretou, 2007; Hu & Izumida, 2008; Chiang & Lin, 2007).

In observational investigations of proprietorship execution relationships, two measures of firm performance are ordinarily utilized: (1) Tobin's Q, a stock market measure is used to measure the valuation of the firm; and (2) ROA (return on assets), an accounting performance measure (Hu & Izumida, 2008). Tobin's Q is measured as the firm market value divided by total assets, which have been valued at either the book value or the replacement value (Demsetz & Villalonga, 2001). ROA is the ratio of the net income divided by total assets (Demsetz & Villalonga, 2001). In comparison, Tobin's Q refers to a traditional measure of expected long-run firm evaluation (Bozec et al. 2010), while ROA is more likely to determine an approximate value of what management has achieved and indicators to the profitability of firms on the short term based on the history data (Kapopoulos & Lazaretou, 2007).

#### **5.1.1.1 Tobin's Q**

The limit of Tobin's Q is for measuring an association's value from a business perspective. James Tobin formulated the Tobin's Q ratio, which compares the stock value of a listed firm with a firm's book worth; the latter depends on the future earnings that are likely to be created by the net assets (Penman, 2007). The justification behind the ratio is that cost, in the numerator of Tobin's Q, is dependent upon the expected future earnings that investors are acquiring. Along these lines, the higher the typical wage related to book worth, the higher the Tobin's Q (Penman, 2007). This study defines the Tobin's Q as follows:

**Tobin's Q** = The ratio of the book value of total assets minus the book value of equity, plus the market value of equity to the book value of assets.

Tobin's Q is the ratio of the market value of a firm. So, this measure is used to measure the value of the firm.

### **5.1.1.2 ROA**

The ROA, according to Eng and Mak (2003), is used to measure the profit of the organisation. As described in the preceding section, ROA is used for measuring an organisation's performance from an accounting estimation. Penman (2007) asserts that ROA is a consistent measure of the profit of operations. It is defined as follows:

**ROA**= operating net income/ total assets

The ROA was employed by Chen et al. (2005) as an indicator to ascertain the firm's performance so that the relationship between ownership concentration, performance of the organisation, and dividend policy in Hong Kong could be investigated. Hu and Izmudia (2008) used ROA as an indicator of measuring accounting performance to examine the relationship between ownership concentration and firm performance in Japan. Their study showed that ownership concentration had a positive causal relationship with ROA. With respect to China, Chen et al. (2009) employed ROA to demonstrate the profitability of an organisation and to ascertain if ownership was an influential factor for listed corporations in the country. Ownership structure, corporate governance, and firm performance were studied by Wei (2007) with respect to Chinese listed firms. King and Santor (2007) conducted a study and used ROA to represent the profitability and efficiency of the firm. They showed that higher ROA was attained by firms that were bigger and had greater growth. Anderson and Reeb (2003) conducted a study to determine the link between founding-family ownership and performance of the company. They found that a substantial and positive relationship was demonstrated by both young and old family firms and family firms normally performed better than non-family firms.

### **5.1.2 Stock Market Returns**

Fisher and McGowan (1983) and Oswald and Jahara (1991) advised that the stock return highlights the company's performance as what it will get in return from the market. Stockholders commonly see the stock values as a primary factor in determining the company's performance (Gitman & Madura, 2001). Fama and Jensen (1983b) recommended that the strengthening and association of the internal regulation and

arrangements for present and future net cash flows of the company to the market are provided indication of the stock prices. In addition, stock return as a measure of company performance is associated with the ownership structure, as discussed in earlier research such as Oswald and Jahera (1991) and Han and Suk (1998). As far as Saudi Arabia is concerned, no previous research has been undertaken using stock returns for determining company performance in order to clarify whether it is affected by ownership structure. The prices of nonfinancial Saudi companies listed on the Saudi Stock Exchange between 2006 and 2013 were chosen for this analysis.

There are a number of ways to determine the stock return. In this study, it is represented as follows:  $[\text{value at end of financial year} - \text{value at start of financial year}] / \text{value at start financial year}$ .

**Table 5.1 Measurement of firm profitability**

Name	Short	Definition	Representative Studies
Return On Assets	ROA	A financial ratio that shows the percentage of profit a company earns in relation to its total assets	Denis & Denis, 1994; Lehmann & Weigand, 2000
Tobin's Q	Tobin's Q	The ratio of the book value of total assets minus the book value of equity, plus the market value of equity to the book value of assets.	Bjuggren & Wiberg, 2008; Ozkan, 2004
Market returns	MR	$[\text{value of return index at end of financial year} - \text{value of return index at start of financial year}] / \text{value of return index at start financial year}$ .	

## 5.2 Related Literature and Hypotheses

The following discussion examines the potential relationships between family ownership and corporate performance with specific focus on family ownership (ownership concentration, managerial ownership, and state ownership) and board structure (CEO-family, board size, and CEO/chair non-duality).

### ***5.2.1 Ownership Concentration***

There is not much awareness in most Arab countries, including Saudi Arabia, of the influence of family ownership on firm performance; despite the fact that a large number of firms are owned by families. Family owners have a tendency to work for their own benefit at the cost of firm performance because of the possible rewards and authority. This could lead to suboptimal investment decisions, undue rewards, and sustained recruitment of incompetent owner-managers that could result in increasing agency costs (Fama & Jensen, 1983; Shleifer & Vishny, 1997). Family firms have a tendency to destroy the firm value because they are not willing to take risks (Thomson & Pederson, 2000). Family-owned firms also have a tendency for decreasing managerial agency costs and maximizing firm value; this could be a reason for their relative benefit (Demsetz & Lehn, 1985). Family ownership has a broader horizon because of family members' constant presence in their firms and long tenure. In addition, they are able to keep up longer relationships with external bodies like suppliers (Anderson & Reeb, 2003).

There is an important relationship between family firms and firm performance, as concluded by many researchers. In East Asian firms, due to low transparency, family control could damage minority stakeholders, as stated by Faccio et al. (2001). In East Asian countries, the performance of family firms is less than their non-family firms, as observed by Claessens et al. (2002). The family firms in Norway were less productive than non-family firms, as displayed by Barth et al. (2005). Other researchers said that in Western Europe, firms run under a founding family are more profitable than non-family firms, (Maury, 2006). In the United States (US), family firms were found to perform better than non-family firms, as concluded in a study of the relationship between family firms and firm performance by Anderson and Reeb (2003).

In family firms, the significance of family management and family structure has been examined. In the US, France, Germany, and the UK, Bloom and Van Reenen (2007) found evidence of poor management when firms were run under the family ownership. In the US, it was found that the performance of family-CEO firms was better than that of non-family firms, but once they were run under the heir functioning as the CEO, the firm value was destroyed (Villalonga & Amit, 2006).

Agency conflicts occur between managers and their widely dispersed shareholders; conversely, due to the above factors, such agency conflict in Saudi Arabia occurs between family owners/shareholders and minority shareholders. The percentage of shares owned by the family and their relatives is the definition of family ownership. Based on agency theory, monitoring mechanism efficiency is affected by ownership structure, and the ownership concentration should reduce the agency costs. This research aims to show how ownership concentration would affect financial performance.

From the above discussion, the following hypotheses are proposed:

*H1: The determinants of performance are different between family and non-family firms.*

*H2: There is a positive relationship between ownership concentration and firm performance.*

### **5.2.2 Managerial Ownership**

Managerial ownership impacts the firm value and this can be proved theoretically through two major hypotheses. There is the interest hypothesis, where the managerial ownership role has been associated with company performance (Jensen & Meckling, 1976; Jensen, 1993). This states that manager ownership shares have the ability to align the manager and shareholder interests. On the other hand, the entrenchment hypothesis believes that if management has high shares in the company, the value of the company decreases (Jensen & Meckling, 1976; Fama & Jensen, 1983). The proposition is that the entrenchment level would be higher if the shares held by the managers are high as the organization resources would be used to attain personal benefits. Overall, the organization's performance would decline (Morck et al., 1988).

In this study, managerial ownership is measured in terms of percentage of shares owned by executive and non-executive directors in the firms (McConnell & Servaes, (990; Short & Keasey, 1999). Executive directors are the managers who operate the company on a daily basis, and non-executive directors are those who do not involve themselves in the day-to-day activities of the company. This research assumed that non-executive directors are part of a one-tier system of the management body present in the board room (Holderness, 2007).

Increasing managerial ownership in the firm leads to mitigating the agency costs, and that will help to improve performance (Jensen & Meckling, 1976). Based on the traditional

agency theory, the study expects that managerial ownership positively affects firm financial performance

From the above discussion, the following hypothesis is proposed:

***H3: There is a positive relationship between manager ownership and firm performance.***

### ***5.2.3 State Ownership***

Studies are very limited for the Saudi Arabian capital market to ascertain whether or not government ownership in corporate governance provides additional explanation for company value. Jensen and Meckling (1976) studied corporate governance with the agency theory. The main objective for the shareholders in any company is to increase their value, but managers may choose self-interested schemes that do not increase company value because of separation of ownership and management

In this situation, management might be offered by the government ownership. To regulate the management's self-interest attitude in accordance with the goals of company, as a result, enhance better performance. LaPorta (1999) stated that the five kinds of fundamental owners includes a high level corporation, family or individual, the state, a widely held financial institution, and miscellaneous, firms with no single ownership, for example. According to Shleifer and Vishny (1997), firms operated by the government are a form of concentrated ownership in which the government uses companies for political objectives.

The relationship between corporate performance and ownership structure in Spanish firms is studied by Orden and Garmendia (2005). Return on assets (ROA) and return on equity (ROE) are used in this study to measure performance. According to their results, as compared to other ownership structures, firms managed by the government had a negative effect in performance. Currently, the effect of ownership structure on company performance and the default hazard of having a model that contains 59 public companies in Jordan between 1989 and 2002 was studied by Zeitun and Tian (2007). According to their study, on the basis of the accounting measure, the performance is affected by ownership structure. However, the performance of the company is negatively related with government ownership based on accounting measures, whereas the latter is positively related with market performance (Tobin's Q).

The majority of studies based on the literature review have shown a negative relationship between government ownership and performance. There are several causes behind this relationship. The government is not in line with the profit motive in all cases, but the government may have other motives, such as addressing unemployment. The government is the representative of the public rather than the ultimate owner of authority. Moreover, in most cases, the government exercises power instead of the real owners.

Based on the above discussion, the study expects that government ownership negatively affects firm financial performance. From the above discussion, the following hypothesis is proposed:

***H4: There is a negative relationship between state ownership and firm performance.***

#### ***5.2.4 Board Variables***

The board, being the instalment of internal governance, is the agent of the stakeholders, and the board is expected to protect the shareholders by checking the behaviour of the management on shareholders' behalf, as managers have a tendency to put their personal interests before the interests of shareholders or to not perform in the best interest of stakeholders (Jensen & Meckling, 1976).

In literature, the board size is considered a significant factor in determining the efficiency of corporate governance (Pearce & Zahra, 1992; Jensen, 1993). Some authors believe that since larger boards present a wider perspective and more information on the planned operations of the firm, they are more efficient (Pearce & Zahra, 1992). On the contrary, according to some researchers, in the presence of a larger board size, the problems of coordination, communication, and slower process exceed the benefits of having more people to draw on; hence, the value decreases (Yermack, 1996; Eisenberg et al., 1998). Raheja (2005) supported the view that due to free-riding problems, the larger board size results in a less efficient monitoring role.

Various researches has studied and analysed the relationship between board size and firm performance. A positive relationship has been observed (Mak & Yuanto, 2003 and Haniffa & Hudaib, 2006). Also, a negative relationship is observed by some studies such as Adam and Mehran (2005) and Dalton and Dalton (2005). To control and monitor

operations of large firms, a larger board size is required, according to the agency theory. However, many board directors may reduce monitoring efficiency of management and that will lead to increased agency costs.

The impact of the chief executive officer's (CEO) duality on the board's effectiveness is another matter discussed in the literature. In a report on corporate governance in UK firms, Cadbury (1992) noted the possibility of opportunistic behaviour on behalf of the insiders when the two positions are not separated. The role of chairperson and CEO should be separate to reduce agency problems, according to Fama and Jensen (1983). To protect shareholder rights, CEO and chairman responsibilities must be divided as proposed by the agency theory (Williamson, 1985).

However, whether or not the separation of the two positions increases performance is not agreed upon in the literature. Some researchers find a negative relationship; according to Dahya et al. (1996), there was a decrease in the accounting performance of companies.. Similarly, companies with separate roles produced better accounting performance than those with dual CEO roles, as concluded by Rahman and Haniffa (2005) in research on Malaysian firms. In an attempt to control agency problems, Fosberg and Nelson (1999) researched a shift of leadership structure by using information from Compustat; they assessed that in the three years after the change to a separate leadership structure, corporate performance improved greatly. However, some researchers suggest that no relationship exists between duality and corporate performance (Haniffa & Hudaib, 2006). As far as we know, only Elsayed (2007) has carried out research in an Arab nation (Egypt), and according to him, CEO duality had no influence on corporate performance. In addition, a model containing an interaction term between industry type and CEO duality resulted in the finding that the influence of CEO duality on corporate performance fluctuates across industries. Also, Elsayed (2007) concludes a positive and significant influence of CEO duality when corporate performance is low; this happens when firms are categorized according to their financial performance.

Saudi Arabian boards of directors are organized in accordance with the Companies Law (1965) and the company structure. The Companies Law establishes the fundamental requirements for the board structure, liabilities, and responsibilities. The size of the board must be between three and eleven people, and it is required that one third of the board of directors has to comprise non-executives. The separation of the chief executive officer and the chairman of the board is required by the Companies Law.



However, recent reports indicate that the controlling family in Saudi Arabian firms dominate management boards. Also, in the Saudi Arabian context, there is no available empirical evidence of the influence of board structure on firm performance. The boards of Saudi firms are generally dependent on controlling shareholders' management. It should be noted that there is a lack of regulations prevailing in the structure of the board of directors, insufficient strategies leading the equilibrium between executive and non-executive directors, and insufficient knowledge of the concept of independent directors.

Three variables are incorporated in our empirical model to examine the effectiveness of the board in reducing agency problems, which is assumed to subsequently produce better performance: the total number of directors (board size); a dummy variable that takes the value of 1 if the CEO and chairman of the board are separate (non-duality), and zero otherwise; and a dummy variable that takes the value of 1 if the CEO position in the firm is held by a family member (CEO family member), and zero otherwise.

According to the above discussion, because board structure theories give different implications for the relationship between board structure and firm performance, this research assumes either a negative or positive relationship between profitability and board structure, as is shown in the following hypotheses:

*H5 A: There is a positive relationship between profitability and board size.*

*H5 B: There is a positive relationship between profitability and non-duality.*

*H5 C: There is a positive relationship between profitability and CEO family.*

### **5.2.5 Agency Costs and Performance**

In this paper we use three proxy measures for agency costs, which are often found in the accounting and financial economics literature. The first proxy is the asset utilisation ratio; this measure of agency cost is calculated as the ratio of annual sales to total assets. This measure determines the effectiveness of firm investment decisions and the ability of the management to direct assets to their most productive use. If the asset utilisation ratios are at low levels, the firm's management is making non-optimal investment decisions. So, this measurement reflects the practice of management and how they manage the company assets. If this ratio is at a high level, there is a high amount of sales, which will lead to high cash flow generated for a firm. We have also constructed additional proxies for

agency costs in order to test the robustness of the results. The second proxy is the expense ratio; this is calculated as operating expenses divided by annual sales. This ratio is the measure of how effectively the firm's management controls operating costs and other direct agency costs. Administrative expenses to sales ratio is the third proxy, which includes commissions by agents, advertising, salaries, and many more expenses. The managerial activities of spending firm resources are reflected by the expense ratio. A high expense ratio would lead to high agency costs between shareholders and managers. So, this measurement indicates the practices of management in the company and how they deal with firm assets and expenses. In terms of comparing family and non-family firms, as mentioned earlier in chapter four, there is a difference in the management way and behaviour between family and non-family firms, which can affect the practice of management. This may create agency costs which directly or indirectly affect firm performance.

**Asset Turnover (ASTN)** = annual sales to total assets

**Expense ratio (EXPRAT)** = operating expense divided by annual sales

**Administrative Expense Ratio (ADM RAT)** = administrative expense divided by annual sales

The agency conflict between managers and shareholders is to be reduced through higher ownership percentages, according to the agency theory. Agency conflicts might reduce by increasing managerial ownership in the firms (Jensen & Meckling, 1976), but if managerial ownership exceeds a limit, managerial retrenchment may occur.

Saudi Arabia is a developing country, and like many others, it has weak investor protection and the judicial efficiency is also quite low. Groups and families own most of the businesses and a large percentage of shares is held by the managers. The following hypothesis is tested based on the above discussion:

***H6: There is a negative relationship between profitability and agency costs.***

### ***5.2.6 Other Variables***

We have included variables that would probably affect the firm performance, in order to better understand performance. The selection of variables is determined by the research

literature and data availability. For firm performance, we have included the variables of firm size and leverage in our equation.

#### **5.2.6.1 Firm Size**

Regarding firm size, smaller firms have more room for bigger families, as they are likely to be closer to their inception and easier for families to support financially. Also, there may be an inverse relation of size with the level of information asymmetries between external and internal investors, as stated by Rajan and Zingales (1995). Firm size was negatively related with performance, as concluded by Klein et al. (2005). As stated by Kapopoulos and Lazaretou (2007), firm size calculated by the book value of total assets had an inverse relation to performance. Firm size was negatively related to performance, as discovered by Farooque et al. (2007). Firm size was positively and considerably linked with Tobin's Q, as concluded by Hu and Izumida (2008). Compared to smaller firms, larger firms display a higher Tobin's Q ratio, as indicated by King and Santor (2008).

Titman and Wessels (1988) state that there is a high correlation between the logarithm of total assets and the logarithm of sales (about 0.98), and therefore, either of them can be a substitute for the other. The firm size in this study is equal to the natural log of total assets.

**Firm Size**= Log of total asset adjusted by the effect of inflation.

In many previous studies, this measure has been used, such as Akhtar, (2005) and Brailsford et al. (2002), for Australian firms. The use of the logarithm is justified by the objective of mitigating heteroscedasticity problems (Aliani, 2012).

According to the above discussion, because firm size theories give different implications for the relationship between firm size and firm performance, this research assumes a positive relationship between profitability and firm size, as is shown in the following hypothesis:

***H7: There is a positive relationship between profitability and firm size.***

#### **5.2.6.2 Leverage**

In this study, we measure firm leverage by long-term debt to total assets (LTDTA). Regarding the measure, long-term debt to total assets is a ratio that indicates the

proportion of a company's debt to its total assets. It shows how much the company relies on debt to finance assets. The debt ratio gives users a quick measure of the amount of debt that the company has on its balance sheets compared to its assets. The higher the ratio, the greater the risk associated with the firm's operation. A low debt ratio indicates conservative financing with an opportunity to borrow in the future at no significant risk.

The relationship between leverage and performance in previous research has different results, as argued by Stiglitz (1985). A positive effect on firm performance may be expected as an outcome of monitoring performed by the lender. Conversely, the threat of bankruptcy may be increased by the greater level of debt, also limiting the firm's ability to increase new debt and consequently compelling firms to lose important investment opportunities (Harris & Raviv, 1990). Tong and Ning (2004) commented that a negative signal is given by highly leveraged firms that the firm may be unable to meet financial commitments in the future. Leverage was related negatively to firm valuation, as observed by Perrini et al. (2008). There was also a negative relationship between leverage and performance measures, as proposed by Hu and Izumida (2008). The explanation was that the agency cost of debt finance results from a conflict of interests between bondholders and shareholders. This is because bond holders do not have the upside risk of very good performance, so shareholders prefer higher leverage.

In classical models of capital structure, firms should borrow as much as possible because of the tax shield that is offered. However, this study applies to the KSA, where there is no effective tax shield as the companies pay zakat, which is a fixed of 2.5% of net profit. Most other studies of leverage are conflating the issues of tax and agency problems, so they cannot separate the effect of both simultaneously. A very useful contribution of this thesis is, therefore, that one can separate the effects of agency through the leverage that the firm chooses.

There are conflicting arguments and findings, so we do not really know the outcome in this study until the data are examined to see if there is a positive or negative relationship between leverage and firm performance.

**Leverage** = long-term debt divided by total assets (LTDTA)

According to the above discussion, because firm size theories give different implications for the relationship between leverage and firm performance, this research assumes a

negative relationship between profitability and leverage, as shown in the following hypothesis:

***H8: There is a negative relationship between profitability and leverage.***

### 5.3 Model Specification

The model aims to investigate the effect of ownership structure and board characteristics on firm performance. The general relationship to be investigated can be stated as follows: firm performance is a function of ownership structure, governance, mechanisms and control variables. This can be shown simply as the following:

*Performance ~ f (Ownership Concentration, Managerial Ownership, State Ownership, Asset Turnover, CEO Family, Board Size, CEO/Chair Non-Duality , Long-term Debt to Total Assets, Firm Size)*

Additionally, in this study we run the regression using the two-stage least squares (2SLS) method. This regression (2SLS) is used as a choice estimation method when there is a possible endogeneity problem between performance and independent variables.

In this study leverage is affected by profitability, but it is essential to realize that performance is affected by the capital structure decisions (Leverage). This issue is referred to as the endogeneity problem. To solve this problem, we perform a two-stage least squares (2SLS) analysis. From the name of model (two-stage least squares), we can notice that there are two stages: in the first stage, the endogenous and exogenous variables are found and determined, and a new variable is created using the instrument variables. The second stage involves regression of the original equation, with all of the variables replaced by the fitted values.

We use the following two-stage least squares (2SLS) regression specification:

**First stage:**

$$\text{leverage } (LTDTA)_{it} = \alpha_0 + \beta_1 ASSETSTANG_{it} + \beta_2 SALES_{it} + \beta_3 LIQUISITY_{it} + \beta_4 FCF_{it} + \varepsilon_{it}$$

**Second stage:**

$$\begin{aligned} \text{Performance}_{it} = & \alpha + \beta_1 OWNCON_{it} + \beta_2 MOWNER_{it} + \\ & \beta_3 STATOWN_{it} + \beta_4 ARTN_{it} + \beta_5 CEOFAMILY_{it} + \beta_6 BRSIZE_{it} + \beta_7 NonDuality_{it} + \beta_8 \text{Leverage } (LTDTA)_{it} + \\ & \beta_9 FSIZE_{it} + \beta_{10} INDUST_{it} + \varepsilon_{it} \end{aligned}$$

$$\begin{aligned}
& Performance_{it} \\
& = \alpha + \beta_1 OWNCON_{it} + \beta_2 MOWNER_{it} \\
& + \beta_3 STATOWN_{it} + \beta_4 EXPRAT_{it} + \beta_5 CEOFAMILY_{it} + \beta_6 BRSIZE_{it} + \beta_7 NonDuality_{it} + \beta_8 Leverage LTDTA_{it} \\
& + \beta_9 FSIZE_{it} + \beta_{10} INDUST_{it} + \varepsilon_{it}
\end{aligned}$$

$$\begin{aligned}
& Performance_{it} \\
& = \alpha + \beta_1 OWNCON_{it} + \beta_2 MOWNER_{it} \\
& + \beta_3 STATOWN_{it} + \beta_4 ADMRAT_{it} + \beta_5 CEOFAMILY_{it} + \beta_6 BRSIZE_{it} + \beta_7 NonDuality_{it} + \beta_8 Leverage LTDTA_{it} \\
& + \beta_9 FSIZE_{it} + \beta_{10} INDUST_{it} + \varepsilon_{it}
\end{aligned}$$

We use three alternative measures of agency costs. The first measure of agency costs is asset turnover (ARTN). We have also constructed additional proxies for agency costs in order to test the robustness of the results. The second measure of agency costs is the expense ratio (EXPRAT), and the third measure of agency costs is the administrative expense ratio (ADMRAT).

In addition to the explanatory variables described in this section, we also include industry dummy variables (industry dummies) which are defined with eleven industry groupings; please see the table below.

