

**Effective corporate governance and the cost of capital and financial performance: An empirical investigation into the peculiar link in Saudi stock market listed firms**

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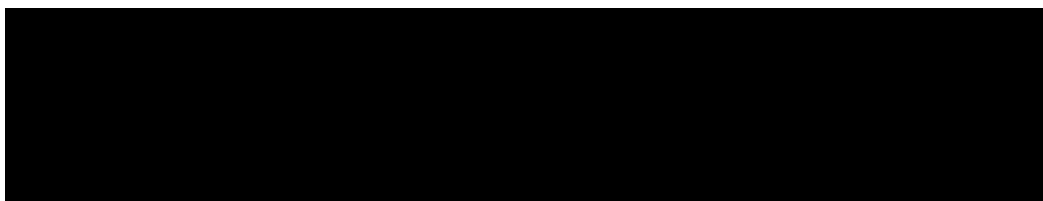
**June 2017**

## **CERTIFICATION OF DISSERTATION**

I certify that the work contained in this thesis is my own and original work that has not already been submitted for any degree and is not currently being submitted for any other degree or qualification. To the best of my knowledge and belief, the thesis contain no material previously published or written by another person except where due reference is made.

Signature of Candidate:

Date: 27<sup>th</sup> June 2017



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## ABSTRACT

Recent decades have experienced a trend in companies implementing scrupulous structures of corporate governance in response to various infamous commercial failings. It is vital that such structures are in place that would enable companies to operate openly and without the danger of being accused of inefficient management. This will help encourage foreign investors in addition to ensuring a healthy and efficient business environment.

The aim of this study is to examine the effects of ensuring effective corporate governance mechanisms on the cost of capital and financial performance, focusing on non-financial companies registered with the Saudi Arabia Stock Exchange. Saudi Arabia is a developing market in the Gulf region where block-holding ownership dominates the business world. With this peculiar ownership structure, Saudi Arabia was relatively unaffected by the Global Financial Crisis (GFC) a quality that allows local companies, with limited influences from the external business world, to be subjected to a deeper analyses with regard to their corporate governance mechanisms and their impact on the cost of capital and financial performance.

The agency theory was the primary model used in the development of the conceptual framework for this study with some borrowings from resource dependence and stewardship theories. The outcomes of existing studies in this field are largely inconclusive, with no ongoing research on the relationship between the cost of capital and corporate governance in Saudi Arabia and the limited number of studies examining this relationship between corporate governance and financial performance in the Kingdom. Thus, there is a gap in the research, which this study has aimed to fill. The findings of the current study, in addition to filling the void in the literature, are expected to influence policy-makers, practitioners, and those looking to invest in Saudi Arabian companies by equipping investors with more awareness about the information and security protection provided by the structure of corporate governance in Saudi Arabia.

The current study used 84 non-finance companies registered in Saudi Arabia between 2006 and 2014. Two prominent issues have been examined in this study: the relationship between corporate governance mechanisms and the cost of capital, and the relationship between corporate governance mechanisms and firm performance. This study employed three regression techniques examine the relationship between corporate governance variables (measured as board structure, audit committees structure, ownership structure) and the cost of

capital measured as weighted average cost of capital (WACC) in Saudi Arabia Stock Exchange listed non-finance firms. The three methods of regression included: First the, hypotheses being investigated using a pooled ordinary least squares (OLS) regression. This was followed by panel data models, both random and fixed effects, to control for any unnoticed heterogeneity. Lastly, a generalised least square (GLS) is used to investigate the hypotheses further, this time focusing on the peculiar problems of causality and endogeneity.

The results showed that corporate governance mechanisms, such as board size and block ownership, have a significant positive effect on the cost of capital. Nevertheless, board independence has a significant negative effect on the cost of capital, which indicates that these findings align closely with the theoretical underpinnings of agency theory. The financial performance of a company is expressed in this study via return on assets (ROA) and Tobin's Q. The same three aforementioned methods of regression are adopted here to examine the relationship between the implementation of corporate governance mechanisms and firms' performance. Results indicated that the governance mechanisms, including foreign ownership, government ownership, board meeting, and audit committee independence have significant positive effects on firm performance. On the other hand, board size, audit committee size and audit committee meetings have a significant negative effect on firm performance. The current study's findings showed, as suggested by the agency theory, that corporate governance mechanisms and firm performance are clearly interlinked in the context of the emerging market of Saudi Arabia.

The findings of the current study are largely aligned with the theoretical underpinnings of agency theory and with the findings of the existing literature in varying world contexts. These findings, due to their close touch with the practical world and relevance to the country's current business scenario, are expected to be relevant and beneficial for managers, investors, policy-makers and other stakeholders considering involvement with Saudi Arabian companies.

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## ACRONYMS

<b>CAMP</b>	Capital Asset Pricing Model
<b>CEO</b>	Chief Executive Officer
<b>CFO</b>	Chief Financial Officer
<b>CG</b>	Corporate Governance
<b>CMA</b>	Capital Market Authority
<b>COD</b>	Cost of Debt
<b>COEO</b>	Cost of Equity Capital
<b>FE</b>	Fixed Effect
<b>G20</b>	The Group of Twenty
<b>GCC</b>	Gulf Cooperation Council
<b>GDP</b>	Gross Domestic Product
<b>GFC</b>	Global Financial Crisis
<b>GLS</b>	Generalised Least Squares
<b>IMF</b>	International Monetary Fund
<b>LAS</b>	League of Arab States
<b>MENA</b>	Middle East and North Africa
<b>MCI</b>	Ministry of Commerce and Investment
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>OIC</b>	Organization of the Islamic Cooperation
<b>OLS</b>	Ordinary Least Squares
<b>OPEC</b>	Organization of the Petroleum Exporting Countries
<b>PIF</b>	Public Investment Fund