**Table 5.2 Definitions and measures for variables**

Symbol	Descriptions and Measures	Sources
<b>OWNCON</b>	The percentage holding of the largest (block of) shareholders where the total holding exceeds 10%. Large shareholdings are recorded for individuals where at least 5% of the shares are held	Thomson ONE Banker database
<b>MOWNER</b>	The percentage of total shares held by executive directors divided by the total number of shares	Thomson ONE Banker database
<b>STATOWN</b>	The percentage of total shares held by the government	Thomson ONE Banker database
<b>ARTN</b>	Annual sales to total assets (Asset Turnover)	Datastream database

<b>EXPRAT</b>	Operating expense scaled by annual sales	Datastream database
<b>ADMRAT</b>	Administrative expense scaled by annual sales	Datastream database
<b>CEO - FAMILY</b>	A dummy variable that takes the value of 1 if a family member holds the CEO position in the firm	Financial reports
<b>BRSIZE</b>	The total number of members on the board	Financial reports
<b>CEO/Chair Non-Duality</b>	A dummy variable that takes the value of 1 if the CEO and chair of the board have separate roles, otherwise 0	Financial reports
<b>LTDTA</b>	Long-term debt divided by total assets; it is used to investigate the effect of long-term debt on a firm's performance	Datastream database
<b>FSIZE</b>	Logarithm of total assets adjusted by inflation	Datastream database
<b>Tobin's Q</b>	The ratio of the book value of total assets minus the book value of equity, plus the market value of equity to the book value of assets	Datastream database
<b>ROA</b>	Ratio of the net income divided by total assets	Datastream database
<b>Family-Firm</b>	A dummy variable that takes the value of 1 if the company is a family firm, otherwise 0.	
<b>INDUST</b>	11 dummy variables are used: Sector 1 (Foods), Sector 2 (Building), Sector 3 (Cement), Sector 4 (Hotels and Tourism), Sector 5 (Investment), Sector 6 (Media), Sector 7 (Multi-investments), Sector 8 (Chemical and Petroleum), Sector 9 (Retail), Sector 10 (Energy), Sector 11 (Real Estate); the dummy variable takes the value 1 if the	Financial reports

firm is in that sector; otherwise, it takes the value 0.

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## 5.4 Data Sample and Techniques in Statistical Analysis

### 5.4.1 Data Sample

The entire Saudi Stock Exchange, i.e. all the registered Saudi companies, was considered as the sample size, excluding financial firms. The data were collected from secondary sources. The research sample is subjected to the following criteria:

- Secondary data were collected specifically from the Datastream database, the Thomson ONE Banker database, and the financial reports of the firms.
- The time period of 2006-2013, i.e. eight consecutive years, is selected for analysis. This time period is used because the beginning of 2006 brought economic and social reforms in Saudi Arabia. The execution of corporate governance mechanisms was commenced in 2006.
- Listed companies are classified into fifteen sectors according to the Saudi Stock Exchange industry classification codes.
- Banks, finance companies, and insurance companies are excluded from our list because they have different financial reports; their balance sheets have a significantly different structure from those of non-financial companies (Peasnell et al., 2000b; Chtourou et al., 2008).

**Table 5.3 Description of data selection process for study period**

Year	All Firms	Family Observation	Non-Family Observation
2006	51	23	28
2007	61	31	30
2008	76	39	37
2009	80	43	37
2010	80	43	37
2011	80	43	37
2012	98	54	44
2013	98	54	44



Final sample (Pooled)	<b>624</b>	<b>330</b>	<b>294</b>
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*Note:* Column 1 presents the six sample years between 2006 and 2013, column 2 presents the number of firms in each year, and columns 3 and 4 present the number of family and non-family observations in each year.

Table 5.3 presents a description of the study sample after excluding items such as banks, financial and insurance companies, missing data, and outliers. Overall, our sample consists of 98 firms and 624 firm-year observations: 330 family firm-year observations and 294 non-family firm-year observations.

#### ***5.4.2 The Analysis Process***

In analysing the data, correlation coefficients and variance inflation factors (VIF) were used to check for multicollinearity since several authors, including Hair et al. (1998) and Kennedy (2008) suggest that a VIF value of more than 10 points indicates the multicollinearity. The findings revealed no significant correlation between variables, and STATA software was used for this purpose.

#### ***Endogeneity***

In a regression equation (independent variables), the right-hand side determines the (dependent) variable. However, it could be true that the dependent variable tends to explain one or more explanatory variables. Those explanatory variables which are also explained by the dependent variable are called endogenous variables. Indeed, some variables (independent) are endogenous because they come at the cost of creating a bias in estimation and they correlate with the residuals. The OLS estimators would be biased if the model suffers from endogeneity. To deal with this issue, there are various methods. One of these methods is the two-stage least squares (2SLS). Two-stage least squares method has been used to estimate two simultaneous equations; it is essentially a least squares method, and, different from OLS estimators (Demsetz & Lehn, 1985).

Capital structure (leverage) is assumed to be endogenous to performance. It may be argued that a better performing company may likely reduce their leverage; thus it is free from any commitments or restrictions that might affect its value. In addition, a firm with better performance reduces the cost of equity capital. This can explain why performance affects capital structure. On the other hand, firms with high debt levels may face financial distress costs, which may affect the value of the firm.

This chapter highlights how corporate performance is affected by the corporate governance variables. The endogeneity problem usually arises when a correlation between one or more explanatory variables and the error term is found. As mentioned before, the two-stage least square (2SLS) can be used to solve this problem, when additional variables are needed and included with the equation (instrument variables). The instrument variables are correlated highly with the endogenous variable, but it does not correlate with the error term. In other words, the selected instrumental variables and the dependent variables must not have a correlation, but it is possible for the endogenous variable and instrumental variables to have a correlation. In this study, leverage is one of the explanatory variables (independent variable), and in the next chapter, leverage will be a variable representing the capital structure (dependent variable). Hence, the 2SLS method is used to solve this problem since there is an expectation that some explanatory variables have endogeneity.

In this chapter and the next chapter, a 2SLS regression was chosen to reduce the bias within the model as much as possible and solve the issue of endogeneity. More specifically, leverage is affected by profitability, but it is essential to realize that performance is affected by the capital structure decisions (leverage). This issue is referred to as the endogeneity problem. Hence, a correlation has been observed between the error term and the variable. So, to avoid this issue, a two-stage least square (2SLS) of random effects and panel estimation techniques are applied. The 2SLS regression results for ROA, Tobin's Q, and MR are present in tables 5.11, 5.12, and 5.13. The Hausman specification test will be applied as well to choose between the random and fixed effects models. The results of the Hausman test are reported in the regression tables below, and based on the test statistic results; it was insignificant, as shown in Table 5.11 and 5.12. Therefore, we cannot reject the null hypothesis of random effects. Consequently, we estimate the 2SLS random effects models. In this study, the endogenous variable is leverage and it is correlated with the instrumental variables of tangible assets, free cash flow, liquidity, and growth.

As mentioned previously, a two stage least squares (2SLS) regression is used to correct the correlation of the endogenous variable with the error term in the equation of the instrumental variables. From the name of model (two-stage least squares), we can notice that there are two stages: in the first stage, the determinant and endogenous and exogenous variables are found and a new variable is created using the instrument variables. The

second stage is the regression of the original equation, with all of the variables replaced by the fitted values.

Accordingly, the random effects model is used for controlling the dummy variables (family and non-family dummy). Also, answering the questions in this study required an understanding of the determinants of firm performance, and the advantage of a random effects model over the fixed effects model is that time constant independent variables are allowed and can be examined in a regression model and are not dropped out of the regression. Also, the random effects model can deal with heterogeneity.

### ***Choice between fixed or random effects***

Several guidelines regarding this problem have been proposed in the econometric literature (see Baltagi, 2001). The arguments for choosing the random effects model over the fixed effects model can be summarised as follows.

First, the random effects model is appropriate when the researcher has some time invariant observation. In fact, the within-group estimator, by failing to estimate time invariant effects, has been criticised for “wasting” useful information contained in the relations among individual means (Owusu-Gyapong, 1986).

Second, if individual effects are believed to be related to a large number of non-observable random causes, the random interpretation is clearly indicated. Third, the random effects model is more appropriate when N individuals are randomly drawn from a large population. Conversely, the fixed effects model is an appropriate specification if the sample is closed and exhaustive.

One important difference between fixed and random effects is in the kind of information sought from the analysis of the effects. Regarding fixed effects, the goal is generally to be able to make explicit comparisons of one level against another. For example, having the ability to compare the performance of “family firms” to the performance of “non-family firms” in an experiment is very appealing. If explicit comparison of the levels of a variable against one another is the objective of the research, the levels of the variable are usually treated as “fixed”. Conversely, if the aim of the research is more interested in the effects of other variables or treatment across the levels of a factor (e.g. the effect of

leverage on firm performance across samples from 15 firms), a blocking or controlling variable might be treated as a “random” effect.

The Hausman test statistic  $H$  is a measure of the difference between the two estimates of fixed effects and random effects:

$$H = (\beta_{RE} - \beta_{FE}) [\text{Var}(\beta_{RE}) - \text{Var}(\beta_{FE})]^{-1}(\beta_{RE} - \beta_{FE}),$$

where:

RE = Random effects

FE = Fixed effect

Under the null hypothesis,  $H$  is distributed chi-square with degrees of freedom equal to the number of regressors in the model. If Hausman test result (p value < 0, 05) is reject the null hypothesis and fixed effects prefer. If the Hausman test result is (p value > 0, 05), which shows no difference in the two models and fails to reject the null hypothesis, the random effects is preferred over the fixed effect.

With the help of the Hausman specification test (1978), it is possible to state which method, fixed or random effects model, must be used. It is believed by many econometricians that the random effects model is much more appropriate for use if a large population is present and individuals are drawn randomly. If a set of specific firms are present, the fixed effects model is considered much more appropriate.

An eight-year sample period was used to carry out the estimation of a random effects panel estimator. It is possible to test the variations and the cross-sectional units present in the individual units as time passes (Baum, 2006). The assumption lies that between various cross-sectional units the regression parameters are stable and similar over time.

Based on the discussions above, the statistical techniques applied in this part of the research are as follows:

- 1- **Descriptive statistics:** comprise the analysis of the overall mean scores, standard deviation, median, minimum, and maximum for each individual variable.

2- **Multivariate analysis:** Two-stage least squares regression (2SLS) and random-effects panel data.

3- Numerous sensitivity analyses are presented.

### **5.5 Descriptive Statistics**

This section will discuss the results obtained from the study conducted within 98 firms in the Saudi Stock Exchange (SSE), divided into two categories: 54 firms representing family businesses and 44 firms representing non-family firms. Also, this section will use the sample set to further show and discuss some descriptive statistics analyses for these variables.

The descriptive statistics include the mean, standard deviation, median, minimum, and maximum.

Table 5.4 Pooled descriptive statistics for all sample performance and independent variables (yearly) used in the study

Variable	2006		2007		2008		2009		2010		2011		2012		2013	
	Mean	St. Dev	Mean	St .Dev	Mean	St .Dev	Mean	St .Dev	Mean	St .Dev	Mean	St .Dev	Mean	St .Dev	Mean	St .Dev
<b>Independent</b>																
OWNCON	0.09	0.18	0.14	0.22	0.19	0.24	0.22	0.23	0.22	0.21	0.23	0.21	0.22	0.21	0.22	0.21
STATOWN	0.04	0.13	0.05	0.13	0.06	0.15	0.07	0.16	0.08	0.16	0.08	0.16	0.08	0.16	0.08	0.16
MANGOWN	0.03	0.09	0.04	0.10	0.04	0.10	0.05	0.11	0.03	0.06	0.03	0.06	0.02	0.06	0.02	0.06
BRSIZE	7.75	1.91	7.90	1.84	8.01	1.76	8.07	1.69	8.21	1.55	8.23	1.49	8.28	1.51	8.28	1.51
CEO-Family	0.14	0.35	0.16	0.37	0.17	0.38	0.18	0.38	0.18	0.38	0.16	0.37	0.16	0.36	0.16	0.36
Non/Dual	0.98	0.12	0.97	0.16	0.96	0.18	0.96	0.18	0.96	0.17	0.96	0.17	0.96	0.17	0.96	0.17
LTDTA	0.05	0.09	0.09	0.14	0.10	0.14	0.12	0.15	0.10	0.15	0.10	0.15	0.12	0.15	0.12	0.15
FSIZE	10.57	1.38	10.27	1.31	9.37	1.20	8.95	1.12	8.54	1.05	8.08	0.99	8.25	0.82	7.95	0.86
ARTN	0.58	0.50	0.58	0.49	0.65	0.65	0.58	0.47	0.58	0.47	0.61	0.54	0.62	0.55	0.60	0.52
EXPRAT	0.80	0.25	0.77	0.25	0.82	0.35	0.80	0.25	0.79	0.26	0.82	0.28	0.86	0.30	0.84	0.26
ADMEXP	0.11	0.10	0.11	0.09	0.12	0.12	0.12	0.14	0.21	0.92	0.12	0.10	0.11	0.09	0.12	0.12
<b>Dependent</b>																
ROA	0.07	0.09	0.08	0.08	0.07	0.09	0.07	0.10	0.07	0.09	0.06	0.12	0.07	0.12	0.07	0.08
Tobin's Q	0.57	0.75	0.47	0.50	0.42	0.25	0.42	0.25	0.43	0.26	0.41	0.25	0.41	0.25	0.39	0.25
MR	-0.54	0.19	0.32	0.38	-0.49	0.26	0.36	0.38	0.00	0.22	0.22	0.40	0.25	0.40	0.17	0.22

All variables are measured at the end of each year (2006-2013).

**Table 5.5 Descriptive statistics for all firms**

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>Dependent Variables</b>					
ROA	0.07	0.1	0.062	-0.67	0.62
Tobin's Q	0.43	0.36	0.377	0	4.08
MR	0.06	0.45	0.074	-0.84	2.23
<b>Independent Variables</b>					
OWNCON	0.19	0.22	0.12	0	0.95
STATOWN	0.07	0.15		0	0.75
MANGOWN	0.04	0.07	0.003	0	0.47
BRSIZE	8.10	1.65	8	4	13
CEO-Family	0.16	0.37	0	0	1
Non/Dual	0.97	0.17	1	0	1
LTDTA	0.10	0.14	0.041	0	0.66
FSIZE	8.95	1.42	8.808	5.46	12.74
ARTN	0.60	0.52	0.466	0.008	4.81
EXPRAT	0.81	0.28	0.864	0.01	3.20
ADMEXP	0.13	0.34	0.088	0.003	8.96

Return on assets: (ROA); Market Return: (MR); Ownership Concentration: (OWNCON); State Ownership: (STATOWN); Managerial Ownership: (MANGOWN); Board Size (BRSIZE); Long-term Debt to Total Assets: (LTDTA); Firm Size: (FSIZE); Asset Turnover: (ARTN); Expense Ratio: (EXPRAT); Administrative Expenses: (ADMEXP).

**Table: 5.6 Descriptive statistics for family firms**

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>Dependent Variables</b>					
ROA	0.085	0.092	0.078	-0.604	0.57
Tobin's Q	0.49	0.40	0.441	0	4.08
MR	0.053	0.394	0.070	-0.807	1.85
<b>Independent Variables</b>					
OWNCON	0.20	0.21	0.193	0	0.80
STATOWN	0.02	0.05	0	0	0.23
MANGOWN	0.05	0.08	0.001	0	0.47
BRSIZE	8.22	1.78	8	4	13
CEO-Family	0.28	0.45	0	0	1
Non/Dual	0.96	0.19	1	0	1
LTDTA	0.10	0.15	0.045	0	0.66
FSIZE	9.11	1.39	8.841	5.46	12.74
ARTN	0.68	0.55	0.54	0.01	3.05
EXPRAT	0.79	0.25	0.861	0.01	2.05
ADMEXP	0.11	0.09	0.100	0.007	1.27

Return on assets: (ROA); Market Return: (MR); Ownership Concentration: (OWNCON); State Ownership: (STATOWN); Managerial Ownership: (MANGOWN); Board Size (BRSIZE); Long-term Debt to Total Assets:

(LTDTA); Firm Size: (FSIZE); Asset Turnover: (ARTN); Expense Ratio: (EXPRAT); Administrative Expenses: (ADMEXP).

**Table 5.7 Descriptive statistics for non-family firms**

Variable	Mean	Std. Dev.	Median	Min	Max
<b>Dependent Variables</b>					
ROA	0.06	0.108	0.042	-0.678	0.628
Tobin's Q	0.37	0.30	0.291	0.02	2.69
MR	0.06	0.51	0.081	-0.84	2.23
<b>Independent Variables</b>					
OWNCON	0.16	0.18	0	0	0.75
STATOWN	0.13	0.21		0	0.75
MANGOWN	0.02	0.05	0.003	0	0.38
BRSIZE	7.96	1.46	8	4	12
Non/Dual	0.98	0.13	1	0	1
LTDTA	0.11	0.13	0.051	0	0.59
FSIZE	8.85	1.46	8.693	5.68	12.38
ARTN	0.503	0.46	0.408	0.008	4.81
EXPRAT	0.84	0.31	0.874	0.16	3.20
ADMEXP	0.15	0.51	0.073	0.003	8.96

Return on assets: (ROA); Market Return: (MR); Ownership Concentration: (OWNCON); State Ownership: (STATOWN); Managerial Ownership: (MANGOWN); Board Size (BRSIZE); Long-term Debt to Total Assets: (LTDTA); Firm Size: (FSIZE); Asset Turnover: (ARTN); Expense Ratio: (EXPRAT); Administrative Expenses: (ADMEXP).

Firm size is represented by the logarithm of total assets and then adjusted by the effect of inflation. We can see slight differences in the means between family firms (FF) and non-family firms (NFF), with 9.11 and 8.85 respectively; and both have low standard deviations of 1.39 and 1.46, respectively. It is clear from the figures for total assets, where FF is greater than NFF that the sizes of the companies in general increased through the study period; this means that Saudi companies are growing gradually.

Contrary to the findings for size, it seems that family firms are more profitable than non-family firms, on average, with an ROA of 8.5% for FF and 6% for NFF. However, the mean of Tobin's Q for NFF at 0.37 is lower than that of 0.49 for FF. Also, we can see that in both family and non-family firms, the Tobin's Q value is less than 1, indicating that the market did not create a good value for stockholders. This finding reflects the fact that the profitability measure is very sensitive to size variables. Family firms have a higher percentage of mean ownership concentration, 20%, and non-family firms have only 16%; that is logically acceptable in FF because most of the firms' shares are owned by one or two families. Also, we can see that in our sample, the mean of managerial ownership in



family firms are 5%, which is higher than non-family firms, where it is only 2%. It could be that there are relationships between the percentage of ownership concentration and managerial ownership because in the FF, the family members want the decisions to be in a few hands, and that will lead to good results for the family. Moreover, the mean of STATOWN in NFF is higher than FF, 13% and 2% respectively.

Regarding the board size, we see in tables 5.6 and 5.7 slight differences in the mean between family and non-family firms, 8.22 and 7.96 respectively. Jensen (1993) said that a board size should be between seven or eight members, because boards with a small number of people are more likely to agree on a particular outcome. Many studies suggest that the average board size is eight, such as Abdullah (2001) and Zainal Abidin et al. (2009). One of the benefits of a large board size is that skills and ideas can be shared among them. The Saudi Arabian board size mean is larger than that of Malaysian firms. For instance, the mean of the board size in Malaysia is five (Abdul Rahaman & Ali, 2006); also, it is smaller than that of UK and US firms, where the size is 9 and 11 respectively (Bhagat & Black, 2002; Habbash, 2010). Based on the Code of Corporate Governance in Saudi Arabia, the board size number in each firm should not be less than 3 and no more than 11.

Regarding non-duality, both family and non-family firms have a high mean percentage, 96% and 98% respectively, which means that Saudi companies separate the position of the chairman of the board of directors from the CEO, and only about 3% of companies have duality. The Saudi Corporate Governance Code prohibits combining the position of the chairman of the board of directors with any other executive position in the company, and this has been activated 2010.

The result also shows a difference in the means of leverage (LTDTA) between FF and NFF. In this study, we measure leverage by the long term debt to total assets proxy. The result shows that NFF has a higher mean leverage (LTDTA) than FF, 11% and 10% respectively. Hence, we expect lower debt levels in FF to avoid debt default risk, and in NFF we expect high levels of leverage to discipline managers to improve performance by not spending excessively on personal consumption, as argued by Jensen (1986).

### ***5.5.1 Correlation Matrices***

The following section establishes the correlation between the corporate governance and performance variables through the Pearson and Spearman tests (See Tables 5.8, 5.9 and 5.10). The dependent and independent variable relationships are tested through the correlation coefficient analysis (Rahman & Ali, 2006). For family firms, the correlation coefficients are stated in Table 5.9 and the non-family firms are in Table 5.10.

**Table 5.8 Pearson correlation coefficients (all firms)**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1) BRSIZE	1													
2)MANGOWN	0.059 0.109	1												
3)Non-Dual	<b>0.088*</b> 0.019	<b>-0.159*</b> 0.000	1											
4) CEO-Family	<b>-0.117*</b> 0.002	<b>0.378*</b> 0.000	<b>-0.256*</b> 0.000	1										
5) OWNCON	0.024 0.507	<b>0.298*</b> 0.000	-0.030 0.420	<b>0.136*</b> 0.000	1									
6) STATOWN	<b>0.108*</b> 0.003	-0.015 0.674	<b>0.086*</b> 0.022	<b>-0.220*</b> 0.000	<b>0.499*</b> 0.000	1								
7) LTDTA	0.058 0.120	-0.056 0.125	<b>0.083*</b> 0.031	<b>-0.147*</b> 0.000	0.035 0.335	<b>0.157*</b> 0.000	1							
8) FSIZE	0.012 0.734	-0.016 0.646	-0.007 0.854	-0.055 0.144	-0.008 0.806	0.011 0.763	<b>-0.112*</b> 0.002	1						
9) EXPRAT	<b>-0.278*</b> 0.000	<b>-0.074*</b> 0.046	<b>-0.132*</b> 0.000	0.019 0.612	-0.039 0.293	<b>-0.136*</b> 0.000	0.016 0.661	<b>-0.211*</b> 0.000	1					
10) ARTN	<b>-0.180*</b> 0.000	<b>0.115*</b> 0.002	<b>-0.177*</b> 0.000	<b>0.364*</b> 0.000	0.035 0.349	-0.182 0.000	<b>-0.185*</b> 0.000	<b>-0.106*</b> 0.004	<b>0.183*</b> 0.000	1				
11) ADMEXP	-0.027 0.478	-0.007 0.844	-0.019 0.611	0.013 0.735	0.020 0.578	0.034 0.353	-0.066 0.082	0.021 0.559	<b>0.431*</b> 0.000	<b>-0.181*</b> 0.000	1			
12) ROA	<b>0.127*</b> 0.000	<b>0.134*</b> 0.000	<b>0.095*</b> 0.013	<b>0.193*</b> 0.000	<b>0.098*</b> 0.007	0.058 0.115	<b>-0.136*</b> 0.000	<b>0.105*</b> 0.004	<b>-0.367*</b> 0.000	<b>0.286*</b> 0.000	<b>-0.145*</b> 0.000	1		
13) Tobin's Q	-0.053 0.162	-0.000 0.984	0.040 0.299	0.048 0.207	0.030 0.416	<b>-0.089*</b> 0.017	<b>0.250*</b> 0.000	0.036 0.329	<b>0.081*</b> 0.033	<b>0.204*</b> 0.000	<b>-0.101*</b> 0.008	0.028 0.464	1	
14) MR	0.066 0.082	-0.005 0.885	0.008 0.827	0.027 0.486	0.038 0.311	0.042 0.273	0.090* 0.021	<b>-0.239*</b> 0.000	-0.034 0.380	0.054 0.167	-0.001 0.961	-0.002 0.954	0.008 0.820	1

\*. Correlation is significant at the 0.05 level (2-tailed). Bold figures in the table are significant at  $p < 0.05$ .

**Table 5.9 Pearson correlation coefficients (family firms)**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1) BRSIZE	1													
2)MANGOWN	0.058 0.243	1												
3)Non-Dual	<b>0.109*</b> 0.343	<b>-0.208*</b> 0.000	1											
4) CEO-Family	<b>-0.231*</b> 0.000	<b>0.337*</b> 0.000	<b>-0.317*</b> 0.000	1										
5) OWNCON	-0.075 0.129	<b>0.336*</b> 0.000	-0.085 0.097	0.085 0.096	1									
6) STATOWN	<b>0.373*</b> 0.000	0.054 0.257	-0.089 0.083	<b>-0.280*</b> 0.000	-0.070 0.140	1								
7) LTDTA	<b>0.139*</b> 0.006	-0.007 0.886	0.092 0.079	<b>-0.173*</b> 0.000	0.007 0.881	-0.028 0.567	1							
8) FSIZE	-0.013 0.793	<b>-0.134*</b> 0.005	-0.046 0.373	<b>-0.165*</b> 0.001	<b>-0.154*</b> 0.001	-0.013 0.777	-0.023 0.645	1						
9) EXPRAT	<b>-0.2785*</b> 0.000	-0.006 0.898	<b>-0.108*</b> 0.039	0.116 0.027	<b>0.188*</b> 0.000	<b>-0.311*</b> 0.000	0.083 0.101	<b>-0.192*</b> 0.000	1					
10) ARTN	<b>-0.179*</b> 0.000	<b>0.146*</b> 0.003	<b>-0.274*</b> 0.000	<b>0.455*</b> 0.000	0.088 0.074	<b>-0.223*</b> 0.000	<b>-0.159*</b> 0.001	-0.085 0.089	<b>0.301*</b> 0.000	1				
11) ADMEXP	-0.083 0.103	0.075 0.133	-0.102 0.053	<b>0.210*</b> 0.000	<b>0.021*</b> 0.014	<b>-0.105*</b> 0.034	-0.119 0.019	0.027 0.583	<b>0.242*</b> 0.000	<b>-0.126*</b> 0.013	1			
12) ROA	<b>0.108*</b> 0.032	<b>0.193*</b> 0.000	0.084 0.107	<b>0.209*</b> 0.000	0.002 0.966	0.097 0.052	<b>-0.184*</b> 0.000	0.076 0.126	<b>-0.244*</b> 0.000	<b>0.376*</b> 0.000	<b>-0.211*</b> 0.000	1		
13) Tobin's Q	-0.076 0.140	-0.033 0.514	0.059 0.266	0.008 0.869	0.021 0.668	-0.053 0.300	0.038 0.460	<b>-0.122*</b> 0.015	<b>0.144*</b> 0.005	<b>0.204*</b> 0.000	-0.072 0.170	0.043 0.404	1	
14) MR	0.050 0.334	0.033 0.527	-0.004 0.930	0.088 0.098	0.048 0.354	0.055 0.299	0.072 0.179	<b>-0.237*</b> 0.000	-0.015 0.768	<b>0.115*</b> 0.032	0.015 0.774	<b>0.115*</b> 0.030	-0.037 0.483	1

\*. Correlation is significant at the 0.05 level (2-tailed). Bold figures in the table are significant at  $p < 0.05$ .

**Table 5.10 Pearson correlation coefficients (non-family firms)**

	1	2	3	4	5	6	7	8	9	10	11	12	13
1) BRSIZE	1												
2) MANGOWN	0.010 0.846	1											
3) Non-Dual	0.064 0.249	0.044 0.431	1										
4) OWNCON	<b>0.126*</b> 0.021	<b>0.137*</b> 0.009	0.098 0.077	1									
5) STATOWN	<b>0.116*</b> 0.034	<b>0.121*</b> 0.023	0.093 0.094	<b>0.099*</b> <b>0.000</b>	1								
6) LTDTA	0.026 0.645	-0.061 0.274	0.073 0.203	0.127 0.021	<b>0.137*</b> 0.013	1							
7) FSIZE	0.026 0.639	<b>0.155*</b> 0.004	0.075 0.178	0.098 0.070	0.098 0.071	<b>-0.152*</b> 0.006	1						
8) EXPRAT	<b>-0.288*</b> 0.000	<b>-0.177*</b> 0.001	<b>-0.191*</b> 0.000	<b>-0.235*</b> 0.000	<b>-0.221*</b> 0.000	-0.043 0.449	<b>-0.215*</b> 0.000	1					
9) ARTN	<b>-0.215*</b> 0.000	-0.104 0.067	0.052 0.375	<b>-0.144*</b> 0.011	<b>-0.142*</b> 0.012	<b>-0.197*</b> 0.000	<b>-0.195*</b> 0.000	0.084 0.143	1				
10) ADMEXP	-0.018 0.752	-0.028 0.614	-0.008 0.879	0.020 0.713	0.023 0.673	-0.072 0.213	0.035 0.531	<b>0.583*</b> 0.000	<b>-0.247*</b> 0.000	1			
11) ROA	<b>0.136*</b> 0.014	-0.031 0.570	<b>0.138*</b> 0.015	<b>0.145*</b> 0.008	<b>0.142*</b> 0.009	-0.080 0.152	0.106 0.05	<b>-0.461*</b> 0.000	<b>0.149*</b> 0.000	<b>-0.156*</b> 0.006	1		
12) Tobin's Q	-0.060 0.279	-0.042 0.441	0.032 0.566	-0.057 0.299	-0.036 0.512	<b>0.548*</b> 0.000	<b>-0.132*</b> 0.016	0.047 0.406	<b>0.144*</b> 0.011	<b>-0.149*</b> 0.008	-0.035 0.529	1	
13) MR	0.092 0.098	-0.060 0.283	0.021 0.700	0.042 0.447	0.037 0.507	0.098 0.084	<b>-0.242*</b> 0.000	-0.047 0.405	-0.004 0.941	-0.014 0.797	-0.845 0.136	0.064 0.248	1

\*Correlation is significant at the 0.05 level (2-tailed). Bold figures in the table are significant at  $p < 0.05$ .

Using the above analysis, tables 5.9 and 5.10 show the correlation between variables in family and non-family firms. We can see that there is a negative relationship between leverage and return on assets (ROA), which measures how efficiently a firm utilizes its current recorded assets, in family and non-family firms. The correlation value is -0.184 and -0.080 respectively, which means that a negative relationship exists between performance and leverage, which is expected. Conversely, there are significant positive relationships between leverage and Tobin's Q in non-family firms, with a value of 0.548. These correlation values therefore reveal the presence of an impact of capital structure on firm performance.

We can see clearly that in non-family firms there is a positive correlation between concentrated ownership and ROA at the 0.05 level by 0.145. This result is related to Ke and Isaac (2007), who argued that one of the most effective ways of maximizing value in firms was through concentrated ownership of the firm's shares.

However, firm size (FSIZE) was negatively and significantly correlated with firm performance, (Tobin's Q or MR), in both family and non-family firms, with correlations of -0.122 and -0.237 respectively in family firms and -0.132 and -0.242 respectively in non-family firms.

Lastly, Tables 5.9 and 5.10 state the correlation matrix for family and non-family firms where no multi-collinearity is observed as all variables do not correlate above 0.8 or 0.9. A number of previous studies such as Abdul Rahman (2006) suggested that 0.8 was threshold at which the regression analysis would be affected by the multicollinearity issues.

## **5.6 Multivariate Analysis to Determine Performance**

This study seeks to determine the performance among Saudi-listed firms. Moreover, this module provides empirical evidence on the relationship between firm performance measured by return on assets (ROA), Tobin's Q and market return as dependent variables, and the corporate governance variables of ownership structure, board structure, agency costs, leverage, and firm size, when comparing family and non-family firms.

Before discussing the regression results, some specification tests such as the variance inflation factor (VIF) are used to test for multi-collinearity problems. According to the results, the mean VIF value is 1.23 since the VIF for all variables ranged between 1.05-1.50. VIF indicated that

there was no problem with collinearity, and the results for this VIF are found in the appendix table (A5.1).

### 5.6.1 Findings for Regression Models on Determining Performance

The following table shows the regression results for the relationship between firm performance measured by the return on assets (ROA) and Tobin's Q as a dependent variable and the corporate governance variables comparing family and non-family firms.

In all cases, the results are jointly significant at a 1% level of significance in the methods, as shown in the probability of F=0.000 in random effects for both family and non-family firms. Note that the R-squared for the first table are in the ranges of 45% to 17% for family and non-family firms respectively. For the second table, the R-squared is in the range of, 22% and 14%, for family and non-family firms respectively.

Tests of whether random effects are appropriate were conducted and both models were found to have significant Wald values. We therefore conclude that random effects are appropriate. Additionally, it is recommended to test the random effects against the fixed effects. This can be done via the Hausman test. As shown below in tables 5.11 and 5.12. As a result, we fail to reject the null of random effects, so the random effects models are estimated.

**Table 5.11 Two-stage least square (2SLS) regression results for performance measured by return on Assets**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>ROA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	0.003	0.919	-0.018	0.658	0.002	0.991
<b>STATOWN</b>	0.037	0.438	0.025	0.795	0.004	0.983
<b>MANGOWN</b>	-0.006	0.885	0.083	0.180	-0.058	0.570
<b>BRSIZE</b>	0.007	<b>0.094*</b>	0.011	<b>0.044**</b>	0.007	0.472
<b>Non / Dual</b>	0.098	<b>0.018**</b>	0.129	<b>0.009***</b>	0.076	<b>0.023**</b>
<b>CEO - Family</b>	0.035	0.070*	0.014	0.435		
<b>LTDTA (FIT)</b>	-0.109	0.766	-0.113	0.529	0.519	0.382
<b>FSIZE</b>	0.008	0.196	0.013	<b>0.000***</b>	0.006	0.531
<b>ARTN</b>	0.102	<b>0.000***</b>	0.095	<b>0.000***</b>	0.122	<b>0.079*</b>
<b>_cons</b>	-0.207	0.062	-0.250	0.003	-0.269	0.212
<b>R-squared</b>		0.279		0.455		0.178
<b>Hausman Test</b>		chi2(8)= 3.83 P-value = 0.872		chi2(8)= 7.07 P-value = 0.529		chi2(8)= 1.81 P-value = 0.969

<b>Prob &gt; F,chi2</b>		0.000	0.000	0.000
<b>LR test</b>	LR Ch2	18.65		
	Prob > chi2	0.000		
<b>Industry dummy</b>		Yes	Yes	Yes
<b>Observation</b>		547	293	254

\* Significant at 10%; \*\* significant at 5%; \*\*\*significant at 1%, regressions with robust standard errors

**Table 5.12 Two-stage least squares (2SLS) regression results for performance measured by Tobin's Q**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>Tobin's Q</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	-0.322	0.349	-0.517	0.246	-0.987	<b>0.022**</b>
<b>STATOWN</b>	0.391	0.209	0.650	0.267	1.325	<b>0.020**</b>
<b>MANGOWN</b>	0.370	0.213	0.308	0.227	0.484	0.401
<b>BRSIZE</b>	-0.017	0.114	-0.027	0.173	-0.006	0.738
<b>Non / Dual</b>	0.053	0.672	0.067	0.732	-0.073	0.270
<b>CEO - Family</b>	0.009	0.888	-0.088	0.380		
<b>LTDTA (FIT)</b>	-0.044	0.976	1.201	0.391	-1.108	0.444
<b>FSIZE</b>	0.018	0.396	0.049	0.174	-0.016	0.524
<b>ARTN</b>	0.104	0.193	0.118	<b>0.102*</b>	0.042	0.756
<b>_cons</b>	-0.133	0.650	0.056	0.859	0.547	0.184
<b>R-squared</b>	0.143		0.224		0.149	
<b>Hausman Test</b>	chi2(8)= 13.73 P-value = 0.089		chi2(8)= 3.75 P-value = 0.879		chi2(8)= 0.76 P-value = 0.997	
<b>Prob &gt; F,chi2</b>		0.000	0.000		0.000	
<b>LR test</b>	LR Ch2	110.72				
	Prob > chi2	0.000				
<b>Industry dummy</b>		Yes	Yes	Yes		
<b>Observation</b>		535	280	255		

\* Significant at 10%; \*\* significant at 5%; \*\*\*significant at 1%: regressions with robust standard errors

This study has presented an analysis of the corporate governance mechanisms to see their influence on firm performance. Focusing on the variables of family and non-family firms, the study uses ROA and Tobin's Q as performance measures to evaluate the firm performance; the results are tabulated in Table 5.11 and Table 5.12 respectively.



The likelihood ratio (LR) test that is reported at the bottom of tables 5.11 and 5.12 examines whether the observations on family and non-family firms might be pooled, by comparing the log likelihoods of the two models to see the fit of one model to the fit of the other. Additionally, it tests whether this difference is statistically significant. If the difference is statistically significant, the less restrictive model (the one with more variables) is assumed to fit the data significantly better than the more restrictive model. For both the return on assets and Tobin's Q, we reject the null hypothesis that model one and model two are equivalent and proceed to interpret the results from model two.

The LR test statistic is calculated as follows:

$$H_0: \Psi_i = \Phi_i$$

$$H_1: \text{At least one } \Psi_i \neq \Phi_i$$

$$\chi^2 = 2 * (\text{LR (model 2)} - \text{LR (model 1)})$$

This statistic is distributed chi-squared with degrees of freedom equal to the difference in the number of degrees of freedom between the two models. We see that the test statistic in our test gives us the chi-squared values of (18.65) and (110.72). Also, the associated p-value is very low (less than the test statistic), with eight degrees of freedom at 0.05, which is significant; this means Model Two is preferred.

### **5.6.1.1 Board Structure and Corporate Performance**

In this sub-section, we examine the relationship between board structure (board size, non-duality, and CEO-family) and corporate performance. The results shown in Table 5.11 and 5.12 indicate that in family firms, the board size has a positive significant regression coefficient, a result which supports the fifth hypotheses that there is a relationship between board structure (board size) and firm performance. This positive relationship indicates that when the board size increases, the performance of the family firms will increase. This is similar to previous studies such as Sunday (2008) and Shakir (2008). Conversely, however, when performance is measured by Tobin's Q, the results show an insignificant relationship between board size and firm performance. Based on this finding, the fifth hypothesis for family firms, which stated that there is a positive relationship between board size and firm performance, is rejected.

Regarding the non-family firms, the result also shows an insignificant relationship between board size and firm performance as measured by the ROA or Tobin's Q. This is similar to some previous studies such Topak (2011), who studied the listed companies in Turkey and found no relationship between board size and performance.

Further, there is a positive and significant relationship between non-duality and ROA in the family firms at the 0.001 level of significance and 0.129 coefficients; firms in which the CEO and chairman roles are separated display higher ROA ratios. This result is consistent with the view that the board's monitoring is unlikely to be as effective if the same person holds the two top positions. The results further suggest that the CEO can additionally exert a positive effect on firm performance by holding board membership. Firms with CEO board members are likely to have better or more efficient governance mechanisms, which should contribute to enhancing performance. This result suggests that if the CEO is a board member, he or she may facilitate and participate in the decision making process rather than dominate the decisions of the board, as may be the case when he/she is CEO and chairman simultaneously. This result as well supports the fifth hypothesis, which stated that there is a positive relationship between board structure (non-duality) and firm performance. Based on this finding, the fifth hypothesis is rejected.

Previous studies support this result: the role of board chairperson (COB) and the CEO should be separated from each other to reduce the agency problems, as argued by Fama and Jensen (1983). Similarly, companies with separate roles produced better accounting performance than those with dual CEO roles, as concluded by Rahman and Haniffa (2005) in research on Malaysian firms. Furthermore, in Saudi Arabia, as in many other Arab and developing countries, management and the board of directors in family firms are frequently controlled by members of the families. Therefore, the board structures in the family firms are expected to have an impact on corporate performance.

Regarding non-family firms, the results show a significant positive relationship between non-duality and firm performance (as measured by the ROA). Based on this finding, hypothesis five for non-family firms, which stated that there is a relationship between non-duality and firm performance ROA is rejected. As far as we know, only Elsayed (2007) has carried out research in an Arab nation (Egypt) and found that CEO duality had no influence on corporate performance.

However, two main differences were observed between ROA and Tobin's Q value results. The first difference concerns the relationship between board size and performance in family firms. The results give evidence of a positive relationship between board size and accounting performance in family firms. However, the result in this relationship between board size and accounting performance reflects the view that a larger board may provide for more efficient monitoring of the current activities of the firm.

Finally, regarding CEO-family, we see the results for performance of family-controlled firms in tables 5.11 and 5.12, showing that the family firm dummy, which holds a value of 1 if manager position/CEO is a family member, has an insignificant positive relationship with ROA and Tobin's Q.

#### **5.6.1.2 Ownership Structure and Corporate Performance**

We next turn our attention to ownership variables and examine their effect on corporate performance.

##### ***Ownership concentration***

In the results from tables 5.11 and 5.12, the coefficient on the ownership concentration in family firms variable is always negative and shows an insignificant effect on performance measured by ROA or Tobin's Q. The result is consistent with the evidence of Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) that ownership concentration has no systematic relationship with firm value. Based on this finding, Hypothesis 2, which stated that there is a positive relationship between ownership concentration and firm performance, is not supported.

Additionally, the finding for ownership concentration and Tobin's Q in non-family firms is a significant negative relationship between ownership concentration and Tobin's Q, which means that as ownership concentration increases in non-family firms. The value of Saudi firms decreases, as shown in Table 5.12. We expect in the hypothesis to find that firm performance has a positive linear relation with ownership concentration. However, the finding is not as expected: the result here shows negative relationship, and the coefficient of -0.987 can be interpreted to mean that an increase of 1% in ownership concentration will lead to a 2.2% decrease in Tobin's Q. In other words, firms with an ownership concentration level 1% higher

will have a decrease of 2.2% in Tobin's Q. However, the corresponding relationship is not significant when firm performance is measured by ROA.

The finding in this study is also consistent with that of Haniffa and Hudaib (2006), in their study on the negative relationship between the ownership of the top five shareholders and firm performance in Malaysia; it is also consistent with Davies et al. (2005), who indicate a negative correlation between block holders and corporate value for UK companies. In conclusion, Hypothesis 2 is partially rejected in this study with Tobin's Q in non-family firms.

One of the reasons for this negative relationship could be that the increase in ownership concentration negatively affects Tobin's Q as large shareholders would reduce the self-realization of managers who consequently get discouraged. Another argument for the negative relationship is the cost of capital. Fama and Jensen (1983a) argue that firms with ownership concentration have lower liquidity and because this ownership holds most of firm shares, there are fewer shares available for trade in the market.

### ***Managerial Ownership***

Regarding managerial ownership, we found an insignificant relationship between managerial ownership and profitability measured by Tobin's Q or ROA, in family or non-family firms. Based on this finding, Hypothesis 3, which stated that there is a positive relationship between managerial ownership and firm performance, is not supported.

In some earlier studies, such as Morck et al. (1988) and Harris and Raviv (1988), it was implied that the more shares the managers hold, the greater entrenchment is, along with their ability expropriate the firm's resources for their own benefits.

In the case of agency costs managerial ownership in the firm should behave differently in positive effect. That because that will reduce the agency costs, which leads to high performance. Also, following the agency theory of Jensen and Meckling (1976), agency costs should be lower in firms managed by the owner, and that will lead to an increase firm performance. Managers who hold shares in the firms in KSA are mostly family shareholders or they are related parties of the family shareholders. These managers should behave differently from those managers who are also holding shares in the non-family firms. In non-family firms, where the managers come from different backgrounds and are not related to one another, due

to the lack of cohesiveness, it is more likely that they will pursue their personal interests relatively more than the managers in family firms. Furthermore, based on Saudi Arabia's inherent culture, relationships between family members are positively related to performance. Family members in Saudi Arabia behave in a collectivist manner, while the cultures in some other countries such as the United States and the United Kingdom are more individualistic (Hofstede, 2001).

### ***State Ownership***

In the results from tables 5.11 and 5.12, the coefficient on the state ownership in family firms variable is always positive and shows an insignificant effect on performance measured by ROA or Tobin's Q. The result is consistent with the evidence of Wang (2005) and Sun and Tong, (2003), who state that state ownership has no systematic relationship with firm performance. Based on this finding, Hypothesis 4, which stated that there is a negative relationship between state ownership and firm performance, is not supported.

On the other hand, the finding for state ownership and Tobin's Q in non-family firms is a significant positive relationship between state ownership and Tobin's Q, which means that as state ownership increases in non-family firms, the value of Saudi firms increase, as shown in Table 5.12. We expect in the hypothesis to find that a firm's value has a negative relationship with state ownership. However, the finding is not as expected: the result here shows a positive relationship, and the coefficient of 1.325 can be interpreted to mean that an increase of 1% in the state ownership will lead to a 2% increase in the Tobin's Q. In other words, firms with government ownership levels 1% higher will have an increase of 2% in Tobin's Q.

This result is consistent with some previous studies such as Tian and Estrin (2005), who found positive relationship with performance, and Chen, et al. (2006) study of the Chinese market; they found that government ownership is positively related to firm performance. In the case of agency costs, firms with high percentage of state ownership should faced lower agency costs, also in some cases may help to monitor management behaviour.

### **5.6.1.3 Agency Costs and Corporate Performance**

In this part of the analysis, we examine the relationship between the agency cost variables and firm value. The agency costs are measured by three variables: annual sales to total assets (asset turnover, ASTN), which shows how effectively management deploys the firm's assets. This variable is used in the main regression. The second variable is the expense ratio (EXPRAT), which measures how successfully the management controls operating costs. The third variable is administrative expenses (ADMEXP), which shows the expenses that an organization incurs that are not directly tied to a specific function such as manufacturing/production or sales. The second and third variables will be used later in robustness test.

The results here show that agency costs in family and non-family firms indeed have a positive (negative) and significant impact on ROA in KSA. This is seen in the positive and statistically significant coefficient of ARTN, and that means if agency costs decrease, the firm performance will increase. In this case, there is a relationship between agency costs and firm performance, supporting Hypothesis 6. The coefficient of 0.095 of family firms in Table 5.11 can be interpreted to mean that a rise of 1 unit on the ration of assets turnover (decline in agency costs) results in a 9.5 % increase in the ROA. A similar relationship is found in family firms when firm performance is measured by Tobin's Q.

In terms of non-family firms, the result also indicates that a high level of asset turnover ratio contributes to reducing agency costs. As shown in the previous Table 5.11. Agency costs in non-family firms have a positive (negative) and significant impact on ROA in KSA. This is not surprising since managers play a significant role in decision-making, which can effectively manage the assets in these firms, leading to high performance and resulting in the mitigation of agency cost. This finding is consistent with Gul et al. (2012) and Mustapha and Ahmed (2011).

### **5.6.1.4 Other Variables and Corporate Performance**

#### ***Firm Size***

There is evidence of a significant positive relationship between firm size and performance (ROA) in family firms at the 1% level, with a 0.000 p-value and (0.013) coefficients (Table 5.11). This can be explained by the argument that in family firms, while firms become larger they tend to invest in different businesses that may increase profit and size of business. Firm

size is positively associated with firm performance, which means smaller firms are underperforming compared to larger firms. Also, another explanation for this result is that large firms, compared to smaller firms, can access capital at lower costs.

This result is consistent with other findings such as Akbas and Karaduman (2012), in their study of the Istanbul market. However, the result is not consistent with some studies; Sarkar and Sarkar (2000) conclude that larger firms can be less efficient than smaller ones because of the loss of control by top managers over strategic and operational activities within the firm. Also, it can be suggested that investors face more agency problems as the size of firm increases, and that affects firm performance. Lang and Stulz (1994) find a decrease in firm return as the firm becomes larger and more diversified. Based on this finding, Hypothesis 7 for family firms, which stated that there is a positive relationship between firm size and firm performance, is supported.

### ***Leverage***

Leverage (LTDTA) in this study has a negative insignificant regression coefficient with performance measured by ROA in family firms. For non-family firms, there is an insignificant positive relationship between leverage and firm performance (as measured by the ROA). We expect in the hypothesis to find that firm performance has a negative relationship with leverage in terms of risk of bankruptcy, and this limits the firm's ability to raise new capital. The explanation for this result can be linked with descriptive result, as we found that the mean for non-family firms is higher than family firms, with values of 13% and 8% respectively. So, leverage for non-family firms may help in supporting the firm's operation and lead to increasing performance. However, this finding is not as expected; therefore, Hypothesis 8, which indicates that there is a negative relationship between leverage and firm performance, is not supported.

The firms in KSA may be benefits from the lower of the interest rate, which encourages firms to have leverage in their investment to increase performance. In addition, firms may be consistent with the agency problems because of leverage. This may lead to poor performance in firms with very high leverage.

### 5.6.2 Firm Performance as Measured by the Market Return

Table 5.13 presents the results of the analysis using the MR as a proxy of performance. This ratio reflects how the stock return highlights the company's performance and what it will get in return from the market. Most previous studies used the ROA and Tobin's Q as indicators for firm performance, while not many studies have paid attention to market returns. However, many researchers suggest, based on a financial viewpoint, that market return should be used to measure firm performance (Fisher & McGowan, 1983; Oswald & Jahara, 1991). Also, Gitman and Madura (2001) conclude that shareholders use the return from stock prices as an indicator of firm performance. In the case of Saudi Arabia, no previous studies used the market return in measuring firm performance; therefore, this variable is included in this study.

Based on the statistic results of the Hausman test as shown below in Table (5.13), we fail to reject the null of random effects. Consequently, we estimate the random effects models.

**Table 5.13 2sls Regression results for performance measured by market return**

	Model One		Model Two			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
MR	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
OWNCON	-0.006	0.940	0.002	0.977	1.892	<b>0.095*</b>
STATOWN	0.118	0.529	-0.124	0.843	-1.753	0.194
MANGOWN	-0.353	<b>0.069*</b>	-0.194	0.225	-0.803	<b>0.006***</b>
BRSIZE	0.024	0.064*	0.016	0.247	0.033	<b>0.041**</b>
Non / Dual	0.084	0.113	0.083	0.312	0.094	<b>0.097*</b>
CEO - Family	0.020	0.682	0.016	0.773		
LTDTA	-0.418	0.731	0.359	0.598	-0.396	0.829
FSIZE	-0.065	<b>0.000***</b>	-0.062	<b>0.000***</b>	-0.072	<b>0.049**</b>
ARTN	0.073	<b>0.065*</b>	0.072	<b>0.058**</b>	0.076	0.577
_cons	0.404	0.049	0.450	0.036	0.311	0.560
<b>R-squared</b>	0.056		0.109		0.086	
<b>Hausman Test</b>	chi2(8)= 10.05 P-value = 0.261		chi2(8)= 9.54 P-value = 0.299		chi2(8)= 0.77 P-value = 0.997	
<b>Prob &gt; F,chi2</b>	0.000		0.000		0.000	
<b>LR test</b>	LR Ch2		14.09			
	Prob > chi2		0.000			
<b>Industry dummy</b>	Yes		Yes		Yes	
<b>Observation</b>	533		281		252	



\* Significant at 10%; \*\* significant at 5%; \*\*\*significant at1%: regressions with robust standard errors

These regressions as a whole are significant at a 1% level of significance, as shown in the probability of  $F=0.000$  in random effects for both family and non-family firms. It has been noted that the R-squared in this model is 10% and 8% for family and non-family firms respectively. This is clearly less than the range of the previous regression for ROA and Tobin's Q.