<b>RE</b>	Random Effect
<b>RIV</b>	Residual Income Valuation
<b>ROA</b>	Return on Assets
<b>ROE</b>	Return on Equity
<b>ROSC</b>	Report on the Observance of Standards and Codes
<b>SAGIA</b>	Saudi Central Investment Authority
<b>SAMA</b>	Saudi Arabian Monetary Agency
<b>SCGC</b>	Saudi Corporate Governance Code
<b>SCGI</b>	Saudi Corporate Governance Index
<b>SOCPA</b>	Saudi Organization for Certified Public Accountants
<b>TADAWUL</b>	Saudi Stock Market
<b>TQ</b>	Tobin Q
<b>UN</b>	United Nations
<b>US</b>	United States of America
<b>VIF</b>	Variance Inflation Factors
<b>WACC</b>	Weighted Average Cost of Capital
<b>WTO</b>	World Trade Organization

# Chapter One: Introduction

## 1.1 Introduction and Overview

Corporate governance has lately been a subject of considerable interest in financial and legal circles. It has been of interest in both academia and among professionals (Leng, 2004). There have been several failures of large corporations across the globe, such as, Enron Corp and WorldCom in the United States, Parmalat in Europe and, HIH Insurance Group and One Tel in Australia, which have brought corporate governance to the forefront of discussion (Ball, 2009; Hodne, Murphy, Ottenbacher, & Ruggles, 2013). In addition, many countries have introduced corporate governance codes in response to the GFC intended to safeguard the value of companies and in turn shield shareholders and other stakeholders from the failure of large corporations (Aguilera & Cuervo-Cazurra, 2009; Brown, Beekes, & Verhoeven, 2011). There have also been a number of studies regarding the function of corporate governance codes in a range of financial markets in developed and developing countries (Brown et al., 2011; Cheng, 2008).

The objective of corporate governance is to police the way managers and owners of corporations interact. Good governance makes sure that a) management is accountable for its actions, b) company decisions are openly made, and c) financial reports are clear and not misleading (Jensen & Meckling, 1976). Good governance is therefore important for increasing appeal to potential investors and developing shareholder confidence. It is also necessary to limit the effects of potential conflicts of interest, particularly where the owners and managers have different views regarding a company's business strategy, dubbed by Jensen and Meckling (1976) as the 'agency problem'. Corporate governance concerns the interactions between the board, the management, the shareholders and other stakeholders of a company. It defines the framework for setting the company's goals and the methods for reaching those goals and keeping track of operations (OECD, 2004). Corporate governance as we know it today only existed in the business world in the 1980s (Tricker, 2015). After the financial crisis in the 2000s, many countries began to become aware of the importance of corporate governance and started developing corporate governance regulations.

The term 'corporate governance' is used to describe the framework employed by a company to guide and control the business to maximise value on behalf of its shareholders

(Mustapha & Ahmad, 2011). It can also be considered to refer to a series of principles regarding a company's governance and how these principles are made public (Parum, 2005). Corporate governance codes have been introduced all over the world, but the specifics of the codes vary by country and are affected by socio-economic factors including the maturity of the financial market, applicable legal structures, technological development and local culture (Denis, 2001).

The cost of capital is a subject which has received a great deal of attention in the literature. It is particularly relevant to shareholders and has a significant effect on companies' financial policies. It is also an important consideration for companies when making business decisions and is fundamental to increasing company value. Some believe that in an idealised capital market, share value is not dependent upon dividends (Miller & Modigliani, 1961). However, some scholars note that investors favour a reliable source of dividends to a more risky investment strategy to achieve increased capital gain – called the 'bird-in-the-hand' theory (Gordon, 1963; Lintner, 1962). In order for management to gain approval for implementing business strategies with high agency risk, investors require a high rate of return, which increases a company's cost of capital (Poterba, 1991). The potential conflict of interest between shareholders and bondholders is another area of concern. Shareholders may prefer business strategies which increase business risk. For example, they may prefer distributing dividends to progressing positive net present value projects. These strategies can lead to a rise in the debt holder's risk of default and in turn increase the cost of the debt to the company (Ashbaugh-Skaife, Collins, & LaFond, 2006). As noted by Shleifer and Vishny (1997), it is issues such as these which generate the requirement for good corporate governance. A number of scholars have noted that good corporate governance can reduce the cost of obtaining financing from external sources (Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997). Investors can employ corporate governance processes to protect their investments from losses which may arise from business management (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). This decreases risk and in turn, the company's cost of capital.

The financial performance is a key indicator of the health of a company. It is not only of interest to the company's main stakeholders, including the owners and managers, but it also affects the country's economic indicators. It is therefore necessary for managers, investors, and other financial professionals to closely monitor the financial performance of a company and a number of standard performance indicators have been developed for this purpose

(Hoopes, Madsen, & Walker, 2003). These indicators assess a range of areas, such as a company's operational performance and reputation in the marketplace (Richard, Devinney, Yip, & Johnson, 2009). One of the most important indicators not only for management and owners but also external financial and accounting stakeholders concerns the ongoing operation of the business, and whether it is managing to maintain its market share and avoid closure (Venkatraman & Ramanujam, 1986). There are two main classes of performance indicators: those based on accounting and those based on the market. Indicators based on accounting, such as ROA and return on equity (ROE), are commonly used (Ittner & Larcker, 1997). However, these indicators can give deceptive results with regards to innovation, value relevance, etc., and many financial professionals prefer to rely on market-based indicators, such as the Tobin's Q ratio and market return (Gomes, Yasin, & Lisboa, 2007; Hult et al., 2008). Although a company's financial performance is affected by the health and maturity of the economy in which it operates, there are a number of internal factors which a company can control to promote strong performance. These include the ownership structure, governing board and corporate governance (Al-Tuwaijri, Christensen, & Hughes, 2004).

Saudi Arabia is one of the wealthiest countries in the developing world and has certain elements which set it apart from its competitors (Piesse, Strange, & Toonsi, 2012). It is not only one of the largest countries in the Middle East and North Africa (MENA) region, but also ranks near the top with regards to average annual income per capita and its stock market is considered to be among the most active in the region. Saudi Arabia is also a participant in a number of the world's prominent economic institutions including the World Bank, World Trade Organization (WTO) and the International Monetary Fund (IMF). It is also one of the main oil producers in the Organization of the Petroleum Exporting Countries (OPEC).

Numerous scholars have examined the relationship between corporate governance and financial performance (Al-Haddad et al., 2011; Arouri et al., 2011; Brown & Caylor, 2004; Stijn Claessens, 1997; Danoshana & Ravivathani, 2013; Drobetz et al., 2004; Farrer & Ramsay, 1998; Gompers, 2003; Khatab et al., 2011; Kiel & Nicholson, 2003; Klapper & Love, 2004; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002; Mitton, 2002; Ong, Wan, & Ong, 2003; Sanda, Mikailu, & Garba, 2005; Thompson & Hung, 2002; Tornyeva & Wereko, 2012; Yaser & Denise, 2012). The majority of these studies showed the relationship between corporate governance and financial performance in developed and developing countries; however, few studies have examined this topic in the context of Saudi Arabia (Yaser & Denise, 2012; Ghabayen, 2012). Moreover, a limited number of studies have



examined the relationship between corporate governance and the cost of capital, including cost of equity and cost of debt, in both developed and developing countries (Ashbaugh, Collins, & LaFond, 2004; Bhojraj & Sengupta, 2003; Blom & Schauten, 2008; Botosan, 1997; Botosan & Plumlee, 2002; Chen, Chen, & Wei, 2003; S Claessens, 2003; Drobetz et al., 2004; Gompers, 2003; Hail & Leuz, 2006; Healy et al., 1999; Klock et al., 2005; La Porta et al., 2000; Lombardo & Pagano, 1999; Piot & Missonier-Piera, 2007; Pittman & Fortin, 2004; Singh, 2003). However, no studies have looked at the relationship between corporate governance and the cost of capital in Saudi Arabia. Hence, this study aims to fill this knowledge gap and to evaluate the effects of corporate governance mechanisms on the cost of capital and financial performance for companies in the context of the Saudi Arabian economy. Saudi Arabia provides an ideal context for this study because it implemented a corporate governance code in 2006 which was influenced by international models. This code was developed to support the entry of the Saudi Arabian economy into the global market. Therefore, the goals of this study are to fully understand current corporate governance mechanisms in Saudi Arabia and to evaluate the relationships between corporate governance and the cost of capital and financial performance in one of the largest developing countries in the MENA region.

## **1.2 Motivation for the Study**

Poor corporate governance practices such as corporate disclosure and openness to external parties have been highlighted as causal factors for the Southeast Asian stock market crisis in 1997/1998 (Haniffa & Hudaib, 2006) and the failure of some of the developed world's largest companies such as Enron and WorldCom (Hussainey & Al-Najjar, 2012; Ntim, Opong, & Danbolt, 2012). These events have stressed the significance of effective corporate governance and have provided a focus for government policy and academic research (Aguilera & Cuervo-Cazurra, 2009). With its newly introduced corporate governance code, Saudi Arabia was chosen for the focus of this study because of its peculiar regulatory, cultural and economic characteristics.

Saudi Arabia, as an Islamic country, is strongly influenced by *Sharia* (Islamic) law (Hussainey & Al-Nodel, 2008; Judge, 2010; Safieddine, 2009), and the constitution is based on *Sharia* principles. The majority of the Saudi Arabian statutory rules also follow *Sharia* law (Al-Matari, Al-Swidi, & Fadzil, 2012). This means that Saudi Arabia has strong cultural and regulatory links with other Islamic and Arab countries (Piesse et al., 2012) but differs

from other developed and developing nations. All aspects of life in Saudi Arabia are affected by its links with Islam from business, law and politics to beliefs and ethics (Abu-Tapanjeh, 2009; Kamla, 2009). Islamic principles such as responsibility, equality, justice, honesty, charity, openness and kindness form the basis of Islamic rule (Rahman, 1998; Sarker, 1999) and activities which violate these principles are strictly forbidden, such as betting and racketeering (Choudhury & Alam, 2013; Lewis, 2005). Corporate governance in Saudi Arabia faces particular challenges arising from adherence to these Islamic principles, specifically with regards to the agency problem (Safieddine, 2009; Vinnicombe, 2010). One classic example of the effect of Sharia law on business practices in Saudi Arabia is the widespread use of financing techniques including ‘*Mosharkah*’ and ‘*Murabaha*’ (Kamla, 2009) because *ex-ante* charging or charging interest (riba or usury) is forbidden (Kamla, Gallhofer, & Haslam, 2006; Lewis, 2005). The Islamic influence on corporate governance makes Saudi Arabia an intriguing case study (Lewis, 2005; Safieddine, 2009).