The result from Table 5.13 shows an insignificant relationship between board size, managerial ownership, ownership concentration, state ownership, non-duality, leverage, and firm performance as measured by the MR in family firms. Regarding the family and non-family firms, the result also shows a significant negative relationship between firm size and firm performance. This result is different from what we found in our result measured by the ROA. The result is consistent with some previous research such as Klein et al. (2005) and Farooque et al. (2007). From the agency theory side, a small firms is better than a large firm in terms of control and monitoring, and that will lead to reducing the agency problems and information asymmetries between external and internal investors. This leads to firms having high performance.

In addition, in family firms there is a positive relationship result at the 5% level. with asset turnover. We noticed previously that there is a positive significant relationship in both family and non-family firms between asset turnover and performance measured by ROA or Tobin's Q. In non-family firms the results show that the board size has a positive significant relationship on firm performance. This positive relationship indicates that when the board size increases, the performance of the family firms will increase. This result is similar to what we found in our result measured by the ROA. This is similar to some previous studies such as Sunday (2008), and Shakir (2008). Also, there is a positive relationship between non-duality and MR in the non-family firms at the 0.097 level of significance and 0.094 coefficients. Firms in which the CEO and chairman roles are separated display higher MR ratios. This result is consistent with the view that the board's monitoring is unlikely to be as effective if the same person holds the two top positions.

Regarding managerial ownership, we found a significant negative relationship between managerial ownership and profitability measured by MR, in non-family firms. The coefficient of -0.803 can be interpreted to mean that an increase of 1% in managerial ownership will lead

to a 0.06% decrease in the MR. In other words, firms with managerial ownership levels 1% higher will have a decrease of 0.06% in MR. Based on this finding, Hypothesis 3, which stated that there is a positive relationship between managerial ownership and firm performance, is not supported because the result here is a negative relationship. In some earlier studies such as Morck et al. (1988) and Stulz (1988), it is implied that the more shares the managers hold, the more their entrenchment is, along with their ability expropriate the firm's resources for their own benefits.

## **5.7 Robustness of the Results**

In the following section, a set of sensitivity tests related to different measures of agency costs is reported. First, we investigate the robustness results for agency costs as measured by the expense ratio (EXPRAT) and then administrative expenses (ADMEXP) to see how these will affect the performance compared to the process we used with asset turnover (ARTN).

### ***5.7.1 Agency Costs as Measured by the Expenses and Administrative Ratio***

Table A5.2 in the appendix presents the results of the analysis using the expense ratio (EXPRAT) as a proxy of agency costs. This ratio indicates how efficiently the firm's management controls operating expenses. A higher discretionary expenditure ratio is indicative of agency misalignment. Therefore, a positive coefficient means higher agency costs and a negative one indicates lower agency costs. Similar to the results found before, in Model 2 we report a significant negative relation between performance (ROA) and the EXPRAT ratio in non-family firms at the 1% level. These results are consistent with the incentive-alignment (entrenchment) effects explained earlier. That is, agency cost is associated with a negative effect on firm performance in family firms at higher levels of ownership concentration, while this relationship is more likely to be positive at lower levels of ownership concentration.

Also, Table A.5.4 in the appendix indicates that there is a significant positive relationship between MR and EXPRAT in family firms. Regarding the non-family firms, the result shows an insignificant relationship between EXPRAT and firm performance as measured by MR. Based on this finding, we can conclude that EXPRAT as a measure for agency costs affects the firm performance (ROA) in non-family firms in a significant negative relationship.

In addition, measuring agency costs by EXPRAT leads also to some changes in other variables. In ROA, while there is no relationship between leverage in family firms, a negative relationship occurs between leverage and firm performance. In Tobin's Q, a significant positive (negative) relationship with agency costs (ASTN) becomes a positive and significant relationship in family firms (Table A5.2).

Table A5.5 in the appendix presents the results of the analysis using the administrative expenses (ADMEXP) as a proxy of agency costs. This ratio indicates how managerial activities of spending firm resources are reflected by the expense ratio. A high administration expense ratio would lead to high agency. Similar to the results found before, in the main regression we report a significant negative relation between performance (ROA) and the ADMEXP ratio in family firms at the 1% level.

Also, Table A.5.6 in the appendix indicates that there is an insignificant negative relationship between Tobin's Q and ADMEXP in family and non-family firms. Based on this finding, we can conclude that ADMEXP as a measure for agency costs only affects the firm performance (ROA) in family firms.

### ***5.7.2 Probit Regression***

Table A5.8 and A5.9 in the appendix present the results of the analysis using the probit regression model, which was developed to examine the discrete of the performance measurement (ROA and Tobin's Q). Estimate probit model is the same what we did before just a different dependent variable.

The new dependent variable (ROAD and Tobin's QD) is a dummy variable that measures whether a firm perform well or is the performance is poor; it takes the value of 1 if the firm performs well (good), and otherwise 0 (bad). Here we divided the data to two groups, over median and this take value 1, under median and this take value 0.

The results show some differences with our main regression. In Table A5.8 for ROA, while there is no relationship between managerial ownership and performance in family firms, a negative relationship occurs at the 10% level. In addition, we have the same relationship between non/dual and agency costs (ARTN) with firm performance (ROA) in family firms. Regarding non-family firms, we found a significant positive relationship between performance

and leverage, ownership concentration, and state ownership, at the 1% level. There was no relationship between these variables and performance in the main regression.

In Tobin's Q in table A5.9, we have the same results as are in the main regression for non-family firms, but the relationship between managerial ownership and performance (ROA) becomes a significant and positive relationship. On the other hand, there are some differences in the results in family firms. The results show a significant and positive relationship between performance and managerial ownership and non-duality, at the 5% level. However, there is no relationship between these variables and performance in the main regression. Regarding the agency costs and performance, we have the same results in both family and non-family firms, which are a significant and positive (negative) relationship with agency costs (ASTN); this finding is consistent with our results in the main regression in ROA and Tobin's Q.

## **5.8. Conclusion**

In this chapter, the determinants of corporate performance in Saudi companies are studied, which helps to understand the role of agency issues. The research explains the elements of corporate governance. The literature on the topic of performance-governance mainly focuses on the relationship between the managers and the shareholders. Not much research has been done on the agency issues in the context of Saudi Arabia, and this study tried to address these issues by providing a detailed investigation of the impact of ownership structure, board structure, and agency costs on corporate performance using firm data from Saudi Arabia.

Tables 5.4, 5.5, and 5.6, provide the descriptive statistics for all sample family and non-family firms. The results show that the leverage ratio means values for all samples is 10%, while the leverage ratios means for family and non-family firms are 8% and 13% respectively. Based on this result, we noticed that the family firms uses less debt, and this result is consistent with previous studies such as Sraer and Thesmar (2006) and Anderson and Reeb (2003).

Also, the result shows that the values of means for ownership concentration with all sample is 19%, while the ownership concentrations means for family and non-family firms are 23% and 14% respectively. Based on this result, we noticed that the family firms have more ownership concentration. This result is expected because in family firms, most of the firm's shares are owned by one or two families. Also, the total sample in this study indicates that most of the Saudi-listed firms are owned and managed by families.

The regression results indicate that in family firms, the board size has a positive significant regression coefficient and there is a relationship between board structure (board size) and firm performance. This is similar to previous studies such as Sunday (2008) and Shakir (2008). Regarding the non-family firms, the result shows no relationship between board size and firm performance. Further, the results indicate that there is a positive relationship between non-duality performance in the family and non-family firms. Firms in which the CEO and chairman roles are separated display higher performance. This result is consistent with the view that the board's monitoring is unlikely to be as effective if the same person holds the two top positions. The results further suggest that the CEO can additionally exert a positive effect on firm performance by holding board membership. This result suggests that if the CEO is a board member, he or she may facilitate and participate in the decision making process rather than dominate the decisions of the board, as may be the case when he/she is CEO and chairman simultaneously.

In addition, the results show that agency costs in both family and non-family firms have a negative relationship with performance. That means if agency costs decrease, the firm performance will increase. This finding is consistent with Gul et al. (2012) and Mustapha and Ahmed (2011). Saudi Arabia is a developing country, and like many other developing countries, groups and families own most of the businesses and a large percentage of shares are held by the managers, which could reduce the agency costs in the firm and lead to a positive effect on firm performance. Sraer and Thesmar (2007) found that owner-managed firms perform better. Lee (2006) found a positive effect on performance for firms managed by family. Following the agency theory of Jensen and Meckling (1976), agency costs should be lower in firms managed by the owner, and that will lead to an increase firm performance.

## 5.9 Summary of Results

	<b>Hypothesis</b>	<b>Test Result</b>
<i>H2</i>	Performance and ownership concentration in <b>family firms</b> have an insignificant positive relationship with ROA, Tobin's Q, and MR.	Not supported with ROA, Tobin's Q, and MR
<i>H2</i>	Performance and ownership concentration in <b>non-family firms</b> have an insignificant positive relationship with ROA and a significant positive relationship with MR. On	Not supported with ROA

	the other hand, performance is negatively related to ownership concentration measured by Tobin's Q.	Supported with Tobin's Q and MR
<b>H3</b>	Performance and managerial ownership in <b>family firms</b> have an insignificant relationship with ROA, Tobin's Q, and MR.	Not supported with ROA, Tobin's Q, or MR
<b>H3</b>	Performance and managerial ownership in <b>non-family firms</b> have an insignificant relationship as measured by the ROA and Tobin's Q. Managerial ownership in <b>non-family firms</b> has a significant and negative relationship as measured by MR.	Not supported with ROA and Tobin's Q Supported with MR
<b>H4</b>	Performance and state ownership in <b>family firms</b> have an insignificant relationship with ROA, Tobin's Q, and MR.	Not supported with ROA, Tobin's Q, and MR
<b>H4</b>	Performance and state ownership in <b>non-family firms</b> have an insignificant relationship with ROA and MR. However, performance and state ownership have a positive relationship when measured by Tobin's Q.	Not supported with ROA and MR Supported with Tobin's Q
<b>H5A</b>	Performance and board size in <b>family firms</b> has a significant positive relationship with ROA, an insignificant and negative relationship with Tobin's Q, and an insignificant and positive relationship with MR.	Supported with ROA Not supported with Tobin's Q and MR
<b>H5B</b>	Performance and Non/dual in <b>family firms</b> have a significant positive relationship with ROA.	Supported with ROA Not supported with Tobin's Q and MR
<b>H5C</b>	Performance and CEO-Family in <b>family firms</b> have an insignificant positive relationship with ROA and MR. Conversely, performance and CEO-family in <b>family firms</b> have an insignificant and negative relationship with Tobin's Q.	Not supported with ROA Tobin's Q and MR
<b>H5A</b>	Performance and board size in <b>non-family firms</b> have an insignificant relationship with ROA and Tobin's Q. However, there is a positive relationship between performance and MR.	Not supported with ROA and Tobin's Q Supported with MR
<b>H5B</b>	Performance and Non/dual in <b>non-family firms</b> have an insignificant and negative relationship with Tobin's Q. However, there is a positive relationship between performance and Non/dual with ROA and MR.	Not supported with Tobin's Q Supported with MR and ROA
<b>H6</b>	Performance and agency costs (asset turnover) in <b>family firms</b> have a significant and positive (negative) relationship with ROA, Tobin's Q, and MR. Performance will increase with a decrease in agency costs.	Supported with ROA, Tobin's Q and MR

<b>H6</b>	Performance and agency costs (assets turnover) in <b>non-family firms</b> have a significant and positive (negative) relationship with ROA and an insignificant and negative relationship with Tobin's Q and MR.	Supported with ROA Not supported with MR and Tobin's Q
<b>H7</b>	Performance and firm size in <b>family firms</b> have a significant negative relationship with MR. Conversely, performance and firm size in <b>family firms</b> have a significant and positive relationship with ROA and Tobin's Q. Performance will increase with an increase in firm size.	Not supported with ROA Supported with ROA, Tobin's Q, and MR
<b>H7</b>	Performance and firm size in <b>non-family firms</b> have an insignificant relationship with ROA and Tobin's Q. However, there is a negative relationship between firm size and MR.	Not supported with ROA and Tobin's Q Supported with MR
<b>H8</b>	Performance and leverage in <b>family firms</b> have a significant positive relationship with MR. Performance will increase with an increase in leverage. Also, there is an insignificant relationship with ROA and Tobin's Q.	Supported with MR Not supported with ROA and Tobin's Q
<b>H8</b>	Performance and leverage in <b>non-family firms</b> have an insignificant relationship with ROA and MR. Conversely, there is a significant and positive relationship with Tobin's Q. The firm value will increase with an increase in leverage.	Not supported with ROA and MR Supported with Tobin's Q

# Chapter Six

## Determinants of Capital Structure

### 6.0 Introduction

Capital structure refers to the way in which a firm is financing its total assets, operations, and growth through issuing equity, debt, and hybrid securities. Financing is the process of collecting money through certain sources to be used on purchasing or maintaining total assets, current firm operations, and any expected growth. Equity comes from issuing common stocks, preferred stocks, and retained earnings; debt can be classified into long-term debt, e.g. long term notes payable, bonds, and debentures, and short term debt, i.e. short-term bank loans and accounts payable. Besides these sources of finance, firms issue some hybrid securities that possess the characteristics of both equity and debt, such as income bonds.

All theories presented two models of capital structure. The first model is the trade-off theory, which assumes the benefits and costs of debt use are stated. This theory originally only included the tax advantages of debt and bankruptcy costs; however, it was then expanded to include agency conflicts, costs, and benefits. The second essential model is the pecking order theory, which assumes the existence of information asymmetry between outsiders and insiders. The more modern theory for capital structure is the market timing theory, which was presented by Baker and Wurgler (2002). This theory depends on market conditions. If debt is costing less, then firms choose to issue debt first, and when equity is costing less, firms chose to issue equity before debt. In the other words, firms prefer external equity when the cost of equity is low, and they prefer debt otherwise. However, the purpose of this study is to compare family and non-family firms in terms of determinants of capital structure following the mostly theories used in empirical research. Therefore, only the trade-off theory and pecking order theory will be covered in this thesis, which will help in providing an opportunity to compare results in this study to a large amount of existing research. Thus, theories such as the market timing theory will not be included in this thesis. In addition, in this study, no variables were used to reflect dividend policies of firms. The focus is only on the determinants of capital structure, which



explain the debt structure and equity structure of firms. Therefore, this study only used theories which explain the amount of debt in the capital structure of firms.

Theory of capital structure predicts that the debt rate of a company increases with an increase in marginal tax rates. However, in Saudi Arabia, the taxation policies are quite different from those of other markets. This is due to certain culture-specific factors which result in the transformation of economic behaviours. Of the wealth of a Saudi firm, 2.5% is taxed out in the form of zakat. This deduction of zakat, although being quite minimal, can significantly influence the taxation and the capital structure decisions in Saudi firms. Moreover, Saudi Arabia has some unique features that could add some interest to this thesis. First, Saudi firms enjoy a taxation-free environment. Second, all private and public firms are supposed to give zakat, which is collected by the government through the Department of Zakat and Income. Third, the calculation of zakat is different from that of conventional taxes.

The capital structure of family firms is very different from that of non-family firms, for many reasons. Family firms tend to avoid debt in their capital structure as they are much more risk averse compared to non-family firms (Mishra & McConaughy, 1999; Zhou, 2012). The capital holdings of the shareholders in family firms are kept limited, as they do not want to lose control over their firms and they need to retain their dominant position (Xin-Ping et al., 2006; Prencipe et al., 2008). This is due to this fact that the debt level of the firm may rise, since firms prefer debt to equity if the control of the firm is at risk (González et al., 2011). Debt covenant motivations are present within family firms, which are why they usually avoid any kind of debt covenant violations (Prencipe et al., 2008). The capital structure of family firms is also affected by the long-term perspective and the desire to pass the business on to the next generation (James, 1999).

The inter-country differences in corporate financing patterns have not been discussed in detail by the capital structure theories. The literature presents no theories on the relationship of capital structure of the firms and the country-specific factors. The characteristics of a firm have a strong effect on its amount of leverage, and several cross-country empirical studies suggested that these characteristics also play a vital role in the capital structure decisions (e.g. Hall et al., 2004; De Jong et al., 2007). Developed countries have carried out many studies on the topic which is why it is possible to extract valuable information from these studies. However,

developing countries have limited contributions. The capital structure theories being applied in countries would be different based on their institutional factors and traditions.

Moreover, a gap in this research has been in the capital structure of family firms, probably due to the lack of data for those companies (Hall et al., 2004). The family and non-family firms would have different capital structures, which is why a thorough analysis and comparison is conducted as part of this research study, and that may be particularly fruitful.

The Arab countries require thorough and extensive research on their capital structures of firms, as such research would enable them to achieve their capital structure action plans and corporate sector reforms. Many of the Middle Eastern countries have a similar heritage, culture, language, and religion, along with the institutional and regulatory environment, which is why it is possible that their capital structure may also be the same. Even though this study focuses on Saudi Arabia, it is expected that other countries in the Middle East region would also be able to take advantage of it.

The emerging markets of the world and these countries have different and distinct characteristics. The economy of these countries is highly dependent upon the fluctuation of the oil prices, the US dollar rate, as well state of the world economy state. Also, Saudi Arabia offers an ideal opportunity to examine the determinants of capital structure in an environment free of taxation. Germany's differential taxation system was used by Buettner et al. (2006) to analyse the effect of taxes upon capital structure decisions. In order to understand this effect, it is necessary to analyse countries like Saudi Arabia that are tax free, which is carried out as part of this research.

In this context, we analyse the capital structure in the context of non-financial firms in Saudi Arabia firms listed on the Saudi Stock Exchange (SSE) for the period between 2006 and 2013; the data is sourced from Datastream and company financial reports, using an unbalanced panel data sample of 98 firms and corresponding to 792 firm-year observations. From the total sample, 54 firms are family-firms (about 56% of the firms) and 44 are non-family firms.

Hence, the objective of this chapter is to explain the capital structure decision and its determinants in listed companies in Saudi Arabia, by comparing family and non-family firms during the period of 2006-2013. Among the main characteristics of the Saudi financial market environment are the absence of a corporate tax, a vague and general bankruptcy law, and an

undersized and illiquid bond market. Our focus will be on trying to determine factors that affect capital structure decisions in the unique institutional environment of Saudi Arabia. Therefore, for our analysis, we consider only specific company factors such as size, growth, tangibility, liquidity, and ownership structure.

More specifically:

- 1- Are the capital structures the same as in the West?
- 2- Is there a difference in capital structure between family and non-family firms?

## **6.1. Empirical Studies on the Determinants of Capital Structure**

The determinants of capital structure selected in this research are due to the consensus in most of the previous studies. These previous studies suggest that leverage is a result of various firm attributes. The most important of these variables are asset structure, growth opportunities, size, liquidity, and free cash flow.

The hypotheses development section will contain the theory related to each variable in order to reduce levels of redundancy. The following section will, however, help with understanding the implications of the variables in a brief manner.

### ***6.1.1 Asset Structure***

In literature, the theories state that asset tangibility and debt have a positive relationship. In the case of empirical studies, it is observed that the different measures of debt and asset structure have different effects.

The pecking order theory in terms of assets mispricing or under-investment, agency theory and trade off theory all state that assets have a strong liquidation value, which is why they are mostly used as a debt guarantee. There are several studies present in literature such as Huang and Song (2006), and Antoniou et al. (2008), which have used international information to present a positive relationship between asset tangibility and debt.

Multinational or domestic organisations present their own unique positive effects (Akhtar, 2005). The level of debt may be high, medium, or low, and this level also influences the positive

effect (Fattouh et al., 2005). The UK capital markets are observed to have a low moral hazard since they attach less importance to the positive effect than any other nations (Wald, 1999).

However, a negative relationship has been observed between intangible assets like research and development expenses and debt level (Balakrishnan & Fox, 1993). The firm's borrowing capacity becomes limited since the intangible assets do not have a redeployment characteristic. Firms that are less dependent on leverage would be producing specialized or unique products that incur higher costs in terms of liquidation (Titman & Wessels, 1988). This concept is supported by international data (Bhaduri, 2002).

The debt measures being applied play a vital role in the process, which is why Cassar and Holmes (2003) and Bevan and Danbolt (2002) present contradictory results. Another researcher also believes that if a firm has less liquid or current assets and a higher amount of fixed assets, it could lead to a negative relationship with debt (Panno, 2003).

For Australia, an insignificant relationship has been observed; this is based on two major aspects, which include the strong relationship between lenders and firms that reduces the need for collateral, and a concentrated ownership structure (Deesomsak et al., 2004).

### ***6.1.2 Growth Opportunities***

Some studies observe a positive impact between growth and leverage and this support the pecking order theory and signalling model. These include Colombo (2001), Chen (2004). A positive impact is also observed by Dessi and Robertson (2003), which shows that profitable growth opportunities are not clearly indicated through growth rates, and more specifically, these opportunities would probably not remain the same at all times.

Various impacts in countries have been observed in studies that are based on a number of countries. For instance, Wald (1999) found that there was a positive influence for Germany, UK, France, and Japan, but there was a negative impact for the US. This relates to the findings of Bhagat and Welch (1995), who observed a positive impact on Japanese firms but a negative impact for the US. Bevan and Danbolt (2002) found inconsistent impacts and an insignificant relation when the book value was used for debt; they found a negative relation when market value was used. A negative impact with high levels of debt, but a positive effect for lower values of debt ratios was found by Fattouh et al. (2005). Bhaduri (2002) found that long-term

debt and growth have a positive relationship. However, in short-term debt, this relation is insignificant. Moreover, a negative impact for local firms but an insignificant impact for multinationals was found by Singh and Nejadmalayeri (2004). Finally, Titman and Wessels (1988) reveal that expected growth has no effect on leverage, and this result is supported later by Krishnan and Moyer (1997).

### ***6.1.3 Firm Size***

The agency theory, with regard to debt requirements to monitor behaviour of managers, is supported by those who found a positive impact. Ownership in big firms is more extensive and owners are too far away to take the primary role in controlling activities. The positive effect also supports the trade-off theory, which believes that there are greater chances of financial distress and bankruptcy in bigger firms. The asymmetric information theory is also supported, which holds that size indicates how much information is available to outside investors.

Titman and Wessels (1988) found a negative impact on short-term debt, which indicates the high costs of transactions for small firms with regard to issuance of long-term securities. Moreover, in comparison to big firms, small firms make more use of short-term debt.

Ozkan's (2001) study demonstrates contradictory effects as it indicates double impacts. He supports asymmetric information for a negative impact and the trade-off theory for a positive impact. A positive impact for the gearing book value is observed by Bevan and Danbolt (2002), but when market values are used, it shows an insignificant impact, indicating that no theory can provide clear prediction expectations for such a relationship. Moreover, a negative impact with firm size at high values of debt ratios, but a positive effect at lesser values of debt ratios is observed by Fattouh et al., (2005). They imply that regardless of firm size, the firms might not be able to use debt on favourable terms when they become extremely leveraged. A positive impact on total leverage but a negative on long-term leverage is found by Chen (2004). This is justified due to two reasons: the low cost of bankruptcy because of the ownership structure in Chinese companies and the ease of large firms gaining access to capital markets.

Different impacts in different countries have been observed in studies. For instance, there is a negative impact for Germany but a positive impact for the remaining countries that were observed by Rajah and Zingales (1995), which leads to a negative indication and no specific reason for such a relation. The trade-off theory is supported by Akhtar (2005) since he found a

positive impact for domestic and multinational firms, but he noticed that there is a negative diversification coefficient for multinational firms, which implies that foreign geographical diversification is a benefit without any rise in the company's default risk.

There was a negative and insignificant impact for the UK, and a positive impact for Italy, which was found by Panno (2003), whose study indicated that in times of financial distress, smaller firms have less ability to handle liquidation risk. In addition, a positive impact on long-term debt was observed by Wald (1999) for all countries except Germany, which showed a negative impact, and France, where an insignificant impact was seen; both these countries have less developed debt markets.