One societal factor which affects corporate governance in Saudi Arabia is the hierarchical social structure (Al-Twajry, Brierley, & Gwilliam, 2002; Alshehri & Solomon, 2012; Haniffa & Hudaib, 2007). Social relationships including familial, ancestral and personal relationships play an important role in Saudi culture (Hussainey & Al-Nodel, 2008). Baydoun et al. (2013), while carrying out research for the Union of Arab Banks, found that many listed companies in Arab countries are family-controlled and normally hire from within the family. Therefore, employment is often awarded based on social relationships and familial allegiance as opposed to ability, skills and qualifications which can have a detrimental effect on corporate governance. In addition, ever since the Kingdom of Saudi Arabia was unified in 1932, it has been ruled by the king through a tripartite government with executive, legislative and judicial branches (Al-Matari et al., 2012). Therefore, there are not only familial and personal but also political influences on corporate governance. This influence is notably apparent in the appointment of company boards (Hussainey & Al-Nodel, 2008), particularly for public companies, and may have a detrimental effect on the autonomy and construction of the board. In addition, politics may also hinder the ability of corporate governance to perform its function in the wider Saudi Arabian stock market. There has recently been an increasing amount of research focussed on corporate governance in Islamic and Arab countries (Alsaeed, 2006; Baydoun, Maguire, Ryan, & Willett, 2013; Kamla & Roberts, 2010) as a result of their unique religious, social and political characteristics. These characteristics have a strong influence on the efficacy of many corporate practices including

corporate governance, accountability, disclosure, cost of capital and reporting of financial performance.

Another societal factor which can affect the efficacy of corporate governance and financial performance in Saudi Arabia is the lack of diversity in business ownership (Baydoun et al., 2013). This factor can affect business practices in a number of ways. Close links between company ownership and management can increase the significance of the agency problem (Jensen & Meckling, 1976), and can reduce board autonomy as board members are appointed based on familial and personal relationships (Baydoun et al., 2013). Research by the World Bank presented in their *Report on the Observance of Standards and Codes* (ROSC, 2009) showed that for many Saudi listed companies, the main shareholders were family members and government agencies. Government ownership was found to be particularly high, averaging 42% of the stock market value. In some cases, however, government ownership was in excess of 70%. This lack of diversity in ownership could curtail institutional investment and involvement from foreign investors (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002). It could also limit competition and thus the strength of market control as a corporate governance mechanism (Haniffa & Hudaib, 2006; Jensen & Meckling, 1976; Ntim et al., 2012). Thus, due to the previously mentioned factors that distinguish the business environment in Saudi Arabia, including the high concentration of ownership and the high superiority of family-controlled firms in the Kingdom, the present study would provide interesting results regarding the relationship between corporate governance and the cost of capital and firm performance. These results are different than those of studies conducted in developed countries.

The final reason for focussing on Saudi Arabia for this study is its unique position on the world's financial stage due to the combination of its recent growth and integration into the foreign market and its elevated status among developing economies (Al-Filali & Gallarotti, 2012). Since 2008, Saudi Arabia has been recognised as an important global player as a member of the G20 (Al-Matari et al., 2012). In 2010, studies of the Arab economy showed that the Saudi stock market made up a quarter of the total GDP and nearly half of the total market capitalisation for this region (Hearn, Piesse, & Strange, 2011; SFG, 2009). Saudi Arabia is an important oil producer as it owns a quarter of the world's oil reserves (OPEC, 2015) and in 2010 delivered almost a third of the total OPEC oil production. According to Al-Filali and Gallarotti (2012), Saudi investment in foreign markets in both developing and mature markets is significant. As a result, any failures in corporate governance in Saudi

Arabia could have a significant impact on the global economy. If corporate governance is not seen to be sufficiently strong and there is a lack of transparency in business practices, Saudi companies risk losing not only domestic but also foreign investment.

Despite their prominence as oil producers, the business and financial operations of the Gulf countries has not been the subject of much research to date. So far, studies focussing on Saudi Arabia have not examined corporate governance in its wider context (AlNodel & Hussainey, 2010). Research into corporate governance in Saudi Arabia has concentrated on correlations between the corporate governance practices and financial performance of individual companies (Al-Abbas, 2009; AlNodel & Hussainey, 2010; Alzharani et al., 2011; Ezzine, 2011; Safieddine, 2009; Soliman, 2013a, 2013b) and has found that good governance practices connected to ownership and board membership improve financial performance.

### **1.3 Objectives of the Study**

The aim of this study is to investigate the relationship between corporate governance mechanisms and the cost of capital and financial performance. This study focusses on non-financial listed companies in Saudi Arabia. A total of 84 companies listed on the Saudi Stock Exchange (Tadawul), were examined over the period of 2006-2014. This amounted to a total data set of 756 firm-years. Companies were chosen based on whether annual reports, financial statements and stock market information were available for the full period. Annual reports were obtained from either, the company's website, Tadawul's website or DataStream.

The objectives of this study are specified as follows:

- 1- To examine the relationship between corporate governance practices and the cost of capital.
- 2- To examine the relationship between corporate government practices and financial performance
- 3- To extend and further prior research by broadening the time period. This study covers the period from 2006 to 2014 (9 years in total) and extends the number of companies considered in comparison to previous studies to give a more generalised representation of the overall Saudi market.

- 4- To provide policy and practice input to help improve corporate governance practice in the country. The extended scope of this study both in terms of breadth and width will help achieve the study set objectives.

## **1.4 Significance of the Study**

This study examines the relationship between the implementation of corporate governance codes and the cost of capital and financial performance in non-financial companies listed on the Saudi Arabian Stock Exchange. The study considers a number of theories and approaches to corporate governance presented in the literature and helps expand the current literature and set new themes for future research in the area. Recent high profile corporate failures arising from deficient corporate governance practices have affected many countries worldwide (El-Mehdi, 2007; Leng, 2004; Eltony & Babiker, 2005), and highlighted the importance of good corporate governance to promote stability and help stop future economic and financial crises developing in the global marketplace.