#### ***6.1.4 Liquidity***

The agency theory and pecking order theory are supported by those who find a negative relation between liquidity and level of debt. According to the pecking order hypothesis, high liquidity firms use internal resources instead of external resources for financing projects. Panno (2003) and Deesomsak et al. (2004) support the pecking order hypothesis. Conversely, relying on the agency theory, Ozkan (2001) justifies the negative effect by the potential conflict between shareholders and debt holders. According to him, liquidity of a firm's assets can be considered as proof demonstrating the degree to which shareholders can manipulate these assets at the expense of bondholders.

#### ***6.1.5 Free Cash Flow***

Agency theory argues that debt reduces the amount of the free cash flow available to managers to engage in personal benefit activities, since debt commits the firm to making debt payments (Jensen, 1986; Stulz, 1990). Accordingly, this would suggest a direct relationship between free cash flow and leverage. Conversely, if the free cash flow represents the capacity of the firm's internal generated resources, the pecking order theory would suggest an inverse association between free cash flow and leverage.

#### ***6.1.6 Profitability***

One of the main variables in determining capital structure is profitability, which would state the trade-off theories and pecking order theories. The main source of firms financing is usually the retained earnings (pecking order theory of capital structure) and debt financing is the second

source of financing, which is preferred (Myers & Majluf, 1984). The last preferred financing is equity, which includes the new equity issues. Debt is considered a disciplinary measure based on the agency cost perspective, and it is quite valuable for the firms that are attaining high profits and have free cash flows (Jensen, 1986). Hence, leverage and profitability have a positive relationship according to the trade-off theory; the leverage of a firm is positively affected by profitability (Margaritis & Psillaki, 2007). A low leverage ratio would be because the company has low profits and slow growth rates. At the same time, unprofitable firms would have a high debt to equity ratio. Therefore, if the level of profitability is high, it will help the firm to use that in retained earnings and avoid any sort of external finance. This leads to a negative relationship between the debt ratios and profitability. Most empirical research shows that profitability negatively affects leverage (Ozkan, 2001; Gonsález & Gonsáles, 2012).

## **6.2 Hypotheses and Research Model**

A number of studies investigate the relationship between the determinants of capital structure and the firm's debt level. This research aims to expand these studies' findings and investigate whether these determinants also are different between family firms and non-family firms.

There are two units in this section. Hypothesis development is the first unit, which will analyse the theoretical background as the basis on which research hypotheses could be developed. The research model is discussed in the second unit, and variables will be summarized with suitable links that indicate the expected associations among those variables which make up the research model.

### ***6.2.1 Determinants of Capital Structure***

Theoretically, the capital structure can be determined through several factors. This study will test the relationship between determinants of capital structure and the debt level, combining all variables affecting the determination of capital structure.

#### **6.2.1.1 Leverage Definitions**

The capital structure literature offers a variety of definitions of leverage. Rajan and Zingales (1995) support four different ways of measuring leverage. The first definition of leverage is the ratio of total (non-equity) liabilities to total assets. The second one is the ratio of debt

(including short-term and long-term) to total assets. The third way is the ratio of total debt to net assets, which are defined as total assets minus accounts payable and other current liabilities. The final definition is the ratio of total debt to capital, defined as the sum of total debt and equity.

The debt ratio will be used as the dependent variable to test the determinants of capital structure of Saudi firms. First ratio, long-term debt scaled by book value of total assets; this is in line with other studies such as of Antoniou et al. (2002), and most of the studies about determining the capital structure used the long-term debt ratio as a proxy for leverage. The second ratio, total debt to total assets, is a leverage ratio that defines the total amount of debt relative to assets. The higher the ratio, the higher the degree of leverage and consequently financial risk. This is a broad ratio that includes long-term and short-term debt. These measures have been selected for the following reasons. First, it is necessary to find out the determinants of firms' general levels of leverage. Second, when firms use leverage, it is necessary to ascertain what determines the mix of long-term debt and short-term debt for financing asset growth. Our understanding goes first to the matching principle, according to which long-term debt is used to finance fixed assets. However, previous research indicates other influences on the choice of debt maturity, such as obstacles accessing the capital market, the development of a bond market, and size and profitability of the firms. Significant differences have been reported in the determinants of long-term and short-term debt ratios (Bevan & Danbolt, 2002).

The ratio of long-term debt to total assets represents the percentage of a corporation's assets that are financed with loans and financial obligations lasting more than one year. The ratio provides a general measure of the financial position of a company, including its ability to meet financial requirements for outstanding loans. The higher the ratio, the higher the degree of leverage and consequently financial risk. This ratio is taken from the firm's balance sheet or statement of financial position, which is called the book value.

Moreover, according to Titman and Wessels (1988), the coefficients' signs, magnitudes, and even levels of significance of the explanatory variables will differ according to whether the debt ratios are applied in terms of book or market values. For the purpose of this research, the book values of debt are used for the following reasons:



Data for book values of debt are generally available. According to Titman and Wessels (1988), there is a close correlation between book and market value of debt. Therefore, any inaccuracy resulting from using book value measures is likely to be quite small. In Saudi Arabia, the primary bond market is weak and there is no secondary bond market in Saudi Arabia, so bonds are never tradable in the secondary market; therefore, there is no market value of debt.

The main source of corporate debt is bank loans; banks require fixed assets as collateral and these are usually priced at book value.

*H1: The determinants of capital structure are different between family and non-family firms.*

### **6.2.1.2 Asset Structure**

According to agency theory, collateralized assets could be utilised as a monitoring tool to control managers and avoid threats of passing wealth from debt holders to shareholders. Lenders require collateral since it is considered an explicit promise over debt. Thus, a positive relation is expected between the debt level and asset structure (tangibility).

Williamson (1988), regarding transaction cost economies, stated that when assets tend to be further deployable, debt is favoured by companies over equity when making financing decisions. There is less asset specificity in tangible assets, so this aspect increases its benefit as collateralization for debt, leading to an increase in lenders' guarantees. As opposed to this, it is difficult to obtain credit due to asset specificity for intangible assets; this is due to the fact that they are non-collateralizable or non-redeployable. Consequently, even this indicates a positive relation between debt level and collateral of assets.

The trade-off theory assumes that firms with tangible assets are stronger to face financial distress, and these assets make debt more secured. Tangibility of assets increases the liquidation value of the firm and decreases the hazards of mispricing and the difficulties of financial loss in the case of bankruptcy. Therefore, this theory also expects a positive relationship between assets tangibility and leverage.

According to the pecking order hypothesis, firms favour debt over equity since it has less agency costs and debt is regarded as more secure. Collateral assets will cover the demand for debt. Thus, a debt would be more secure when tangibility of assets is higher. So, a positive relation is also expected.

On the contrary, it was mentioned by DeAngelo and Masulis (1980) that firms with increased levels of depreciation would be likely to have lower levels of debt if the amount of fixed assets provides a realistic proxy for the accessibility of depreciation tax shields. Thus, this would indicate that tangibility and debt level have a negative relation.

The tangibility of assets ratio in this study is measured as follows:

**Tangibility of assets** = total fixed assets to total assets

Since banks are the debt holders in Saudi Arabia, the importance of fixed assets is expected to be more significant. In fact, it has been stated the one of the requirements of bank to consider lending long-term debt sufficient collateral assets at least to cover 100% of the value of the loan. Accordingly, the following hypothesis is proposed:

**H2: There is a positive relationship between asset tangibility and the debt ratio.**

### **6.2.1.3 Growth Opportunities**

Banks can be more likely to lend to firms that present superior growth rates or when they consider a firm's valuable future growth opportunities (Chen, 2004). The pecking order theory assumes that growing firms depend on internal funds more than external funds. Moreover, growth opportunities could be an indicator of the firm's success and the level of its profitability. Thus, this indicates that the debt level and growth opportunities have a negative relation. Nevertheless, there is a need for further debt by firms that have quick growth opportunities, due to a lack of internal earnings (Michaelas & Chittenden, 1999). A positive relation is expected in this situation.

In the trade-off theory, future growth opportunities are regarded as intangible assets that cannot be collateralized. So, less debt is utilised by firms with intangible assets in comparison to those having tangible assets. According to these arguments, there is likely to be a negative relation between debt level and growth opportunities.

There is a dual role of agency theory. It assumes that managers' control increases due to growth opportunities since it increases the resources that they manage. Thus, to regulate the opportunistic behaviour of managers, there is a need for debt. As opposed to this, there could be lower debt levels in firms with increased future investment opportunities because of the debt

holders' desire to restrict firms from investing in valuable opportunities just to keep wealth for themselves at the cost of shareholders. Thus, the debt level and growth opportunities are expected to have a negative association.

Because of the information asymmetries problem, many firms with high future growth opportunities, which tend to issuing risky debt, may forego this option because it reduces the shareholders' value and transfers wealth to debt holders. Therefore, a negative relationship is also expected between growth opportunities and the debt level.

It is presumed in the signalling theory that previous investments could be an indication of good news. This signifies assurance regarding the future and could lead to a positive performance response. Further debt could be utilised by firms having high future growth opportunities.

This would be due to the dead weight costs of debt funds. Less debt is utilised by less valuable firms since they have greater debt costs. These firms have more chances of becoming bankrupt. Thus, this suggests a positive association between the debt level and growth opportunities.

This growth opportunity in this study is measured as follows:

**Growth opportunities** = Annual growth rate in growth of total sales

This research will follow the capital structure theories which expect a negative or positive relationship between growth opportunities and debt level, as represented in the following hypothesis:

**H3: There is a relationship between growth opportunity and the debt ratio.**

#### **6.2.1.4 Firm Size**

A dual role for the relation between debt level and a firm's size is assumed in the agency theory. Firstly, compared to a small company, a big company's ownership is more extensive. The owners of big companies are not in one location, so they are unable to take a lead role in regulating operation inside the company. Thus, long-term debt is preferred by big companies so there could be better control over managers. These claims propose a positive relation between debt and size of firm.

Conversely, if controlling roles are played by managers who are more interested in their benefits over the shareholders' benefits, they will prefer less debt to avoid the risk of

bankruptcy, which includes personal loss. This behaviour by managers grows in significance along with the firm's size. When the firm becomes larger, the management power becomes greater in controlling the company's resources. This affects the management efficiency in dealing with the external environment. Therefore, a negative relationship is expected between a firm's size and debt level.

Similarly, large firms need less debt as a monitoring tool because they can avoid such costs in the case of economies of scale. Large investors or the market occupy this monitoring role in these firms and this also reflects a negative relation between a firm's size and debt level.

With regard to information asymmetries, size indicates how much information is available to an external investor. Subsequently, compared to small firms, increased information transparency and disclosure of information would occur in big firms. Thus, there should be more equity and subsequently less debt in firms having less asymmetric information issues. This signifies a negative relation between debt level and the size of the firm.

It is assumed in the trade-off theory that big firms have a better reputation, are more diversified, have more stable cash flows, and have less risk and hazards to be liquidated. Due to this, capital markets could be easily accessed by big firms with little debt costs. For this reason, there is more ability in these firms to deal with financial distress and bankruptcy. As a result, the debt level and a firm's size are expected to have a positive relation.

The firm size in this study is equal to the natural log of total assets and log of total sales in the robustness results, adjusted by inflation.

**Firm Size**= Log of Total Assets

**Firm Size**= Log of Total Sales

This measure has been used in many previous studies such as Bevan and Danbolt (2002) and Fattouh et al. (2005).

According to the above discussion, and because capital structure theories give different implications for the relationship between a firm's size and debt level, this research assumes a negative relationship between a firm's size and debt level, which is represented by the following hypothesis:

**H4: There is a negative relationship between firm size and the debt ratio.**

### **6.2.1.5 Liquidity**

Liquidity is the firm's ability to meet its short-term obligations; it is defined as the ratio of current assets to current liability. Liquidity has various impacts on the capital structure choice. First, firms with high liquidity may have high debt because of their ability to meet short-term liabilities, which means a positive relationship between liquidity and debt level.

Conversely, according to the pecking-order theory, high liquidity firms have the choice to use their assets as an internal financing source instead of issuing debt to finance their projects. This indicates a negative relationship with debt. Moreover, in regards to agency theory, liquidity of the company's assets can be used to show the extent to which these assets can be manipulated by shareholders at the expense of bondholders (Prowse, 1990). This implies a negative relationship between liquidity and debt level.

This ratio is measured as follows:

**Liquidity** = current assets divided by current liabilities

According to the above discussion, and because capital structure theories give different implications for the relationship between a firm's liquidity and debt level, this research assumes a negative relationship between a firm's liquidity and debt level, represented in the following hypothesis:

**H5: There is a negative relationship between liquidity and debt ratio**

### **6.2.1.6 Free Cash Flow**

It has been pointed out earlier that agency theory argues that debt reduces the amount of free cash flow available to managers to undertake personally beneficial activities since it commits the firm to pay out cash (Jensen, 1986). This theory, therefore, suggests a direct relationship between free cash flow and leverage. However, if free cash flow represents the capacity of the firm to generate internal resources, a negative relationship between free cash flow and debt levels is expected (pecking order theory).

However, the empirical findings of previous studies reveal that the relationship between free cash flow and leverage depend on the measure of debt used. While these studies find free cash flow to be negatively correlated with total debt, a positive association is observed for long-term debt with a weak significance percentage.

It has been outlined earlier that the ownership of the Saudi firms is highly concentrated, so the costs associated with the free cash flow suggested by agency theory will be at a minimum.

This free cash flow (FCF) is measured as follows:

$$\text{FCF} = (\text{EBIT} + \text{Depreciation} - \text{Capital Expenditure}) / \text{Total Assets}$$

According to the above discussion, we expect a negative relationship between a FCF and the debt ratio, as represented in the following hypothesis:

**H6: There is a negative relationship between FCF and the debt ratio.**

### **6.2.1.7 Profitability**

The trade-off theory states that a positive relationship between leverage and firm performance is mainly due to the corporate interest payment tax deductibility. There is an information asymmetry issue, which is why the pecking order hypothesis believes there is a negative relationship. The empirical results indicate that leverage is negatively influenced by profitability; this helps support the pecking order hypothesis and contradicts the trade-off theory.

With an increase in the level of debt, there would be high profitability according to the trade-off theory. There are two reasons behind this aspect. First, the firms which attain high profitability levels have lower amounts of risk related to bankruptcy and financial distress. Hence, their debt cost is also low. The pecking order theory considers retained earnings as the viable financing method and it contradicts the trade-off theory. Myers (1984), states that more earnings are retained by the firms when there is high profitability and it is a preferred funding source as it allows for a decrease in the leverage.

The profitability in this study is measured by the following three measurements:

$$\text{Return on assets (ROA)} = \text{operating net income} / \text{total asset}$$

Tobin's Q = The ratio of the book value of total assets minus the book value of equity, plus the market value of equity to the book value of assets.

$$\text{Market return} = [\text{value at the end of the financial year} - \text{value at the start of the financial year}] / \text{value at the start of the financial year.}$$

The lower tax rate, zakat, has been subjected upon Saudi firms and they have a concentrated ownership pattern. Hence, it is not expected to have the tax and agency theories based on the positive relationship between leverage and profitability. Considering this aspect, and according to the above discussion, we expect a negative relationship between profitability and the debt ratio, represented in the following hypothesis:

***H7: There is a negative relationship between profitability and the debt ratio.***

#### **6.2.1.8 Ownership Structure**

Since there is a separation of ownership and control in the firm, dependence on debt or equity changes as the firm's stock ownership changes, and this separation will shift the firm's financial goals (Donaldson, 1985).

A number of studies test the role of ownership structure on capital structure; Lasfer (1995) finds that firms that use debt are those who have less managerial ownership in their capital structure. Also, Lowe et al., (1994) also support the importance of the ownership structure for the capital structure choice. Also, Wi and Sorensen (1986) reveal that firms with higher insider ownership have greater long-term debt.

In addition, Brailsford et al. (2002) find a positive effect for the external block holders and leverage; this relationship varies across the level of managerial share ownership. They also find a non-linear relation between the level of managerial share ownership and leverage. Moreover, Özgür (2008) investigates the relationship between insider ownership and capital structure decisions made by managers for an emerging market (Turkey). He finds that leverage issues reduce the ability of managers to divert resources from value maximisation. Also, he finds that the more willing the managers are to reduce asymmetric information between themselves and shareholders, the higher their ownership levels are in firms.

***H8: There is a relationship between ownership structure and the debt ratio.***

### **6.3 Model Specification**

The model aims to investigate the determinants of capital structure with level of debt in Saudi-listed companies with empirical analyses comparing family and non-family firms. The general relationship to be investigated can be stated as follows: leverage level is a function of the

determinants of capital structure and other variables. This can be shown simply as the following:

Level of debt  $\sim f$  (TANG, SALGR, F SIZE, LIQ, OWNCON, MOWNER, FCF, PROFITABILITY, INDUST)

**Table 6.1 Definition and measures for variables**

<b>Symbol</b>	<b>Descriptions and Measures</b>	<b>Source</b>
<b>Dependent Variables' (Debt ratio) Capital Structure</b>		
<b>LTDTA</b>	Long-term debt divided by total assets	Datastream database
<b>TDTA</b>	Total debt divided by total assets	Datastream database
<b>Independent Variables</b>		
<b>Asset structure</b>	Total fixed assets to total assets	Datastream database
<b>Growth opportunity (SALGR)</b>	Annual growth rate in total sales	Datastream database
<b>Liquidity (LIQ)</b>	Current assets divided by current liabilities	Datastream database
<b>FCF</b>	EBIT + Depreciation - Capital Expenditure divided by Total Assets	Datastream database
<b>F SIZE 1</b>		Datastream database



		Logarithm of total assets adjusted by inflation	
<b>F SIZE 2</b>		Logarithm of total Sales adjusted by inflation	Datastream database
<b>Ownership Structure</b>	<b>OWNCON</b>	Percentage holding of the largest (block of) shareholders where the total holding exceeds 10%. Large shareholdings are recorded for individuals where at least 5% of the shares are held	Thomson ONE Banker database
	<b>MOWNER</b>	Percentage of total shares held by executive directors divided by the total number of shares	Thomson ONE Banker database
<b>Profitability</b>	<b>ROA</b>	Ratio of the net income divided by total assets	Datastream database
	<b>Tobin's Q</b>	Ratio of the book value of total assets minus the book value of equity, plus the market value of equity to the book value of assets.	Datastream database
<b>Family-Firm</b>	<b>MR</b>	[value at the end of the financial year – value at the start of the financial year] / value at the start of the financial year.	
		A dummy variable that takes the value of 1 if the company is a family firm, otherwise 0.	
<b>INDUST</b>		11 dummy variables are used. Sector 1 (Foods), Sector 2 (Building), Sector 3 (Cement), Sector 4 (Hotels and Tourism), Sector 5 (Investment), Sector 6 (Media), Sector 7 (Multi-investments), Sector 8 (Chemical and Petroleum), Sector 9 (Retail), Sector 10 (Energy), and Sector 11(Real Estate). The dummy variable takes the value of 1 if the firm is	Financial reports

in that sector; otherwise, it takes the value of 0.

<b>Year</b>	8 dummy variables are used	Financial reports
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In this model, the observed leverage is modelled as a function of various firm-specific factors. The time and industry dummy variables are also included in the model to capture the time and industry-specific effects on leverage. We test the model using alternative techniques: pooled and panel analysis. Panel data, which are usually estimated by fixed and random effects techniques, help capture the effects of the firm and time-specific heterogeneities.

Additionally, in this study we run the regression using the two-stage least squares (2SLS) method. This regression (2SLS) is used as a choice estimation method when there is a possibility of endogeneity problems between performance and independent variables.

In this study, leverage is affected by profitability, but it is essential to realize that performance is affected by capital structure decisions (leverage). This issue is referred to as the endogeneity problem. To solve this problem, we perform a two-stage least squares (2SLS) analysis. Based on the name of the model (two-stage least squares), we can notice that there are two stage: the first stage finds and determines the endogenous and exogenous variables and create new variables using the instrument variables. The second stage provides the regression of the original equation, with all of the variables being replaced by the fitted values.

We use the following two-stage least squares (2SLS) regression specification. In this study, the endogenous variable is performance and it is correlated with the instrumental variables of board size, non-duality, CEO-family, and state ownership. Endogeneity was discussed in detail in chapter five

**First stage:**

$$Performance_{it} = \alpha_0 + \beta_1 BRDSIZE_{it} + \beta_2 NonDual_{it} + \beta_3 CEO.Family_{it} + \beta_4 Stateown_{it} + \beta_5 EXPRAT_{it} + \varepsilon_{it}$$

**Second stage:**

$$Leverage_{it} = \alpha + \beta_1 TANG_{it} + \beta_2 SALES.G_{it} + \beta_3 LIQ_{it} + \beta_4 FSIZE_{it} + \beta_5 OWNCON_{it} + \beta_6 MOWNER_{it} + \beta_7 FCF_{it} + \beta_8 profitability_{it} + \beta_9 INDUST_{it} + \beta_{10} YEARS_{it} + \varepsilon_{it}$$

## **6.4. Data Sample and Techniques in Statistical Analysis**

### ***6.4.1 Data Sample***

The entire Saudi Stock Exchange, i.e. all the registered Saudi companies, was considered as the sample size, while the data were collected from secondary sources. The research sample is subjected to the following criteria:

- Secondary data were collected from the Datastream database, Thomson ONE Banker database, and the financial reports of the firms.
- The time period of 2006-2013, i.e. eight consecutive years, is selected for analysis. This time period is used because the beginning of 2006 brought economic and social reforms in Saudi Arabia, and the execution of corporate governance mechanisms was commenced in 2006.
- Listed companies are classified into fifteen sectors according to the Saudi Stock Market industry classification codes.
- Banks, finance companies, and insurance companies are excluded from our list because they have different financial reports as their balance sheets have a significantly different structure from those of non-financial companies (Chtourou et al., 2008).

### ***6.4.2 The Processes of Analysis***

In analysing the data, the correlation coefficient and variance inflation factor (VIF) tests were used to check for multicollinearity since several authors including Hair et al. (1998) state a VIF value greater than 10 indicates multicollinearity. The findings revealed no significant correlation between variables. Also, the variance inflation factor (VIF) tests suggest that multicollinearity does not appear to be a concern in this study.

The issue of endogeneity usually arises when a correlation between one or more explanatory variables and the error term is found. To solve this problem, the 2SLS can be used when additional variables are needed and included with the equation (instrument variables). The

selected instrumental variables and the dependent variables must not have a correlation, but it is possible for the endogenous variable and instrumental variables to have a correlation. In this study, performance is one of the explanatory variables (independent variable); also, in the last chapter, performance was a dependent variable. Hence, the 2SLS method is used to solve these problems since there is an expectation that some explanatory variables are endogenous. This endogeneity was discussed in detail in chapter five.

Two-stage least squares regressions have been chosen to reduce the bias within the model as much as possible and solve the issue of endogeneity. More specifically, leverage is affected by profitability, but it is essential to realize that performance is affected by capital structure decisions. This issue is referred to as the endogeneity problem. Hence, a correlation has been observed between the error term and the variable. So, to avoid the issues, the 2SLS of random effects and panel estimation techniques are applied. The 2SLS regression results for capital structure are present in tables 6.5, 6.6, and 6.7). The Hausman specification test would be applied as well to make the decision between the random and fixed effects models. The results of the Hausman test are reported here, and based on the test statistic results it was insignificant, as shown below in tables 6.5, 6.6, and 6.7. Therefore, we cannot reject the null of random effects. Consequently, we estimate 2SLS random effects models.

There are two methods which can be used to assess the relationship between or within cross-sections. The first is the fixed effects model, where the individual constant is considered within a group of constants present in a regression model (Baltagi, 2001). The second is the random effects model, where the group-specific disturbance is the constant (Greene, 2007). The reliability within the fixed method and the random effects efficiency are usually interchanged while concluding the analysis. This helps make sure that there is no heterogeneous correlation amongst the independent variables (Greene, 2007). This was discussed in detail in chapter five.

However, answering the questions in this study required an understanding of the determinants of capital structure. The advantage of a random effects model over the fixed effects model is that time-constant independent variables are allowed and they can be examined in a regression model as the model does not drop them out of the regression. Also, the random effects model can deal with heterogeneity. However, where a coefficient is constant over time, a pooled regression, which examines the sensitivity of the results to alternative specifications (Beaver,

1998), is preferable since it is more flexible in modelling differences in specific behaviours of the sample (Greene, 2007). Another justification for using random effects is the important assumption of homoscedasticity and there being no serial correlation in the pooled OLS (Beaver, 1998). Moreover, the random effects model is used for controlling the dummy variables (family and non-family dummy). Also, the random effects model can deal with heterogeneity.

Based on the discussions above, the statistical techniques applied in this part of the research are as follows:

- 1- **Descriptive statistics**, which comprise the analysis of the overall mean scores, standard deviation, median, minimum, and maximum for each individual variable.
- 2- **Multivariate analysis:** two-stage least squares regression (2SLS) and random-effect panel data.
- 3- Numerous sensitivity analyses were presented.