This study is unique and timely since Saudi Arabia introduced its new corporate governance code in 2006, and this study aims to investigate the significant phenomenon of corporate governance and its effect on firms' cost of capital and financial performance in the post corporate governance code era. This will not only address the important interrelationship among the study set variables under the current/latest regulatory environment in the country but also help set a new agenda for future research in the area and steer future research to the most relevant and particular outputs. To date, there have been a limited number of studies examining the effects of corporate governance on financial performance (Ghabayen, 2012; Yaser & Denise, 2012) and these studies have focussed on data from a single year (2011) or the 4-year time period from 2006 to 2009. This study extends the scope of the previous studies both in terms of breadth and width to 9 years (2006-2014) covering a much larger number of companies listed on the Saudi Arabia Stock Exchange. Furthermore, it also examines the effects of corporate governance on firms cost of capital.

Saudi Arabia was chosen as the case study for this research for two reasons. First, Saudi Arabia is the first country in the Middle East to adopt a corporate governance code, and it is useful to understand how corporate governance has affected cost of capital and financial performance in this context. Second, Saudi Arabia is a market of great interest as it attracts domestic and foreign investment, particularly from Arab countries and the Gulf region, and

the study set objectives, once accomplished, will help ensure success in this area of economic development, not only for the country but also for the MENA region as a whole.

Saudi Arabia has done much in recent years to attract foreign private investment, particularly to support the government's privatisation programme which aims to attract investors from abroad (Al-Matari et al., 2012; AlNodel & Hussainey, 2010). Newly introduced financial institutions include the Saudi General Investment Authority (SAGIA) established in 2000, the Capital Market Authority (CMA) established in 2003, and Tadawul, the Saudi Stock Exchange, also established in 2003. Many Saudi-listed companies have not historically shown strong financial performance and have a high degree of block-holding (Al-Ghamdi & Rhodes, 2015). These issues will also be investigated as part of this research, particularly where directly relevant to the study's set objectives.

This study extends the scope of the current literature and aims to steer future research to the most relevant areas in the context of corporate governance. It examines the relationship between corporate governance and the cost of capital and financial performance in the peculiar context of Saudi Arabia recognising the effects of the recently changed local regulatory structures, the cultural and societal influences on company ownership and the composition of the board and the general market control mechanisms and influences. It aims to provide an improved understanding of the motives for various aspects of corporate governance practices aimed at improving the cost of capital and company performance.

It is expected that this research endeavour will show the benefits of an efficient and competitive capital structure and the resulting high firm performance, enhancing the knowledge of regulators and policymakers, shareholders and academics in the Middle Eastern countries, including Saudi Arabia, and encouraging them to implement best practices in order to improve the financial performance of the region's financial market. This study is also in line with the recent global interest of regulators in strengthening corporate governance practices around the world.

## **1.5 Thesis Outline**

This thesis comprises of eight chapters. The first chapter presents the general background for the study, discusses the reasons behind the research, and sets the main goals. It also demonstrates the significance of the study and how it fits within the current literature moving it forward and aiming to steer it to the most pertinent and relevant issues in the

peculiar context of Saudi Arabia. The final section of the chapter presents the overall structure of the thesis and outlines the way the thesis has been presented. The second chapter gives a contextual background to the study and sets a suitable scene for the following chapters. It reviews the economic environment in Saudi Arabia and gives a description of Saudi corporate governance practices including a discussion of the regulatory environment and current external corporate governance mechanisms in the country's operative business sectors.

A detailed literature review, which examines the theories and empirical research to date regarding the relationship between corporate governance and the cost of capital and financial performance, is presented in Chapter 3. It evaluates and elaborates on studies carried out in both developing and developed economies in the context of corporate governance. A number of corporate governance factors are examined in this chapter including:

- Variables associated with the board of directors: board size, board independence, board meetings and CEO duality
- Variables associated with the audit committee: audit committee size, audit committee independence and audit committee meetings
- Variables associated with ownership structure: block holder ownership, institutional ownership, government ownership and foreign ownership

The cost of capital is assessed using WACC and financial performance using ROA and the Tobin's Q ratio.

The fourth chapter explains what is meant by corporate governance for the purposes of this study and gives both general and more targeted definitions. It presents a theoretical context for the study, with particular attention to agency theory, and suggests that the agency problem may be one of the factors which could be addressed to improve corporate governance initiatives in the country. The significance of resource dependence theory and stewardship theory and their relevance to this study are also discussed. Finally, an overview of the theories used in the study and the pieces of information available in the literature which support this study's research hypotheses regarding the interaction between corporate governance and the cost of capital and financial performance, are presented.

The research philosophy and methodology employed in this study are presented in Chapter 5. The methodology and criteria for choosing the sample of companies used in this study are explained. Three classes of variables are defined and briefly elaborated on: independent, dependent and control. For each of these classes, individual variables are defined and explained, and details of how and from where the data was obtained are given. Finally, how the statistical analyses of the empirical data gleaned for the study were carried out, is presented.

The results of the study are presented in Chapter 6 followed by detailed statistical analyses of the study's empirical data. The implications of the results regarding the correlations observed between corporate governance mechanisms and cost of capital and company performance are discussed in Chapter 7. Conclusions based on the results are presented in Chapter 8 which also gives recommendations for future work.



## **Chapter Two: Corporate Governance in the Saudi Arabia Context**

### **2.1 Introduction**

In this chapter the corporate governance framework for Saudi Arabia is explored and reviewed providing information on the regulatory bodies and corporate governance legislation in this country. The chapter is set out in sections as below: Section 2.2 includes background and general information on the country's economy and economic performance. Section 2.3 gives background on the Saudi Arabian corporate governance structure and mechanism. Section 2.4 sheds light on the external corporate governance framework in Saudi Arabia. Section 2.5 includes a discussion regarding the regulatory system for corporate governance in Saudi Arabia. Section 2.6 provides a comparative analysis of corporate governance in Saudi Arabia and other developed and developing countries, and 2.7 summarises the chapter and highlights the main points discussed and issues raised in the chapter.