## 6.5 Descriptive Statistics

This section will discuss the results obtained from the study conducted within 97 firms in the Saudi Stock Exchange (SSE)), divided into two categories: 54 firms representing family businesses and 44 firms representing non-family firms. Also, this section will use the sample set to further show and discuss some descriptive statistics analyses for these variables. The descriptive statistics include the mean, standard deviation, median, minimum, and maximum. The descriptive statistics are reported in three tables: table 6.2 for the pooled sample of firms (family and non-family), table 6.3 for family firms, and table 6.4 for non-family firms.

**Table 6.2 Descriptive statistics for all firms' (pooled) variables**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>MAX</b>	<b>MIN</b>	<b>SD</b>	<b>Median</b>
<b>Dependent Variables</b>						
LTDTA	727	0.105	0.669	0.00	0.148	0.048
TDTA	764	0.179	0.884	0.00	0.192	0.141
<b>Independent Variables</b>						
MANGOWN	787	0.040	0.476	0.00	0.074	0.009
OWNCON	792	0.193	0.95	0.00	0.217	0.12
FSIZE	759	8.954	12.74	5.465	1.429	8.808
LIQ	757	0.317	357.58	0.028	13.66	1.808
ASSTAN	763	0.465	0.941	0.000	0.236	0.486
SALGR	712	0.401	76.11	-1	3.725	0.103
FCF	756	0.138	0.796	-0.499	0.131	0.12
ROA	715	0.074	0.628	-0.678	0.100	0.062

Long-term debt to total assets: (LTDTA); Total debt to total assets: (TDTA); Ownership concentration: (OWNCON); Managerial ownership: (MANGOWN); Liquidity: (LIQ); Asset tangibility: (ASSTAN); Sales growth: (SALGR); Free cash flow: (FCF); Firm size: (FSIZE); Return on assets: (ROA).

**Table 6.3 Descriptive statistics for family firms**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>MAX</b>	<b>MIN</b>	<b>SD</b>	<b>Median</b>
<b>Dependent Variables</b>						
LTDTA	398	0.102	0.669	0.00	0.154	0.036
TDTA	425	0.205	0.884	0.00	0.175	0.178
<b>Independent Variables</b>						
MANGOWN	437	0.052	0.476	0.00	0.084	0.006
OWNCON	440	0.203	0.8	0.00	0.218	0.13
FSIZE	417	9.039	12.746	5.465	1.382	8.886
LIQ	422	3.241	357.5	0.028	17.43	1.749
ASSTAN	425	0.444	0.913	0.00	0.230	0.438
SALGR	398	0.237	15.02	-0.954	1.180	0.116
FCF	421	0.160	0.628	-0.499	0.141	0.15
ROA	397	0.085	0.578	-0.604	0.093	0.078

Long-term debt to total assets: (LTDTA); Total debt to total assets: (TDTA); Ownership concentration: (OWNCON); Managerial ownership: (MANGOWN); Liquidity: (LIQ); Asset tangibility: (ASSTAN); Sales growth: (SALGR); Free cash flow: (FCF); Firm size: (FSIZE); Return on assets: (ROA).

**Table 6.4 Descriptive statistics for non-family firms**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>MAX</b>	<b>MIN</b>	<b>SD</b>	<b>Median</b>
<b>Dependent Variables</b>						
LTDTA	329	0.110	0.595	0.00	0.139	0.051
TDTA	339	0.188	0.721	0.00	0.211	0.083
<b>Independent Variables</b>						
MANGOWN	350	0.026	0.38	0.00	0.058	0.003
OWNCON	352	0.182	0.95	0.00	0.216	0.12
FSIZE	342	8.850	12.383	5.687	1.479	8.35
LIQ	335	3.517	60.667	0.317	6.269	1.95
ASSTAN	338	0.491	0.941	0.00	0.241	0.525
SALGR	314	0.608	76.116	-1	5.447	0.085
FCF	335	0.110	0.796	-0.099	0.111	0.082
ROA	318	0.060	0.628	-0.678	0.108	0.042

Long-term debt to total assets: (LTDTA); Total debt to total assets: (TDTA); Ownership concentration: (OWNCON); Managerial ownership: (MANGOWN); Liquidity: (LIQ); Asset tangibility: (ASSTAN); Sales growth: (SALGR); Free cash flow: (FCF); Firm size: (FSIZE); Return on assets: (ROA).

Table 6.2 shows that the leverage (TDTA) for all the selected data has a mean value of 0.179 and a standard deviation of 0.192. In this study, the leverage value of the sample is compared with those of other developed countries. According to Rajan and Zingales (1995), in U.S and German firms, and per Adedeji (1998) regarding the U.K, the leverage values are around 0.38. However, as calculated in a more recent time period, the leverage values in the U.S are reported to be between 0.25 and 0.27 (Flannery & Rangan, 2006). This shows that the firms in the US have transformed their financial structures, from being rested upon debt to being reliant on retained earnings. However, the leverage values found in this particular study are relatively lower than those of developed countries.

However, family firms have lower amounts of long-term debt (LTDTA) than non-family firms (10% for family firms compared to 11% for non-family firms). However, this may reflect the fact that family firms are more likely to be small firms; thus, they do not have access to the capital markets nor do they have easy access to long-term bank debt; hence, they rely on short-term debt and on their profit to finance growth.

Regarding the variable of asset structure (asset tangibility), measured by fixed assets to total assets, the mean is 0.49 for non-family firms and 0.44 for family firms. The fixed assets to total

assets for the sample of both family and non-family firms is quite similar, ranging from 0, which means no fixed assets in these firms, to 0.91-0.94 respectively, which expresses that 91%, 94% of a firm's assets are fixed assets. There was a low standard deviation of 0.23 for family firms and 0.24 for non-family firms, unexpectedly. It has been noticed that there is no big difference in the fixed assets to total assets ratio between family and non-family firms.

## **6.6. Econometric Analysis**

This study seeks to achieve a number of objectives to discover the Saudi capital structure, and it aims to determine the capital structure among Saudi-listed firms. Moreover, this module provides empirical evidence on the relationship between leverage measured by long term debt divided by total assets (LTDTA) and total debt to total assets (TDTA) as dependent variables; the independent variables are tangibility, liquidity, firm size, growth, FCF, profitability, and ownership structure, which are used to compare family and non-family firms.

Before presenting the regression results, some specification test results, such as the variance inflation factor (VIF), which test for multi-co linearity problems, are presented. According to the results, the mean VIF value is 1.22 since the VIF for all variables ranged between 1.05-1.79. The VIF indicated that there was no problem with collinearity and the results for this VIF might be seen in the appendix table A6.1.

### **6.6.1 Findings for Regression Models**

Tables 6.5, 6.6, and 6.7 show the regression results for the relationship between firms' leverage, measured by the long-term debt to total assets (LTDTA) and total debt to total assets (TDTA) as the dependent variables, and the other variables.

These regressions as a whole are significant at a 1% level of significance, as shown in the probability of  $F=0.000$  in the random effects (2SLS) for both family and non-family firms. It can be seen that in Table 6.5, the R-squared for the first regression, using LTDTA, is 10% and 36% for family and non-family firms respectively. For the TDTA, the R-squared is 43% and 68% for family and non-family firms respectively. For the second regression using the LTDTA, the R-squared is 22% and 51% for family and non-family firms respectively (Table 6.6), and for the TDTA, the R-squared is 40% and 67% for family and non-family firms respectively. In Table (6.7), the R-squared for the third regression, using LTDTA is 16% and 37% for family



and non-family firms respectively. For the TDTA, the R-squared is 39% and 45% for family and non-family firms respectively.

Both models have significant Wald chi-squared values. This means that resulting values of the random effects two stage least squares (2SLS) reflect the actual relationship and are not merely a consequence of chance. The panel regression technique, i.e. the random effects (2SLS), assumes zero correlation between independent variables and the fixed effect. The Hausman test results are reported, and the result was insignificant, which confirms the panel data model type is random, as seen in the appendix table (A6.2).

In addition, the random effects model is used for controlling the dummy variables (family and non-family dummy). Groups and within-group estimations are possible with the generalised least squares estimator. Using this estimator has an advantage, since it is a weighted average of the within-group and between-group estimators, thus allowing the researcher to extract information from those two differences (Greene, 2007), as mentioned earlier in chapter five (regression analysis).

**Table 6.5 Two-stage least square (2SLS) regression results for capital structure, measure the profitability by (ROA).**

	Model One		Model Two			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>Leverage</b>	LTDTA	TDTA	LTDTA	TDTA	LTDTA	TDTA
	Cof /sig	Cof /sig	Cof /sig	Cof /sig	Cof /sig	Cof /sig
<b>LIQ</b>	0.000	-0.000	0.000	-0.000	-0.000	-0.010
	<b>0.070*</b>	0.219	<b>0.103*</b>	<b>0.041**</b>	0.979	<b>0.018**</b>
<b>ASSTAN</b>	-0.092	0.332	-0.121	0.337	-0.102	0.224
	<b>0.012**</b>	<b>0.002***</b>	0.261	<b>0.000***</b>	<b>0.017**</b>	0.235
<b>SALGR</b>	-0.000	0.000	0.000	0.001	-0.000	0.001
	0.338	<b>0.006***</b>	0.946	0.361	0.336	0.216
<b>FCF</b>	0.111	-0.258	0.167	-0.150	-0.110	-0.206
	0.372	<b>0.091*</b>	0.325	0.262	0.305	0.218
<b>FSIZE</b>	0.005	0.009	0.029	-0.000	-0.000	0.013
	0.540	0.228	<b>0.033**</b>	0.937	0.984	0.325
<b>OWNCON</b>	0.013	-0.064	-0.104	-0.086	0.170	-0.052
	0.865	0.197	<b>0.052**</b>	0.145	<b>0.062**</b>	0.573
<b>MANGOWN</b>	-0.116	0.121	-0.091	0.096	-0.256	0.227
	<b>0.019**</b>	<b>0.048**</b>	<b>0.080*</b>	0.125	0.183	<b>0.034**</b>
<b>ROA (Fit)</b>	-0.509	0.008	-0.473	-0.389	-0.176	-0.199
	0.127	0.979	0.284	0.277	0.473	0.681
<b>_cons</b>	0.202	-0.081	0.026	0.075	0.251	-0.059
	<b>0.042**</b>	0.437	0.839	0.476	<b>0.080*</b>	0.739
<b>R-squared</b>	0.070	0.461	0.103	0.434	0.369	0.689
<b>Prob &gt; F,chi2</b>	0.000	0.000	0.002	0.000	0.000	0.000
<b>Industry dummy</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Time dummy</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Observation</b>	512	530	281	292	231	238

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%, regressions with robust standard errors

**Table 6.6 Two-stage least square (2SLS) regression results for capital structure, measure the profitability by (Tobin's Q).**

	Model One		Model Two			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
	LTDTA	TDTA	LTDTA	TDTA	LTDTA	TDTA
Leverage	Cof /sig	Cof /sig	Cof /sig	Cof /sig	Cof /sig	Cof /sig
<b>LIQ</b>	0.003	-0.011	0.004	-0.015	0.006	-0.011
	0.391	<b>0.000***</b>	0.340	<b>0.003***</b>	0.151	<b>0.015***</b>
<b>ASSTAN</b>	-0.018	0.285	-0.077	0.339	-0.000	0.186
	0.774	<b>0.004***</b>	0.386	<b>0.001***</b>	0.999	0.253
<b>SALGR</b>	-0.000	0.001	0.001	0.001	-0.000	0.001
	0.134	<b>0.088*</b>	0.475	0.227	0.153	0.172
<b>FCF</b>	-0.040	-0.206	-0.002	-0.235	-0.050	-0.240
	0.407	<b>0.026**</b>	0.952	<b>0.102*</b>	0.548	<b>0.002***</b>
<b>FSIZE</b>	0.003	0.012	0.026	-0.004	-0.003	0.021
	0.638	0.156	<b>0.042**</b>	0.635	0.712	0.192
<b>OWNCON</b>	0.031	0.018	-0.107	0.033	0.170	0.059
	0.574	0.795	<b>0.065**</b>	0.694	<b>0.021**</b>	0.684
<b>MANGOWN</b>	-0.132	0.088	-0.033	0.085	-0.601	0.193
	0.250	0.354	0.352	0.206	<b>0.057**</b>	0.538
<b>Tobin's Q (Fit)</b>	0.239	0.106	0.088	0.142	0.305	0.043
	0.326	0.531	0.488	0.196	0.155	0.845
<b>_cons</b>	0.027	-0.129	-0.066	0.000	0.098	-0.136
	0.851	0.342	0.635	0.997	0.489	0.457
<b>R-squared</b>	0.197	48.3	0.229	0.406	0.513	0.670
<b>Prob &gt; F,chi2</b>	0.000	0.000	0.003	0.000	0.000	0.000
<b>Industry dummy</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Time dummy</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Observation</b>	518	539	283	295	235	244

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%, regressions with robust standard errors

**Table 6.7 Two-stage least square (2SLS) regression results for capital structure, measure the profitability by (Market Return).**

	Model One		Model Two			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
	LTDTA	TDTA	LTDTA	TDTA	LTDTA	TDTA
	Cof /sig	Cof /sig	Cof /sig	Cof /sig	Cof /sig	Cof /sig
<b>LIQ</b>	0.000	-0.000	0.000	-0.000	0.001	-0.017
	<b>0.053**</b>	0.324	<b>0.071*</b>	0.144	0.715	<b>0.017**</b>
<b>ASSTAN</b>	-0.102	0.292	-0.089	0.248	-0.061	0.076
	<b>0.021**</b>	<b>0.008***</b>	0.290	<b>0.004***</b>	0.386	0.694
<b>SALGR</b>	-0.000	0.000	0.001	0.000	-0.000	0.002
	0.431	<b>0.005***</b>	0.368	0.758	0.287	<b>0.097*</b>
<b>FCF</b>	-0.093	-0.217	-0.030	-0.232	-0.047	-0.360
	0.134	<b>0.018**</b>	0.579	<b>0.063*</b>	0.687	<b>0.062*</b>
<b>FSIZE</b>	0.012	0.010	0.029	-0.000	-0.000	0.037
	0.165	0.287	<b>0.022**</b>	0.905	0.948	0.138
<b>OWNCON</b>	-0.057	0.003	-0.154	-0.048	0.190	-0.043
	<b>0.069**</b>	0.965	<b>0.100*</b>	0.609	<b>0.002**</b>	0.757
<b>MANGOWN</b>	0.009	0.112	0.002	0.170	-0.161	0.399
	0.927	0.128	0.977	<b>0.081*</b>	0.156	0.176
<b>MR (Fit)</b>	-0.184	0.035	-0.125	0.076	0.085	-0.341
	0.282	0.746	0.355	0.497	0.614	0.209
<b>_cons</b>	0.162	-0.079	-0.009	0.096	0.222	-0.106
	<b>0.035**</b>	0.439	0.927	0.362	<b>0.072*</b>	0.559
<b>R-squared</b>	0.006	0.478	0.160	0.399	0.372	0.453
<b>Prob &gt; F,chi2</b>	0.001	0.000	0.001	0.000	0.000	0.000
<b>Industry dummy</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Time dummy</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Observation</b>	495	519	263	277	232	242

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%, regressions with robust standard errors

The LR test examines whether the observations on family and non-family firms might be pooled, by comparing the log likelihoods of the two models to see the fit of one model to the fit of the other, and it tests whether this difference is statistically significant. If the difference

is statistically significant, the less restrictive model (the one with more variables) is assumed to fit the data significantly better than the more restrictive model.

The LR test statistic is calculated in the following way:

$$H_0: \psi_i = \phi_i$$

$$H_1: \text{At least one } \psi_i \neq \phi_i$$

$$\chi^2 = 2 * (\text{LR (model 2)} - \text{LR (model 1)})$$

If the  $H_0$  is rejected, at least one coefficient is different, so the determinants of capital structure are different.

This statistic is distributed chi-squared with degrees of freedom equal to the difference in the number of degrees of freedom between the two models. We see that the test statistic in our test gives us the chi-squared values of 15.36, 20.07, and 16.05, and the associated p-value is very low (less than the test statistic), with eight degrees of freedom, 0.05, which is significant; this means that model two is preferred.

### **A- Asset Tangibility**

In the previous section, it has been shown that the mean of asset tangibility of the sample firms is 46.5%. Booth (2001) notes that in developing countries, the average asset tangibility of large firms varies, from 32.8-67.5%. This discrepancy may be due to the difference in the size of the firms. In our sample, the majority of firms are medium-sized family firms, which are less tangible than non-family firms. The average of asset tangibility is 44% and 49% in family and non-family firms respectively. However, in some cases, small family firms are observed to be more tangible than large firms, so these firms are much stronger and can use their highly tangible assets as collateral.

The results obtained for family firms are as follows: for long-term debt, tangibility (ASSTAN) in tables 6.5, 6.6, and 6.7 has a non-significant regression coefficient; therefore, there is no relationship between LTDTA and ASSTAN. On the other hand, for total debt in tables 6.5, 6.6, and 6.7, the tangibility ASSTAN has a positive, significant regression coefficient, having a 0.000 level of significance and coefficients of 0.337, 0.339, and 0.248 respectively. Based on this finding, the second hypothesis, which stated that there is a positive relationship between asset tangibility and leverage, is rejected.

Our findings regarding the relationship between asset tangibility and leverage with respect to long-term leverage and total leverage to total assets in family and non-family firms are in accordance with the trade-off and pecking order theories. These theories suggest that a firm with tangible assets is more likely to get debt with lower rates of interest by providing due security to the creditors. This will provide encouragement to such a firm to have more debt than a firm having fewer tangible assets. This confirms the positive relationship between asset tangibility and leverage.

Empirical studies carried out by Kremp (1999) and Frank and Goyal (2003) find a positive relation between collateral and level of debt. There are also some studies which provide inconclusive results, such as the study carried out by Titman and Wessels (1988). The pecking order theory provides that firms having less asset tangibility are more sensitive to informational asymmetries. This urges them to opt for getting debt instead of using equity when they are in need of external financing (Harris & Raviv, 1991). This consequently leads to an inverse relation between intangible assets and leverage.

For non-family firms, the result in Table 6.5 shows that tangibility has a negative and significant regression coefficient on long-term leverage, with 0.017 levels of significance and -0.102 coefficient.

The results of our research show that Saudi-listed firms with high tangibility tend to use long term-leverage. Our results of there being an inverse relationship between the asset tangibility and long-term leverage in non-family firms is in accordance with trade off theory. Harris and Raviv (1990) argued that owing to the pertaining agency issues between a firm's managers and shareholders, firms having more tangible assets should take more debt. This is due to the behaviour of managers who refuse to liquidate the firm even when the liquidation value is higher than the value of the firm. They ignore the fact that an increase in the leverage will increase the probability of default risk and that would be to the benefit of shareholders. Jensen (1986) and Stulz (1990) indicated another role of debt as per the agency theory is that an increase in debt level will decrease the free cash flow. However, debt tends to play this role only in cases where firms have relatively fewer tangible assets, as the resulting expenses of managers would be quite difficult to monitor.

Gaud et al. (2003) indicated that the coefficient of tangibility had a positive and significant value for panel data estimations. Kremp (1999) and Frank and Goyal (2003) suggest that this result is quite similar to the previously obtained findings. It has been observed that while agreeing on getting long-term debt, the concerned firms had used collateral as their tangible asset. In doing so, the relationship observed between the two measures is not obtained when considering the pecking order theory. The pecking order theory provides that firms having lesser asset tangibility are more subject to informational asymmetries and are more likely to use debt.

In addition, long-term debt and tangibility have a significant and negative relationship (Table 6.5). It is opposite of what was initially estimated in our hypothesis. The pecking order theory assumes negative relationship, which shows that the equity issuance become less costly due to low asymmetric information and large tangible assets.

Firms which have a close relationship with creditors (banks) are required to provide less collateral because of this relationship (Berger & Udell, 1994). In Saudi Arabia there are only 12 commercial banks, which help in making close relationships with firms.

Also, leverage and tangibility's negative relationship can be understood through the fact that a large amount of fixed assets within the total assets make use of less amounts of debt in some companies compared to others. It is mainly because the companies which have large amounts of tangible assets may have an income source which is stable and relies upon internal financing and avoids external financing. The negative relationship could also be due to the fact that high operating fixed assets would require low financial leverage. This result is consistent with some previous researches such as Booth et al, (2001), which suggest similar results and indicate that debt ratio and tangibility have a negative relationship.

The relationship between tangibility and leverage in Saudi Arabian firms is as follows: asset tangibility has a negative regression coefficient on long-term liability in non-family firms, and asset tangibility has a positive regression coefficient on total debt in family firms. Conversely, in family firms, it has been observed that firms having higher asset tangibility tend to have debt, but it is more long-term, and firms having lower asset tangibility tend to have less long-term debt. Such firms have higher risks of going bankrupt.

## **B- Firm size**

The natural log of assets is used as the proxy for Size. Table 6.5 reports findings on the relationship between the sample of family firm's and long term debt. It shows that in family firms, the size of the firm has a positive and significant regression coefficient of 0.029 coefficients and a 0.033 level of significance, meaning that a 1% increase in firm size gives a 0.029 increase in leverage. From these values, it can be comprehended that the larger the size of the family firm, the greater will be the probability of it using leverage for financial assistance. The table also shows that in non-family firms, the firms' size has a negative and non-significant regression coefficient for leverage (-0.000) and a 0.984 level of significance.

However, it is seen that the size attribute of the family firms in Table 6.6 tends to have a positive and significant regression coefficient for leverage (LTDTA), having the values of 0.042 for level of significance and 0.026 for the coefficient. However, non-family firms are observed to have non-significant regression coefficients for long-term leverage, with 0.712 and -0.003 as values for the level of significance and coefficient respectively. Also, the firm size and long-term debt of family firms tend to have a positive and significant regression, as shown in Table 6.7. The level of significance is 0.022 and the value of the coefficients is 0.029. Based on this finding, the fourth hypothesis, which stated that there is a negative relationship between size and leverage, is not supported.

Ultimately, we have reached to two results: first, in the family firms, only leverage (LTDTA) is found to have a positive significant relation with firm size. Second, size is negatively and insignificantly related to leverage in non-family firms.

Our second result is consistent with the pecking order theory. Rajan and Zingales (1995) commented upon this result that it provides less asymmetrical information about the large-sized firms and reduces the probability of undervaluation of the new equity issue. This, consequently, encourages the large-sized firms to use equity financing. The pecking order theory provides an inverse relation between leverage and firm size. It provides that larger firms are more likely to face lower adverse selection and thus can produce more equity than smaller firms as they are confronted with more severe adverse selection issues. This is because larger firms are more reputed and well-experienced in the field. They have more assets and a larger base, which automatically makes the adverse selection an important thing.



Many theories are provided for reasoning the relation of firm size with the structure of capital. According to Chung (1993) and Grinblatt and Titman (1998), smaller firms do not prefer using outside financing as they find it more costly to resolve informational asymmetries with lenders. Instead, smaller firms tend to use equity for financial assistance rather than debt (Rajan & Zingales, 1995). Firm size is also linked with relative bankruptcy costs and the probability of bankruptcy, i.e. larger firms have lesser chances of being bankrupted owing to their diversified networks and reputation in the market as compared to smaller firms (Titman & Wessels, 1988). Also, another reason why smaller firms hesitate in opting for debt and have lower leverage ratios is that they are more prone to liquidation in case of financial distress than larger firms (Ozkan, 1996).

A literature review of previous research in this regard shows that many of the studies have found a positive relationship between firm size and leverage. Drobetz and Fix (2003) reported a positive relationship between size and leverage, suggesting size as a proxy for a low probability of default. Pandey (2001) found that firm size and the debt ratio are correlated positively, proving the assumption that larger firms are more diversified, less likely to be bankrupted, and have lower costs for issuing debts or equity. This is consistent with the trade-off theory. Conversely, Rajan and Zingales (1995) indicated that larger firms are more likely to have less debt than that of smaller firms. They argued that owing to this reason, German firms are more easily liquidated than firms in Anglo-Saxon countries.

Thus, the above description can be summarized as indicating that large firms tend to choose long-term debts, when they choose to use debt for financing their growth. Conversely, in the family sample, there is a positive relationship significant at the 5% level, with long-term debt.

### **C- Ownership structure**

#### ***Ownership Concentration***

The studies indicate the existence of a relationship between capital structure and ownership structure. However, Bathala et al. (1994) found the relationship to be negative, while Berger et al. (1997) found it to be positive. As mentioned in chapter three, in Saudi Arabia, the companies are mainly owned either by families or by the government, so it is not surprising to find that company ownership is highly concentrated.