### **2.2 Background of Saudi Arabia**

Saudi Arabia is located on the continent of Asia in the southwest. It spans 2,100,000 square kilometres (868,730 square miles) and had a population of 24 million with a growth rate of 3% in 2006 (Al-Matari et al., 2012). The Kingdom of Saudi Arabia was founded in 1932 after King Abdul-Aziz unified several parts of the Arabian Peninsula. It has since become one of the most renowned countries in the Middle East after uniting under one flag. Saudi Arabia has a monarchy government run by the male descendants of King Abdul-Aziz (Al-Turaiqi, 2008; Al Angari, 2004). These leaders are responsible for organizing and coordinating the internal and external affairs of the country, as well as the three main fundamental branches of government - executive, legislative and judicial. It is important to note that Saudi Arabian laws are based on the Quran – the Islamic holy book. The Fundamental Governance System of 1992 in Saudi Arabia states that the governance of the country is based on “fairness, consultation and equality, pursuant to Islamic legislation” (Al-Rumaihi, 1997; MOFA, 2007).

It is important to understand the significance of the Islamic religion in Saudi Arabia. More than a billion Islamic people pray in the direction of the holy site of Mecca, which is

located in the Saudi city of Hejaz. Saudi Arabia is also home to the city of Medina, where the prophet Mohammed is buried. It holds an important position of prophecy in the Islamic world and annually attracts about 2.5 million Muslims to participate in the pilgrimage, known as the Hajj. In 1744, the political leader, Mohammed Ibn, Saud made an agreement with the religious leader, Sheikh Mohammed Ibn Abdulwahhab, to occupy the majority of the Arabian Peninsula and set up the first Saudi state. This was led by the House of Al Saud, where the name Saudi Arabia originates from. Islamic legislation was introduced at this time (Al-Rumaihi, 1997; Al-Turaiqi, 2008; Bowen, 2008) which has led to the Islamic religion having a very strong influence on life in Saudi Arabia.

Saudi Arabia also plays an important role as a member of the Gulf Cooperation Council (GCC), the League of Arab States (LAS), the Organization of the Islamic Conference (OIC) and the United Nations (UN). Although it is the world's largest producer of oil, it is completely dependent on this export and therefore is classified as a developing country. Up to 95% of the national income and up to 40% of the gross domestic product (GDP) comes from oil exports. According to the Ministry of Economy and Planning in 2007, Saudi Arabia will continue to be the largest producer of oil into the foreseeable future (MEP, 2007). In 2005, the OPEC recorded that the output for Saudi Arabia was 32% in 2004. The foreign direct investment inflows for Saudi Arabia were very low from 1990 to 2004. These investments increased rapidly from the middle of 2004 and went up to 145 \$ billion in the middle of 2008. This was followed by a significant decrease to 60 \$ billion nearing the end of 2011. There are suggestions that this decline was as a result of poor corporate governance, which was apparent and that showed through decline of the foreign direct investment inflows during the time period from 1990 to 2004 (OPEC, 2015).

To attract investors and stock market development, it is crucial for a country to have an efficient and well-functioning corporate governance structure (Kim, 2010). Positive corporate governance is comforting to both domestic and foreign investors because it sends the message that their investment is lower risk. For foreign investors, it is crucial to have a sense of confidence in the legal system protecting their property rights. Good corporate governance also improves the performance of companies, hence reducing risk for investors and increasing investment capital (Heenetigala & Armstrong, 2011).

Saudi Arabia is the size of the U.K., France and Germany put together, however it has very few natural resources due to its terrain, which is about 80% desert. Unlike other large

countries, Saudi Arabia cannot rely on resources produced by rivers and lakes. Prior to the discovery of oil in 1938, it was one of the poorest countries in the world due to this resource shortage. After oil prices skyrocketed in the 1970s, the rate of economic change in Saudi Arabia showed significant hike. This made way for the government to introduce a five-year plan to improve the country in many areas including education, healthcare and infrastructure. Without the discovery of oil, this would not have been possible for the Saudi people.

The stock market in Saudi Arabia is still classified as emerging due to its age and size; however, in 2005 it was ranked first for market capitalisation out of the developing countries. It continues to make reforms to the political system, as well as in social life and business (Alghamdi & Ali, 2012). For example, in 2005, Saudi Arabia joined the WTO after a long process of making reforms to the legal system (*Ministry of Commerce and Industry*, 2006). One of these reforms included the implementation of the Saudi Arabian General Investment Authority to attract local and foreign investors by overcoming weaknesses in the market and removing unnecessary difficulties (Falgi, 2009).

The business environment in Saudi Arabia is gradually developing in a positive direction after the implementation of several regulations. Several aspects have been improved, including the accounting and auditing professions as well as the Saudi Stock Exchange. This has slightly reinforced Saudi Arabia's economy; however, the reforms are not developing quickly enough to keep up with changes in the international business environment (Al-Matari et al., 2012). For continued reinforcement of the Saudi economy, several more reforms must be efficiently implemented. This would give Saudi Arabia a better reputation as a good market for investing in and hence it would develop a stronger and more stable position in the global economy (Al-Matari et al., 2012).

### **2.3 Saudi Corporate Governance: Background**

Before the 1980s Saudi Arabia had no formal stock or equity market system in place and the regulatory system was weak as was the stock market system itself and incapable of inviting in new investors and shareholders and keeping current ones safe (Al-Matari et al., 2012; AlNodel & Hussainey, 2010; Hussainey & Al-Nodel, 2008). The Saudi stock market first began in the 1930s with the creation of the first joint stock company and there were 14 listed public companies by 1975. From then on with the boom in oil and the subsequent growth in the economy there was significant growth in the number of banks and listed

companies. However, up to 1985 there was very little regulation of the stock market. Then the government instructed the Saudi Arabian Monetary Agency (SAMA) operated by the Central Bank to improve the stock market and introduce measures for regulating and policing the trading in the stock market. In July 2003, the CMA was created to take over this role (SFG, 2009; Tadawul, 2016).