According to the results of tables 6.5, 6.6, and 6.7, for family firms, the ownership concentration has a negative and significant regression with the long-term debt ratio. Coefficient value are 0.052, 0.065 and 0.100 level of significance and p-value -0.104, -0.107 and -0.154 respectively. An increase in ownership concentration in family firms will lead to a decrease the long-term debt (leverage). Sometimes, the family firms even choose by themselves to have less leverage. Friend and Lang (1988) found that an inside concentration of ownership, such as what's found in family firms, reduces the debt, protects investment capital in the company, and generates higher profits. In addition, firms with more tangible assets tend to use less debt, indicating greater use of internal financing in their capital structure (Cheng & Tzeng, 2011).

In contrast, in non-family firms, it has been found that there exists a positive relationship, significant at the 5% level, with long-term debt. This suggests that the firms with concentrated ownership tend to use more debt and thus less equity for their financial needs. In our sample of non-family firms, the ownership is highly concentrated and is in control of the government. La Porta (1999) indicates that in the developing countries, companies have to pay a dividend in order to build the reputation to market future stock issues holds. Thus, such firms have a positive correlation between government-controlled ownership and dividends. This behaviour is in accordance with previous research as well.

In the case of government-controlled ownership, the concerned firms enjoy many benefits such as an easier approach to substituent sources of funding and guaranteed solvency (Deesomsak et al., 2004). Government-owned firms are also assumed to have a positive relationship between the owner's investment and leverage. Stulz (1988) suggested that in the firms where the ownership is also among the shareholders, higher financial leverage is quite likely. This not only increases the ownership's control over the equity investment, but also reduces the chances of a hostile takeover.

### ***Managerial Ownership***

The negative relationship of the managerial ownership variable with long-term debt in both family and non-family firms has been shown in tables 6.5 and 6.6, having the values 0.080 and 0.057 for level of significance and -0.091 and -0.601 for the coefficient, respectively. However, in the sample of family firms, the result is having the values, significant at the 8% level negative

relationship with long-term debt; in non-family firms result is observed to be driven by, significant at the 5% level negative relationship with long-term debt.

The managerial ownership is found to have a significant influence on the capital structure in terms of long-term debt. A 1% increase in the managerial shareholding in family firms reduces the leverage by 9%. Moreover, higher levels of debt increase the probability of default risks. Consequently, the managerial interest in long-term viability encourages the firm owners to opt for lower leverage levels. These findings are in accordance with those of Friend et al. (1988), who proposed that in the case when external shareholders are absent, the probability of obtaining a lower debt to equity ratio increases, and it results in higher non-diversifiable debt to manage risks.

The study shows that the managerial shareholding has a negative relation with the long-term debt ratio. This result is similar to what was obtained from previous research: as managerial shareholding in a company increases, owing to the risk of bankruptcy, the ownership tends to cut down the company's debt size. In case of the Saudi firms, most of the manager-controlled companies are generally those whose majority equity is held by families. They do so because the families are reluctant to risk becoming bankrupted, thus they keep control over company's debts.

#### **D- Free cash flow**

The ratio of the earnings before interest and tax plus depreciation less capital expenditure to total assets is used to capture the influence of free cash flow on debt levels. It has been shown in the tables (6.6 and 6.7) that the free cash flow variable in both family and non-family samples has a negative relationship with the total debt at the 10% level of significance. Based on this finding, the sixth hypothesis, which stated that there is a negative relationship between FCF and leverage, is rejected.

In contrast, in the sample of family firms, there has been a negative relationship between total debt ratios and FCF. It is evident from these results that in Saudi firms the conflicts between managers and shareholders, suggested by the free cash flow theory of Jensen (1986), are not the main problems. In such a case, the higher concentration of managerial ownership among family and non-family companies reduces such risks.

This is also in accordance with the empirical research previously carried out by Rajan and Zingales (1995). They propose that firms having higher rates of earnings tend to have lower levels of capital debts. This is so because such companies rely predominantly on their internal sources instead of outside ones for financial assistance. In contrast, companies having insufficient internal means of financing usually opt for getting debts from outside sources. Thus, it can be said that in such a case, the pecking order theory overshadows the free cash flow agency theory.

Since family firms are more careful about getting into financial problems (Zhou, 2012), they usually try to keep this relationship emphasized. Thus, it would not be wrong to say that free flow cash and debt are negatively related.

### **E- Liquidity**

The ratio of current assets to current liabilities is used as a proxy for liquidation value. Regarding to total debt to total assets (TDTA) and liquidity are observed to have a negative relationship in both family and non-family firms. For non-family firms, the relationship between liquidity and total debt is significant at the 1% level. This is in accordance with the previous studies, which show that the literal value of the ratio between liquidity and total debt is found to have a negative sign. The result also indicates that the firms having insufficient liquidity tend to get debt, thus supporting the negative relation between the two measures. In this regard, Bevan and Danbolt (2004) refer to liquidity as an important factor in obtaining short-term debts.

Alternatively, in family samples of firms, the liquidity is found to have a positive relationship with long-term debt at the 10% level. Antoniuo et al. (2002) provide an explanation for the lower level of significance. They explain that close relations between banks and companies mitigate asymmetric information problems. This consequently leads to a reduced need for internal liquidity.

Saudi firms have strong relationships with banks, which validates this explanation: 55% of the firms in our sample are family firms having a highly concentrated ownership, and they find it difficult to attract long-term debt. In the non-family firm sample, it has been found that liquidity is negatively related to total debt. This indicates that non-family firms, owing to their

insufficient liquidity levels, have an easier approach to either short- or long-term bank loans. This result is in accordance with the previous studies, which also demonstrate the negative relation between liquidity and debt. This also corresponds to the pecking order theory, which indicates a similar negative relation.

The pecking order theory provides that that managers prefer to use internal sources of finance. That is why they may liquidate the current capital of the company obtained from the retained earnings in order to finance the company. It has already been noted that companies with sufficient liquid assets do not require any kind of external financing in the form of debts, thus they have lower levels of leverage. An increase in the level of information asymmetry increases the cost of external debts. This asymmetry is more likely to appear in market-oriented economies as compared to bank-oriented economies. Thus, the ratio of liquidity, i.e. current assets/current liabilities, is expected to play a determinant role in KSA's capital structure.

In summary, for non-family firm samples we reject the hypothesis that liquidity is negatively correlated with debt ratios and support the pecking order hypothesis. The pecking order hypothesis proposes that firms that have liquid assets, i.e. cash and marketable securities, usually give preference to use internal sources to finance their investments. This is due to the presence of asymmetric information. Accordingly, companies which have higher ratios of liquidity tend to have lower values of leverage.

## **F- Sales Growth**

In our result in table 6.7, total debt to total assets (TDTA) and growth have a positive and significant relationship, with a 0.002 coefficient and a 0.097 level of significance; this means that a 1% increase in firm size gives a 0.002 increase in leverage. The pecking order theory and this result is consistent with each other, as it shows that firms with high growth will have a large amount of debt. On the other hand, the agency theory suggests that firms with high growth will use less debt. Here, we notice that the growth coefficient is small and it has a small effect on the Saudi firms' capital structure.

Leverage and growth have a positive correlation according to some research studies such as Titman and Wessels (1988). Also, in developing countries, growth opportunity and leverage have a positive relationship, according to Wald (1999). The management, under the pecking order theory, prefers the use of internal financing as compared to external financing (Myers,

1984). Therefore, firms with high growth would lead to high debt proportions, according to the pecking order theory.

On the other hand, the results show that long-term debt and growth for family and non-family firms (in tables 6.5, 6.6 and 6.7) have a non-significant regression coefficient, so there is no relationship between LTDTA and sales growth.

## **6.7. Robustness of the Results**

In the following section, a set of sensitivity tests related to different measures of company size is reported. First, we investigate the robustness results for firm size as measured by the logarithm of sales adjusted by inflation to see how that will affect the capital structure, compared to what we did earlier in the main regression in this chapter with firm size, which as measured by the logarithm of assets.

### ***6.7.1 Firm Size as Measured by the Log of Sales***

In this analysis, we use the logarithm of sales as a proxy for the size of firms. This measure is in line with other studies in this area (e.g., Rajan & Zingales, 1995; Ozkan, 2001).

There is little evidence that firm size (as proxied by the logarithm of sales) has a positive effect on leverage ratios (Ozkan, 2001). Tables A.6.3, A.6.4, and A.6.5 in the appendix show a relationship between firm size and debt elements in family firms, with a positive and significant regression coefficient at the 1% and 5% level for leverage ratios (TDDA). This suggests that larger family firms are more likely to use leverage for financing their investments than small size firms. These results completely change when we estimate our model by including the logarithm of total assets as an alternative proxy for the size variable because in our main regression, there are no significant results between the size of the firm and leverage (TDTA) in family or non-family firms. Just we found relation between firm size and long term debt (LTDTA) in family firms (see table 5.6). On the other hand, there is no relationship between firm size (as proxied by the logarithm of sales) and LTDTA.

Our results, which describe that the size was positively related with leverage in family firms, were consistent with trade-off theory. The trade-off theory is generally interpreted as predicting that large firms will have more debt since larger firms are more diversified and have lower

default risk. Some previous studies conclude a positive relationship; for example, Drobetz and Fix (2003) found that size was positively related to leverage, indicating that size was a proxy for a low probability of default.

Furthermore, measuring size by log of sales leads also to some changes in other variables. In long-term debt, the positive relationship with managerial ownership becomes insignificant in non-family firms (Table A.6.3). Also, in long-term debt, the positive relationship with firm size and asset tangibility becomes insignificant in family firms (Table A.6.4) In total debt to total assets (TDTA), the insignificant association with assets tangibility in non-family firms turns into a negative significant at 1% (Table A.6.5). In the total debt to total assets ratio, the significant relationship with managerial ownership becomes insignificant in non-family firms (table A.6.5).

## **6.8 Conclusion**

This chapter studies the capital structure decision and its determinants in listed companies of Saudi Arabia, and it compares family and non-family firms during the period of 2006-2013. The absence of corporate tax is the other main principle point of the Saudi market. In general, there are some issues, including zakat, weak legal framework, and there being only one main source of loans (banks); these all are important reasons for the preference of equity rather than debt for Saudi firms.

Moreover, a significant difference between the capital choices of family and non-family firms is also observed. Unexpectedly, the data shows that Saudi family firms generally have a higher level of total debt than non-family firms, while non-family firms have higher amounts of long-term debt than family firms. This may reflect the fact that family firms do not have access to the capital markets or easy access to long-term bank debt; hence, they have to rely on short-term debt to finance growth.

In the absence of tax there are differences in the capital structure between family and non-family firms, so we might conclude that since family firms have less agency problems, debt is being used as assign to shareholders. The Saudi-listed firms used the equity finance more than debt finance. The major reason for this preference is that the tax rate (zakat) imposed on the firms is almost 0, and because of this the tax advantage, debt is limited. This advantage is very

important to the trade-off theory. Barakat and Rao (2004) say that in the non-tax Arab countries, like Saudi Arabia, there is no difference in the use of debt and the use of equity, and the return from both of them is considered the same as there is no tax advantage of debt for the corporations and the investors have no tax advantage of equity.

The results show a positive relationship between tangibility of assets and total debt to assets in family firms; this also suggests that high tangibility firms use more total leverage. On the other hand, the result shows that there is a significant and negative relationship between asset tangibility and long-term debt (LTDTA); this result is not as we expected, but may this result reflects some possible explanation, such as Saudi firms may rely on short-term debt more than long term debt or Saudi firms prefer finance their investments from equity rather than debt. This finding is consistent with Cheng and Shiu (2007).

The results also provide evidence for the pecking order model in that liquidity is found to be significantly and negatively correlated with total debt to assets in the family and non-family sample; however, it is found insignificant in the family sample. This means that firms with more liquidity have less leverage. This finding is also consistent with Frieder and Martell (2006) and Ozkan (2001). In addition, the finding shows a significant and negative relationship between free cash flow and total debt (TDTA) in both family and non-family firms. These results are inconsistent with the use of debt to reduce the free cash flow (as per the agency theory) and, therefore, they are also inconsistent with the trade-off theory. These results most likely reflect lower agency costs related to government ownership in the family and non-family firm samples.

Moreover, the results show a significant and negative relationship between managerial ownership and long-term debt (LTDTA) in both family and non-family firms. Masulis (1988) explains why family firms try to reduce debt levels. He suggests that managers in family firms prefer having less leverage than those in non-family firms to reduce the risk of their investment in the company. Therefore, CEOs of family firms prefer to avoid risk because they have “most of their eggs in one basket”. On the other hand, in the sample of family and non-family firms, the results show a significant and positive relationship between managerial ownership and total debt to assets (TDTA).



## 6.9 Summary of Results

	Hypothesis	Test Result
<i>H2</i>	Asset tangibility and capital structure in <b>family firms</b> have a significant and positive relationship with total debt (TDTA); capital structure will increase with an increase in asset tangibility. Conversely, capital structure and asset tangibility in <b>family firms</b> have an insignificant relationship with long-term debt (LTDTA)	Supported with TDTA Not Supported with LTDTA
<i>H2</i>	Asset tangibility and capital structure in <b>non-family firms</b> have a significant and negative relationship with LTDTA and an insignificant negative relationship with TDTA.	Supported with LTDTA Not Supported with TDTA
<i>H3</i>	Growth opportunity and capital structure in <b>family firms</b> have an insignificant relationship with LTDTA and TDTA	Not supported with LTDTA and TDTA
<i>H3</i>	Growth opportunity and capital structure in <b>non-family firms</b> have a significant and positive relationship with TDTA.	Not supported with LTDTA Supported with TDTA
<i>H4</i>	Firm size and capital structure in <b>family firms</b> have a significant and positive relationship with LTDTA and an insignificant and negative relationship with TDTA.	Supported with LTDTA Not supported with TDTA
<i>H4</i>	Firm size and capital structure in <b>non-family firms</b> have an insignificant and positive relationship with TDTA and an insignificant and negative relationship with LTDTA	Not Supported with LTDTA and TDTA
<i>H5</i>	Liquidity and capital structure in <b>family firms</b> have a significant negative relationship with TDDA and an significant and positive relationship with LTDTA	Supported with LTDDA, and TDTA
<i>H5</i>	Liquidity and capital structure in <b>non-family firms</b> have an significant and negative relationship with TDTA and an insignificant and negative relationship with LTD and TDTE	Supported with TDTA Not supported with LTDTA
<i>H6</i>	FCF and capital structure in <b>family firms</b> have a significant and negative relationship with TDTA and an insignificant relationship with LTDTA.	Supported with TDTA Not supported with LTDTA
<i>H6</i>	FCF and capital structure in <b>non-family firms</b> have a significant and negative relationship TDTA and an insignificant relationship with LTDTA.	Supported with TDTA Not supported with LTDTA
<i>H7A</i>	Owner concentration and capital structure in <b>family firms</b> have a significant and negative relationship with LTDTA and an insignificant relationship with TDTA	supported with LTDTA Not supported with TDTA

<b>H7A</b>	Owner concentration and capital structure in <b>non-family firms</b> have a significant and positive relationship with LTDTA and an insignificant relationship with TDTA.	Supported with LTDTA Not supported with TDTA
<b>H7B</b>	Managerial ownership and capital structure in <b>family firms</b> have a significant negative relationship with LTDTA and a significant positive relationship with TDTA.	Supported with LTD TA and TDTA
<b>H7B</b>	Managerial ownership and capital structure in <b>non-family firms</b> have a significant negative relationship with LTDTA and a significant positive relationship with TDTA.	Supported with LTDTA and TDTA

# Chapter Seven

## Conclusion

### 7.0. Introduction

This chapter summarises and presents the main research findings in five sections: section 7.1 presents the aim and contribution of this thesis. Section 7.2 presents the main findings in terms of performance and capital structure. Section 7.3 presents the research implications based on our research results. Section 7.4 presents the research limitations. Section 7.5 provides the recommendations of the study, and section 7.6 presents the elements that need further research.

### 7.1 Objective and Contributions of the Thesis

The main motivation of this thesis was to understand the family businesses in one of the most important developing countries in the Middle East. Knowledge of corporate governance and capital structure has mostly been derived from a large volume of research conducted in developed countries, with very little coming from developing countries. Therefore, it is important to know how corporate governance and capital structure theories work in different countries, especially those with different traditions and institutional factors in the measurement of family ownership.

A contribution of this thesis is filling gaps in corporate governance and capital structure literature. First, there has been little proven information for family companies, probably due to the lack of data for those companies in the Middle East area. Also, most other studies suffer from the problem that family ownership is not accurately measured. Avoiding significant measurement error is useful in this context (biased and inconsistent results are largely avoided). Family ownership is relatively easy to track in this study and there are, potentially, fewer biases in the measurement and determination of family ownership than what may be the case in other settings; in family businesses in Saudi Arabia it is easy to identify the names of members of the family in the company because the whole family has the same family name, whether they are males or females, before or after marriage. This is because the Islamic law gives a choice

for a woman to keep the name of her father after marriage. Second, Saudi Arabia offers an ideal opportunity to examine the determinants of capital structure in an environment free of taxation using family and non-family firms' data. Third, whilst issues of agency costs, ownership concentration, company performance, and determinants of capital structure have been extensively studied in the US and UK contexts, as well as in developing country and Asian contexts, to some extent, the Middle East region remains comparatively under-researched in this respect. In addition, to the best of my knowledge, Saudi Arabia, in particular, has not been the focus of any such study, especially in respect of agency costs in family-controlled firms.

## **7.2. Findings of the Thesis**

### *Corporate performance*

In chapter 4, this thesis statistically examined the association between agency costs, boards of directors, and ownership structure. The detailed investigations performed in chapter 4 documented important features about Saudi companies. First, most listed firms are family firms. Second, the boards and management are frequently dominated by the families. Family members are involved in the management of the firms, as chairman of the board, board members, or senior managers. In this study, family firms were defined as those where the family owns at least 10 % of the firm's equity, with at least one family member being on the board of directors. We make a comparison between results to see if family firms are different from non-family firms in terms of performance, based on the return index and share price.

Overall, there is a difference between family and non-family firms. Relative performance appears to differ depending on the (sub) period and specific events. It appears that family firms show a less volatile pattern of returns. However, further exploration may serve to better explain why this is the case. On the other hand, the protection afforded to minority shareholders by the law is, in general, weaker, in developing countries. Saudi Arabia is a developing country, so family companies can relinquish the private benefits of control by committing to distributing higher and more stable dividends relative to non-family firms.

In addition, it was found that family firms performed better during the global financial crisis from 2007-2008 because of the ownership concentration and control of management in these firms, as explained in detail in chapter four. This result is consistent with Mitton (2002), who found that firms with higher ownership concentrations had higher stock prices during the crisis

period. Also, Lemmon and Lins (2003) show that during the crisis period, firms with controlling owner-managers did not suffer much loss of share value.

Moreover, family firms in the long term seem to be more stable than non-family firms, while although in the short term, non-family firms give back higher returns than family firms. This could be because the family managers aim for long-term value maximization, but managers of non-family firms aim for short-term gains to satisfy their own personal interests and those of the shareholders (Daily & Dollinger 1991).

The determinants of corporate performance of Saudi companies are studied in chapter 5, helping to understand the role of agency issues. The research explains the unknown elements of corporate governance. The literature on the topic of performance-governance mainly focuses on the relationship between the managers and the shareholders, and the research concentrates on the relation between managerial ownership, entrenchment, incentives, and performance. Not much research has been done on the agency issues which are present in many countries, and this study has tried to address that aspect. The study also tried to provide an extension of the earlier research done on corporate governance (such as Haniffa & Hudaib, 2006 and Ghosh, 2006). The research focused on the effects of a vital characteristic of the board (when the board member is the CEO or when the CEO belongs to an owning family) on firm performance. This can serve as a vital means of governance.

Our analysis revealed that ownership concentration has no systematic relationship with firm performance in family firms if measured by ROA, Tobin's Q, and MR. The result is consistent with the evidence of Demsetz and Lehn (1985) and Demsetz and Villalonga (2001): ownership concentration has no systematic relationship with firm value. Conversely, ownership concentration in non-family firms has a significant and positive relationship when MR is used; performance increases with an increase in ownership concentration. This finding is also consistent with the study of Kapopoulos and Lazaretou (2007), who suggested that when a firm has highly concentrated ownership, the profitability of that firm is also high. Also, in non-family firms, performance and ownership concentration showed a significant and negative relationship with Tobin's Q. This result is consistent with Davies et al. (2005) and Mura (2007), who indicate a negative correlation between block holders and corporate value for UK companies.

The findings provide an insignificant relationship between managerial ownership and profitability measured by Tobin's Q and ROA, in family or non-family firms. Conversely, managerial ownership in non-family firms has a significant and negative relationship with MR. This result is consistent with the study of Harris and Raviv (1988) and Stulz (1988), who suggested that the more shares the managers hold, the more is their entrenchment, which enables them to expropriate the firm's resources to their own benefits; this leads to a reduction in firm performance.

However, performance and board size in family firms showed a significant and positive relationship when using ROA; this result is similar to some previous studies such as Pearce and Zahra (1991). However, performance and board size in family firms had an insignificant and negative relationship when using Tobin's Q. Conversely, performance and board size in non-family firms using ROA or Tobin's Q were not significantly related. This finding is consistent with some previous studies such as Yermack (1996) and Eisenberg et al. (1998). Additionally, Topak (2011) studied listed companies in Turkey and he found no relationship between board size and performance. Board size in non-family firms has a significant and positive relationship with MR., and this positive relationship indicates that when the board size increases, the performance of the family firms will increase. This is similar to some previous studies such as Sunday (2008) and Shakir (2008). The findings support the view that CEO non-duality is important for performance in family firms. This finding is consistent with Rahman and Haniffa (2005), who found in research on Malaysian firms that companies with separate roles produced better accounting performance than those with dual CEO roles. Furthermore, the findings in non-family firms showed an insignificant relationship with performance, which is consistent with Elsayed (2007), who carried out the only research in an Arab nation (Egypt). HE found that CEO duality had no influence on corporate performance. However, performance and CEO-family in family firms had an insignificant relationship with ROA, Tobin's Q, and MR.

Performance and agency costs (asset turnover) in family firms were significantly and positively (negatively) related, meaning that performance will increase with a decrease in agency costs. Also, we have the same result in non-family firms, which is a significant and positive (negative) relationship with ROA. This finding is consistent with Gul et al. (2012) and Mustapha and Ahmed (2011). Therefore, there is evidence that agency costs are important for Saudi companies and that these influences are different in their effects on family as opposed to non-

family firms. This is reinforced by the findings on agency costs when measured directly in the form of turnover ratios. However, it appears that the potential constraining effects of debt on the behaviour of a firm's managers are not influential, or at least insufficient in overcoming the greater received risks from firms that are highly levered. This may inform the interpretation of result in a setting where debt presents a tax shield for companies, which is not the case for Saudi Arabia.

Regarding performance and firm size, the results show that in family firms, there is a significant and positive relationship with ROA, this means that performance will increase as firm size increases. This result is consistent with Akbas and Karaduman (2012) and Hu and Izumida (2008), who found that firm size was positively and significantly linked with performance. Conversely, firm size in family and non-family firms has a significant negative relationship with MR, and the finding is consistent with Klein et al. (2005), who found that firm size was negatively related with performance.

Finally, we find that performance and leverage in family and non-family firms have an insignificant relationship, measured by Tobin's Q, ROA, or MR. This possibly indicates that KSA firms do not use debt as a control mechanism to maximize performance, as stated by the agency theory. Firms are attempting to grow through less risky routes (Phillips & Sipahioglu, 2004). In addition, it should be well understood by the CEOs that borrowing does not essentially lead to higher performance, but it could lead to low performance, as stated by the agency theory.

### ***Capital Structure***

The determinants of the capital structure were studied in chapter 6. The study identifies a significant difference between the capital choices of family and non-family Saudi firms; in general, Saudi firms have significantly lower levels of debt than are reported elsewhere: the 17% total debt level observed in listed companies is below the figure in most other developed countries. For example, in 1991 in the G-7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States), the mean of total debt level was 41% (37% and 29% in the United States and United Kingdom respectively) (Rajan & Zingales, 1995). It is also below to the average total debt level of 32% in Arab countries (Barakat & Rao, 2004).

This low level of debt reflects the fact that the Saudi-listed companies are in an environment free of taxation.

The Saudi-listed firms used equity finance more than debt finance. The major reason for this preference is that the tax rate (zakat) imposed on the firms is almost 0, and because of this the tax advantage of debt is limited. This advantage is very important to the trade-off theory. Barakat and Rao (2004) say that in the non-tax Arab countries, like Saudi Arabia, there are no difference in the use of debt and the use of equity; additionally, the payouts from both of them are considered the same as there is no tax advantage of debt for the corporations and the investors have no tax advantage of equity. The authors have discovered that the non-tax Arab countries use less debt than the Arab countries with taxes.