The only compulsory legislation concerned with supervising and watching the actions of corporations and executives is the Saudi Companies Act which was issued in 1965 (Haniffa & Hudaib, 2007; Hussainey & Al-Nodel, 2008). However, this Act does not have wide-ranging powers and does not fully deal with corporate governance issues except for a few that concern board characteristics and the shareholders' general assembly. Al-Filali and Gallarotti, 2012 postulated that the economy of Saudi Arabia is an important one internationally and still growing. It has been noted in SFG, 2009 and Hearn et al., 2011 that the Saudi stock market estimated by 44% of the aggregate Arab market capitalisation and 25% of the aggregate Arab GDP in 2010. In addition, because of its fast growing economy and its importance Saudi Arabia has been a member of the G20 since 2008 (Al-Matari et al., 2012).

Al-Filali and Gallarotti, 2012 noted that in the 2000s, the standing of the Saudi economy regionally and internationally was not representative of the amount of listed businesses and the value of market capitalisation and as a result there was pressure exerted by a range of individuals including investors, academics and stock brokers to regenerate the stock market and implement a corporate governance system in Saudi Arabia (Alshehri & Solomon, 2012a; SFG, 2009). There were a number of proposals as to what to do including;

- Allow foreign investors boost the quantities of listed firms and increase market capitalisation
- Look after shareholders' rights by establishing proper corporate governance regulations.
- Augment disclosure and transparency
- Improv the corporate governance mechanisms, such as corporate control.

The World Bank, the IMF and the Organisation for Economic Co-operation and Development (OECD), which are all well-known global organisations started to push the new

countries entering the stock market world to create better governance codes and to prioritise corporate governance (Clarke, 2004; ROSC, 2009; Rwegasira, 2000).

Al-Matari et al., 2012 noted that in the early 2000s the Saudi government initiated a process of reforms in corporate governance which coincided with the general economic reforms already taking place. There were a number of new legal entities established such as the Supreme Economic Council, the SAGIA and the Saudi Stock Exchange (Tadawul) with the remit of increasing investment and stimulating the economy and its growth. It was noted by Al-Nodel and Hussainey, 2010 that the establishment of the CMA in 2003 resulted in essential corporate governance reforms.

The CMA has gone on to re-regulate the stock market and corporate governance regime (Alshehri & Solomon, 2012) and as a result the Saudi Arabian stock market has expanded rapidly and significantly in regards to the number of firms, market capitalisation, liquidity and visibility.

Over the period of 2004 to 2006 there were significant variations in stock activity within the Saudi market, with sharp increases in share prices in early 2004 which continued until Feb 2006 when there was a significant drop in share prices and by Dec 2006 over \$480billion (53% of market value) was lost. This rapid stock market crash provided the impetus for change and indicated that the corporate governance systems within Saudi businesses had to be improved dramatically. The main response from the CMA was to bring in the Saudi Corporate Governance Code (SCGC) in Nov 2006 and its main objective was to regain and improve the confidence in the market and more importantly provide a level of protection for investors (Al-Abbas, 2009).

## **2.4 The Saudi Arabia External Corporate Governance Structure**

In the early 2000s, the Saudi government created the following entities, the CMA in 2003, the Saudi Stock Exchange (Tadawul) in 2003, and the SAGIA in 2000 and it had already created the Saudi Organization for Certified Public Accountants (SOCPA) in 1992. The CMA is responsible for enhancing the corporate governance mechanisms used by business in Saudi Arabia, while Tadawul is responsible for the regulation and management of the financial market. In addition, the SOCPA and the CMA monitor the corporate governance mechanisms. These institutions (CMA, Tadawul, SAGIA, and SOCPA) were added to the ones already in existence which were the Ministry of Finance, created in 1932, the Ministry

of Commerce, created in 1953, the SAMA, created 1952, and the Public Investment Fund (PIF), created in 1971, which was to look after the external corporate governance structure for Saudi Arabia.

#### **2.4.1 Ministry of Commerce and Investment (MCI)**

The regulation of all listed organisations and their activities was the responsibility of the Ministry of Commerce and Investment (MCI) which was created in 1953. On its own it had the duty of regulating the activities of listed businesses and the institutions of the general assembly of shareholders. It created the Companies Act, 1965 which was designed to safeguard shareholders through a small number of corporate governance clauses such as describing the interests of shareholders and the make-up and the obligations of the board of directors. It also introduced the Public Disclosure Standard in 1990 which was designed to improve the process of voluntary disclosure and transparency but a large number of its monitoring responsibilities were given over to the CMA after the 2006 corporate governance reforms.

#### **2.4.2 Capital Market Authority (CMA)**

Hussainey and Al-Nodel, 2008, and Al-Matari et al., 2012 believed that the creation of the CMA in 2003 was an important and significant event in external corporate governance history for Saudi Arabia. It is answerable only to the prime minister and as a result it has the necessary authority to regulate the stock market and to make sure the reforms in corporate governance are implemented as quickly as possible. To date the CMA has developed seven regulations regarding corporate governance some of which are as follows; the 2004 Market Law, the 2004 Listing Rules, the 2005 Investment Funds Regulations, the 2005 Merger and Acquisition Regulations and the 2006 Saudi Corporate Governance Code. Its main areas of accountability are to develop and regulate the Saudi stock market and to improve the transparency and disclosure of listed organisations and the investors' confidence in the market. More recently, in 2017, the CMA has approved new corporate governance regulations for firms listed in the Saudi Stock Exchange (Tadawul) and it has replaced the 2006 version.