A significant difference between the capital choices of family and non-family firms is also observed. A family firm has lower amounts of long-term debt (LTDTA) than non-family firms (10% for family firms compared to 11% for non-family firms). This may reflect the fact that family firms do not have access to the capital markets or easy access to long-term bank debt. An interesting difference between family and non-family companies is the relationship with the size predictor variable. It is significant (5%) for long-term debt family firms but insignificant for debt for non-family firms. Previous research in this regard shows that many of the studies have found a positive relationship between firm size and leverage. Drobetz and Fix (2003) reported a positive relationship between size and leverage, suggesting size as a proxy for a low probability of default. Pandey (2001) found that the firm size and debt ratio are correlated positively, proving the assumption that larger firms are more diversified, less likely to be bankrupted, and have lower costs for issuing debts. Also, family firms' owners invested their wealth in their own firms, so to mitigate financing needs, the family firms may prefer long-term debt with lower liquidity risk.

The results also provide evidence for the pecking order model in that liquidity is found to be significantly and negatively correlated with total debt to assets in the family and non-family sample, but it is insignificant in the family sample. This means that firms with more liquidity have less leverage. This finding is also consistent with Frieder and Martell (2006) and Ozkan (2001), as well as Bevan and Danbolt (2004), who argue that liquidity is an important determinant of capital structure. On the other hand, the results also show a positive relationship between liquidity and long-term debt in family firms; this also suggests that high liquidity firms



use more long-term leverage. Also, the positive relationship means that firms who have high liquidity ratios may have more debt because they have the ability to meet long-term debt obligations, which is a positive signal for investors. In our study, we found that liquidity is one of the important determinants of capital structure in the developing market.

The results also show a positive relationship between tangibility of assets and total debt to assets in family firms; this also suggests that high tangibility firms use more total leverage. Having the incentive of getting debt at a lower interest rate, a firm with a higher percentage of fixed assets is expected to borrow more compared to a firm whose cost of borrowing is higher, as a result of having less fixed assets. On the other hand, the result shows that there is a significant and negative relationship between asset tangibility and long-term debt (LTDTA); this result is not as expected, but it may be due to Saudi firms relying on short-term debt more than long term debt or Saudi firms preferring to finance their investments from equity rather than debt. This finding is consistent with Omet and Mashharawe (2003) and Cheng and Shiu (2007).

Another support for the pecking order model is the finding of a significant and negative relationship between free cash flow and total debt (TDTA) in both family and non-family samples. These results are inconsistent with the use of debt to reduce the free cash flow (as per agency theory), and, therefore, they are also inconsistent with the trade-off theory. These results most likely reflect lower agency costs related to government ownership in the family and non-family firm samples.

In the sample of family and non-family firms, the results show a significant and negative relationship between managerial ownership and long-term debt (LTDTA). In general, family firms' managers, in order to reduce risk to their capital, avoid debt; Masulis (1988) explains why family firms try to reduce debt levels. He suggests that managers in family firms prefer having less leverage than those in non-family firms to reduce the risk of their investment in the company. This theory is well applicable to managers of family businesses who have a significant part of their assets invested in the business. For instance, Anderson et al. (2003) used Forbes Wealthiest Americans data in the United States to show that family business owners invested an average of 69% of their wealth in the company. Therefore, CEOs of family firms prefer to avoid risk because they have "most of their eggs in one basket". On the other

hand, in the sample of family and non-family firms, the results show a significant and positive relationship between managerial ownership and total debt to assets (TDTA).

### **7.3. Research Implications**

Generally, by providing empirical results on family firms, this research provides a better understanding of the corporate performance, capital structure, and agency cost relationships within family firms. This research updates existing literature and establishes new ground for future research, especially in developing countries. Furthermore, this research studies the effects of ownership structure, board structure, and agency costs on performance. It also examines the determinants of capital structure in a non-tax country. This research delivers interesting results for researchers in the field of family business regarding ownership, board structure, agency costs, and capital structure. In addition, this research includes one of the important markets in the Middle East and Asia, and the analysis and discussion of outcomes can provide new opportunities for future research.

Moreover, results and information in this research may provide academic discussion on family business subjects such as agency theory, capital structure, firm performance, non-tax countries, ownership structure, and family ownership. In the future, this may give students a guide for research in developing countries. Also, the study of family firms can help investors to discover the performance, capital structure corporate governance, and decisions in family and non-family firms. Therefore, results from this research may improve investors' ability to make the right investment decisions. Finally, this research uses Saudi Stock Exchange data; therefore, the results and information may be helpful for Saudi authorities and regulators to develop the corporate governance.

### **7.4. Research Limitations**

First, this study applies to one country which has its own regulations and laws. So, there would be merit in expanding the sample, perhaps to other countries in the region that might have similar cultural and legal environments but have different tax regimes. Also, the outcomes of this study and because of the differences in the culture and regulations, as mentioned previously, it is difficult to generalise other countries such as the United States or even some countries in the Middle East.

Second, the results of this study are on particular environmental factors. Saudi Arabia has been facing an eminent and rapid extension of its stock market; however, bond markets are not yet created. In spite of these limitations, the results have provided valuable information about the determinants of capital structure of family and non-family firms in Saudi Arabia.

### **7.5. Recommendations**

The recommendations in this research are based on our findings:

- 1- In terms of capital structure, we see that there are a differences between family and non-family firms with regard to capital structure financing. Family firms use less debt. Perhaps such firms adhere more to sharia principles, so it is difficult for them to use debt. Consequently, I would recommend that the government helps such firms find other sources of funding or support. Also, we would recommend that owners and managers take positive steps to improve company accessibility to external sources of debt and equity financing. This would lead to an increase in trust between firms and commercial banks or any other resources.
- 2- We found that the agency costs issue is a very important determinant in terms of performance, and we found that family firms suffer less than other firms. Consequently, we would recommend that the government look at the law relating to family firms to determine how to mitigate and address this issue. Agency costs are a problem, and the government should attempt to solve this issue. This research is the first study to consider the agency issue in Saudi Arabia family and non-family firms. This aspect should be clearly understood by CEOs, owners and investors, because this issue could lead to low performance, as stated by agency theory.

### **7.6. Suggestions for Future Research**

The important issues have been summarized as follows and they should be studied in future works:

- First, the study topic should be extended to other Gulf regions or other Arab countries that have similar characteristics to Saudi Arabia, in order to provide more evidence of corporate performance and capital structure across economies.

- Second, a comparison might be made between Gulf countries that have an environment free of taxation and those that have an environment with taxation, to provide more evidence of capital structure from countries that have similar characteristics and traditions.
- Third, a comparison might be made between family businesses from different countries such as Taiwan and Italy because these two countries have many family businesses and operate in different continents. Also, Taiwan has similar conventions to Saudi Arabia regarding the married name of women.
- Fourth, a comparison might be made between listed and unlisted companies in Saudi Arabia, in order to provide more evidence of corporate performance and capital structure across the economy.
- Fifth, it would be useful to investigate behaviours more directly by conducting studies based on interviews, questionnaire surveys, and case studies.
- Finally, this research used data in the period between 2006 and 2013. Future research could include more periods. Also, more factor variables can be considered, to come up with more explanatory. Some examples are the corporate governance index, non-debt tax shield, auditor quality, and other profitability variables.

## Appendices

### Appendix 5.1

IV	Tolerance	VIF
<b>STATEOWN</b>	0.666	1.50
<b>OWNCON</b>	0.709	1.41
<b>CEO/Family</b>	0.711	1.41
<b>ATR</b>	0.780	1.28
<b>MANGOWN</b>	0.875	1.14
<b>CEO/Chair</b>	0.904	1.11
<b>LTDTA</b>	0.935	1.11
<b>BRDSIZE</b>	0.937	1.07
<b>FSIZE</b>	0.935	1.07

### Appendix 5.2

**Table A.5.2 Regression results for performance measured by ROA**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>ROA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	0.025	0.517	0.053	0.243	-0.066	0.834
<b>STATOWN</b>	0.034	0.495	-0.038	0.716	0.053	0.902
<b>MANGOWN</b>	0.025	0.685	0.092	0.218	-0.026	0.802
<b>BRDSIZE</b>	0.003	0.311	0.005	0.199	0.002	0.756
<b>Non/Dual</b>	0.090	0.007***	0.115	0.029**	0.054	0.101*
<b>CEO/Family</b>	0.040	0.054**	0.011	0.615		
<b>LTDTA</b>	-0.301	0.298	-0.274	0.074*	0.233	0.798
<b>FSIZE</b>	0.004	0.332	0.009	0.005***	-0.006	0.310
<b>EXPRAT</b>	-0.080	0.028**	-0.141	0.123	-0.118	0.001***
<b>_cons</b>	-0.034	0.667	-0.029	0.804	0.078	0.546
<b>R-squared</b>		0.19		0.33		0.33
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Observation</b>		541		287		254

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.5.3 Regression results for performance measured by Tobin's Q**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>Tobin's Q</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	-0.267	0.439	-0.539	0.228	-0.112	0.644
<b>STATOWN</b>	0.365	0.258	0.717	0.242	0.384	0.151
<b>MANGOW</b>	0.364	0.224	0.325	0.222	0.445	0.453
<b>N</b>						
<b>BRDSIZE</b>	-0.013	0.241	-0.020	0.255	-0.015	0.430
<b>Non/Dual</b>	0.047	0.762	0.077	0.775	-0.029	0.682
<b>CEO/Famil</b>	0.029	0.679	-0.034	0.741		
<b>y</b>						
<b>LTDTA</b>	0.763	0.555	1.385	0.322	-0.745	0.703
<b>FSIZE</b>	0.031	0.104*	0.057	0.113	0.000	0.997
<b>EXPRAT</b>	0.081	0.124	0.261	0.026**	0.051	0.366
<b>_cons</b>	-0.032	0.896	-0.253	0.516	0.378	0.414
<b>R-squared</b>		0.19		0.20		0.25
<b>Prob &gt;</b>		0.000		0.000		0.121
<b>F,chi2</b>						
<b>Industry</b>		Yes		Yes		Yes
<b>dummy</b>						
<b>Observation</b>		536		279		257

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.5.4 Regression results for performance measured by MR**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>MR</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	0.042	0.609	0.116	0.181	2.914	0.078*
<b>STATOWN</b>	0.034	0.830	-0.497	0.396	-3.355	0.097*
<b>MANGOW</b>	-0.357	0.037**	-0.238	0.148	-0.743	0.044**
<b>N</b>						
<b>BRDSIZE</b>	0.019	0.129	0.022	0.131	-0.002	0.966
<b>Non/Dual</b>	0.099	0.054**	0.112	0.161	0.237	0.050**
<b>CEO/Famil</b>	0.035	0.472	0.038	0.502		
<b>y</b>						
<b>LTDTA</b>	-0.041	0.994	0.033	0.956	3.624	0.426
<b>FSIZE</b>	-0.069	0.000***	-0.063	0.000***	-0.058	0.090*
<b>EXPRAT</b>	-0.119	0.022**	-0.154	0.084*	-0.200	0.131
<b>_cons</b>	0.544	0.004***	0.509	0.021**	0.240	0.657
<b>R-squared</b>		0.10		0.10		0.029
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Observation</b>		532		278		254

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.5.5 Regression results for performance measured by ROA**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>ROA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	0.033	0.328	0.016	0.663	0.128	0.623
<b>STATOWN</b>	0.002	0.965	-0.085	0.203	-0.135	0.630
<b>MANGOW</b>	-0.018	0.721	0.091	0.221	-0.117	0.214
<b>N</b>						
<b>BRDSIZE</b>	0.006	0.159	0.010	0.101*	0.007	0.536
<b>Non/Dual</b>	0.099	0.000***	0.121	0.005***	0.096	0.085*
<b>CEO/Famil</b>	0.045	0.036**	0.036	0.068*		
<b>y</b>						
<b>LTDTA</b>	-0.014	0.956	-0.209	0.204	0.586	0.461
<b>FSIZE</b>	0.011	0.001***	0.013	0.000***	0.009	0.384
<b>ADMEXP</b>	-0.012	0.199	-0.110	0.000***	-0.010	0.227
<b>_cons</b>	-0.0191	0.013***	-0.197	0.015**	-0.268	0.294
<b>R-squared</b>		0.22		0.39		0.11
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Observation</b>		531		282		249

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%



**Table A.5.6 Regression results for performance measured by Tobin's Q**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>Tobin's Q</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	-0.205	0.650	-0.497	0.295	-0.738	0.089*
<b>STATOWN</b>	0.238	0.428	0.482	0.537	1.015	0.066*
<b>MANGOW</b>	0.361	0.228	0.350	0.187	0.432	0.467
<b>N</b>						
<b>BRDSIZE</b>	-0.016	0.141	-0.030	0.154	-0.010	0.521
<b>Non/Dual</b>	0.045	0.767	0.053	0.845	-0.027	0.638
<b>CEO/Famil</b>	0.009	0.896	-0.072	0.466		
<b>y</b>						
<b>LTDTA</b>	0.631	0.650	1.006	0.441	-0.693	0.679
<b>FSIZE</b>	0.027	0.188	0.044	0.202	-0.004	0.855
<b>ADMEXP</b>	-0.073	0.361	-0.145	0.191	-0.091	0.503
<b>_cons</b>	0.108	0.676	0.222	0.540	0.425	0.233
<b>R-squared</b>		0.20		0.17		0.26
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Observation</b>		523		272		251

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.5.7 Regression results for performance measured by MR**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>MR</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	0.051	0.532	0.066	0.460	2.354	0.193
<b>STATOWN</b>	0.021	0.905	-0.082	0.893	-2.405	0.244
<b>MANGOW</b>	-0.305	0.050**	-0.279	0.080*	-0.821	0.015**
<b>N</b>						
<b>BRDSIZE</b>	0.018	0.086*	0.018	0.252	0.028	0.167
<b>Non/Dual</b>	0.106	0.041**	0.113	0.166	0.246	0.019**
<b>CEO/Famil</b>	0.030	0.523	0.040	0.488		
<b>y</b>						
<b>LTDTA</b>	0.149	0.895	0.400	0.528	0.853	0.817
<b>FSIZE</b>	-0.063	0.000***	-0.058	0.000***	-0.083	0.021**
<b>ADMEXP</b>	-0.083	0.683	0.117	0.619	-0.261	0.459
<b>_cons</b>	0.385	0.043**	0.302	0.176	0.255	0.715
<b>R-squared</b>		0.08		0.11		0.07
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Observation</b>		520		272		248

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.5.8 Probit model results for performance measured by ROAD**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>ROAD</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	0.613	0.075*	0.542	0.500	4.047	0.005***
<b>STATOWN</b>	-1.350	0.001***	0.161	0.952	-5.494	0.000***
<b>MANGOW</b>	-0.162	0.804	-3.225	0.093*	0.590	0.527
<b>N</b>						
<b>BRDSIZE</b>	0.010	0.843	0.144	0.207	-0.093	0.165
<b>Non/Dual</b>	0.814	0.182	3.106	0.080*		
<b>CEO/Famil</b>	0.122	0.427	0.334	0.192		
<b>y</b>						
<b>LTDTA</b>	8.037	0.000***	7.041	0.141	8.943	0.000***
<b>FSIZE</b>	0.082	0.072*	0.222	0.114	0.185	0.004***
<b>ARTN</b>	0.584	0.086*	1.799	0.014**	0.542	0.008***
<b>_cons</b>	-2.575	0.052**	-6.788	0.056**	-1.667	0.035**
<b>Prob &gt;</b>		0.000		0.000		0.000
<b>F,chi2</b>						
<b>Industry</b>		Yes		Yes		Yes
<b>dummy</b>						
<b>Observation</b>		554		298		220

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.5.9 Probit model results for performance measured by Tobin's Q D**

Tobin's QD	Model One		Model Two			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>OWNCON</b>	0.711	0.241	-0.068	0.892	-152.12	0.000***
<b>STATOWN</b>	0.335	0.763	2.743	0.258	153.30	0.000***
<b>MANGOW</b>	2.877	0.115	2.812	0.013**	6.082	0.001***
<b>N</b>						
<b>BRDSIZE</b>	-0.052	0.503	-0.132	0.039**	-0.009	0.948
<b>Non/Dual</b>	0.873	0.026**	1.019	0.003***		
<b>CEO/Famil</b>	-0.050	0.819	-0.520	0.032**		
<b>y</b>						
<b>LTDTA</b>	2.779	0.755	-2.895	0.275	7.158	0.433
<b>FSIZE</b>	0.028	0.653	0.092	0.132	-0.153	-0.792
<b>ARTN</b>	0.758	0.066*	1.111	0.001***	0.320	-1.173
<b>_cons</b>	-2.044	0.155	-1.022	0.279	-0.656	-5.276
<b>Prob &gt;</b>	0.000		0.000		0.000	
<b>F,chi2</b>						
<b>Industry</b>	Yes		Yes		Yes	
<b>dummy</b>						
<b>Observation</b>	554		287		210	

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

### Appendix 6.1

IV	Tolerance	VIF
<b>STATEOWN</b>	0.666	1.50
<b>OWNCON</b>	0.709	1.41
<b>CEO/Family</b>	0.711	1.41
<b>ATRN</b>	0.780	1.28
<b>MANGOWN</b>	0.875	1.14
<b>CEO/Chair</b>	0.904	1.11
<b>LDTA</b>	0.935	1.11
<b>BRDSIZE</b>	0.937	1.07
<b>FSIZE</b>	0.935	1.07

### Appendix 6.2. Hausman test results chapter six

	Model One		Model Two			
	All Sample		Family Sample		Non-Family Sample	
	LTDTA	TDTA	LTDTA	TDTA	LTDTA	TDTA
<b>Hausman test</b>						
<b>chi2(8)</b>	-5.60	2.55	0.18	6.71	1.72	-1.15
<b>P.Value</b>	/	0.959	1.000	0.568	0.988	/
<b>Hausman test</b>						
<b>chi2(8)</b>	-0.57	8.30	1.26	84.59	4.60	0.17
<b>P.Value</b>	/	0.404	0.996	0.000	0.799	1.000
<b>Hausman test</b>						
<b>chi2(8)</b>	1.58	6.44	5.16	7.37	4.73	3.64
<b>P.Value</b>	0.991	0.597	0.470	0.497	0.786	0.888

**Table A.6.3 Regression results for capital structure measured by long term debt to total assets**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>LTDTA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>LIQ</b>	0.000	0.129	0.000	0.202	0.000	0.787
<b>ASSTAN</b>	-0.098	0.012**	-0.135	0.240	-0.099	0.024**
<b>SALGR</b>	-0.000	0.002***	-0.001	0.480	-0.000	0.070*
<b>FCF</b>	0.088	0.534	0.220	0.426	-0.092	0.382
<b>FSIZE</b>	0.030	0.159	0.052	0.473	0.015	0.243
<b>OWNCON</b>	0.012	0.861	-0.091	0.120	0.154	0.087*
<b>MANGOW</b>	-0.116	0.024**	-0.095	0.279	-0.268	0.171
<b>N</b>						
<b>ROA</b>	-0.425	0.276	-0.629	0.386	-0.191	0.470
<b>_cons</b>	0.073	0.461	-0.013	0.968	0.153	0.178
<b>R-squared</b>		0.07		0.09		0.35
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Time dummy</b>		Yes		Yes		Yes
<b>Observation</b>		510		278		232

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.6.4 Regression results for capital structure measured by long term debt to total assets**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>LTDTA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>LIQ</b>	0.003	0.355	0.004	0.332	0.007	0.123
<b>ASSTAN</b>	-0.026	0.673	-0.078	0.392	0.003	0.965
<b>SALGR</b>	-0.000	0.073*	0.000	0.668	-0.000	0.180
<b>FCF</b>	-0.038	0.410	-0.001	0.975	-0.029	0.714
<b>FSIZE</b>	0.011	0.321	-0.016	0.619	0.011	0.314
<b>OWNCON</b>	0.025	0.641	-0.095	0.105*	0.174	0.023**
<b>MANGOW</b>	-0.133	0.250	-0.009	0.780	-0.657	0.044**
<b>N</b>						
<b>Tobin's Q</b>	0.222	0.368	0.085	0.512	0.346	0.119
<b>_cons</b>	0.003	0.984	0.240	0.163	-0.028	0.861
<b>R-squared</b>	0.19		0.21		0.51	
<b>Prob &gt; F,chi2</b>	0.000		0.000		0.000	
<b>Industry dummy</b>	Yes		Yes		Yes	
<b>Time dummy</b>	Yes		Yes		Yes	
<b>Observation</b>	513		279		234	

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.6.5 Regression results for capital structure measured by long term debt to total assets**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>TDTA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>LIQ</b>	0.000	0.054**	0.000	0.220	0.001	0.750
<b>ASSTAN</b>	-0.113	0.014**	-0.119	0.174	-0.072	0.251
<b>SALGR</b>	-0.000	0.001***	0.000	0.610	-0.000	0.174
<b>FCF</b>	-0.071	0.146	-0.026	0.605	-0.047	0.678
<b>FSIZE</b>	0.020	0.316	-0.004	0.891	-0.002	0.877
<b>OWNCON</b>	-0.040	0.502	-0.109	0.235	0.185	0.003***
<b>MANGOW</b>	-0.009	0.915	0.074	0.416	-0.168	0.130
<b>N</b>						
<b>MR</b>	-0.120	0.409	-0.092	0.555	0.071	0.596
<b>_cons</b>	0.137	0.221	0.256	0.203	0.231	0.096*
<b>R-squared</b>		0.08		0.17		0.38
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Time dummy</b>		Yes		Yes		Yes
<b>Observation</b>		493		261		232

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%



**Table A.6.6 Regression results for capital structure measured by long term debt to total assets**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>TDTA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>LIQ</b>	-0.000	0.097*	-0.000	0.033**	-0.008	0.060*
<b>ASSTAN</b>	0.330	0.001***	0.341	0.000***	0.245	0.127
<b>SALGR</b>	0.000	0.216	-0.000	0.609	0.000	0.392
<b>FCF</b>	-0.254	0.126	-0.172	0.233	-0.072	0.748
<b>FSIZE</b>	0.030	0.271	0.077	0.047**	0.046	0.227
<b>OWNCON</b>	-0.059	0.183	-0.081	0.152	-0.043	0.506
<b>MANGOW</b>	0.124	0.051**	0.087	0.151	0.156	0.141
<b>N</b>						
<b>ROA</b>	0.028	0.940	-0.366	0.351	-0.403	0.480
<b>_cons</b>	-0.178	0.199	-0.333	0.109*	-0.235	0.275
<b>R-squared</b>		0.52		0.57		0.72
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Time dummy</b>		Yes		Yes		Yes
<b>Observation</b>		530		290		240

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.6.7 Regression results for capital structure measured by total debt to total equity**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>TDTA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>LIQ</b>	-0.010	0.003***	-0.016	0.000***	-0.009	0.064*
<b>ASSTAN</b>	0.294	0.002***	0.335	0.000***	0.206	0.170
<b>SALGR</b>	0.001	0.219	0.000	0.987	0.001	0.327
<b>FCF</b>	-0.198	0.036**	-0.254	0.068*	-0.194	0.013**
<b>FSIZE</b>	0.040	0.051**	0.073	0.005***	0.026	0.131
<b>OWNCON</b>	0.006	0.918	0.021	0.775	0.024	0.821
<b>MANGOW</b>	0.095	0.294	0.077	0.271	0.183	0.560
<b>N</b>						
<b>Tobin's Q</b>	0.089	0.567	0.125	0.197	-0.001	0.995
<b>_cons</b>	-0.248	0.119	-0.391	0.014	-0.113	0.535
<b>R-squared</b>		0.56		0.55		0.69
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Time dummy</b>		Yes		Yes		Yes
<b>Observation</b>		535		292		243

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

**Table A.6.8 Regression results for capital structure measured by short term debt to total assets**

	<b>Model One</b>		<b>Model Two</b>			
	2sls Two Random Effects (All Firms)		2sls Two Random Effects (Family Firms)		2sls Two Random Effects (Non-Family Firms)	
<b>TDTA</b>	Coef.	P(Sig)	Coef.	P(Sig)	Coef.	P(Sig)
<b>LIQ</b>	-0.000	0.203	-0.000	0.236	-0.011	0.031**
<b>ASSTAN</b>	0.286	0.011**	0.261	0.000***	0.139	0.362
<b>SALGR</b>	0.000	0.268	-0.001	0.540	0.001	0.192
<b>FCF</b>	-0.208	0.026**	-0.232	0.069*	-0.250	0.039**
<b>FSIZE</b>	0.028	0.191	0.063	0.060*	0.055	0.065*
<b>OWNCON</b>	-0.007	0.915	-0.003	0.973	-0.050	0.635
<b>MANGOW</b>	0.112	0.124	0.114	0.255	0.244	0.369
<b>N</b>						
<b>MR</b>	0.025	0.796	0.123	0.291	-0.283	0.160
<b>_cons</b>	-0.152	0.192	-0.260	0.192	-0.189	0.146
<b>R-squared</b>		0.53		0.50		0.52
<b>Prob &gt; F,chi2</b>		0.000		0.000		0.000
<b>Industry dummy</b>		Yes		Yes		Yes
<b>Time dummy</b>		Yes		Yes		Yes
<b>Observation</b>		515		274		241

\*significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

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