The CMA has developed three main corporate governance initiatives in three stages (ROSC, 2009) which are designed to augment the corporate governance methods used by Saudi businesses. The production of the Saudi Corporate Governance Code was the first stage. The second stage is still in process and concerns improving corporate governance

methods within listed organisations through initiatives which heighten knowledge and comprehension on the topic. The third stage involves reviewing the Saudi Corporate Governance Code so as to bring it into line with international corporate governance standards and practices and in doing so improve its efficacy. Furthermore, the CMA seeks to improve the efficiency of the corporate control process as an effectual external corporate governance tool as well as looking at ways to augment the internal corporate governance mechanisms and regulations.

#### **2.4.3 Saudi Stock Exchange (Tadawul)**

Since 1985 the functions of the Saudi stock market have been regularised and monitored but previous to that, especially in the 1930s the market was functioning informally. The first stock company listed was the Arabian Automobiles Company (Tadawul, 2016). By 1975 there were 14 listed businesses but the market was still unregulated until SAMA took over the obligation of ensuring the market was regulated and developed further. The market increased to 57 in 1990 and 75 in 2000 (SFG, 2009; Tadawul, 2016). The CMA was created in 2003 and since then it has worked on growing the stock market. As part of this it set up the Saudi Stock Exchange or the Tadawul, which is the regulatory organisation that manages the financial market. The Council of Ministers appointed a board of directors which comprised people from local brokerage businesses, listed organisations and legislators whose role is to provide a management and governance function.

#### **2.4.4 Saudi Organization for Certified Public Accountants (SOCPA)**

It is only since 1965 that there has been any legal requirement for listed businesses to have their financial statements independently audited to provide protection for shareholders. This indicates the newness of the accounting and audit sector in the country relative to its international counterparts (SOCPA, 2012). It was in 1974 that the first chartered accountants' act was passed, which played a very important role in regulating the accounting and auditing sector in Saudi and was monitored by the MCI. Haniffa and Hudaib (2007) noted that by the early 1990s, as there was no autonomous organisation to look after the sector, it had not developed as it should have so the SOCPA was created as a semi-independent body in 1992 (Alsaed, 2006). Its job is to grow the accounting and auditing sector as well as provide a monitoring function. Its main functions are as follows;

- Reorganising audit businesses
- Awarding licenses

- Monitoring quality

The 1974 Chartered Accountants' Act was updated and improved in 1992 and it was recognised by the International Federation of Accountants (IFAC) in 2006 (SOCPA, 2012). In addition, IFAC, out of sixteen different organisations, chose SOCPA to assist in the development and growth of the accounting and auditing sector. It has been noted by Alsaeed (2006) that SOCPA has helped in increasing confidence in corporate governance disclosure and the dependability of corporate annual reports as well as playing a role in improving the quality of the audit businesses.

## **2.5 Saudi Arabia's Corporate Governance Regulations**

According to Al-Abbas (2009) and Haniffa and Hudaib (2007), the 1965 Companies Act was responsible for all regulation regarding Saudi listed companies' corporate governance activities until around 15 years ago. Over the years that have followed, various reforms have been aimed towards the enhancement of Saudi companies' internal corporate governance systems. One of the main aims of this thesis is to explore the association that exists between corporate governance and the cost of capital. Additionally, another aim of this paper is to explore the association between corporate governance and the financial performance of companies. Saudi Arabian companies have long operated under three core corporate governance regulatory frameworks: The Companies Act, Tadawul's Listing Rules, and the Saudi Corporate Governance Code. The following parts of this chapter present a thorough overview of the internal corporate governance practices and procedures that these regulatory systems suggest.

### **2.5.1 The Saudi Corporate Governance Code (SCGC)**

One of the key forces behind the effective execution of corporate governance procedures amongst Saudi Arabia's listed companies is the SCGC, which will be extensively outlined in this section of the thesis. There are four key areas of consideration within the SCGC. The first is shareholders' rights. The second is general assembly. The third is transparency and disclosure. Finally, the fourth area relates to the board of directors (SCGC, 2016).

The SCGC begins by offering a number of essential definitions of relevant terminologies. It also defines the nature of the connection between the SCGC and other forms of legislation. Thus, the first section of the SCGC focusses on offering initial provisions. Under Article 1 of the SCGC, the SCGC's primary aim is presented. Here, it is made clear that the purpose of



the SCGC is to ensure that Saudi companies adhere to corporate governance criteria through the application of regulatory measures. Under Article 1b of the SCGC, it is conveyed that all public companies listed on the stock market in Saudi Arabia should look to the SCGC as the leading set of guidelines. Thus, it is declared that any firm choosing not to implement a certain provision within the SCGC must provide an acceptable justification to the regulator as part of the company's annual report (SCGC, 2016).

Provisions for general assembly are presented in the second section of the SCGC, as is the topic of shareholders' rights. Here, it is stated that the core consideration with regards to the latter is to support shareholders' ability to access information whilst also supporting their ability to exercise their rights. With regards to provisions about general assembly, it is stated under Article 5a of the SCGC that general assembly must take place no longer than six months after the end of the firm's financial year. It is also stated that the proposed general assembly agenda, location and date should be shared no later than 20 days before the assembly is due to be held, and that the firm's official website should broadcast an invitation to the assembly, as should the website of the Saudi Stock Exchange. It is also stated that the managers of the firm should ensure that they invite as many shareholders as possible to take part in the general assembly, as outlined under Article 5e. In the event that a shareholder cannot make the meeting, the shareholder is given the right to choose a representative to attend the meeting. This representative must also be a shareholder but cannot be a company employee or member of the company's board. Under Article 5f of the SCGC, it is also highlighted that shareholders should be able to be involved in the creation of the agenda for the general assembly if they so wish. Consequently, all shareholders with 5% shares (or higher) should be able to provide a list of issues for the board of directors to address during the assembly (SCGC, 2016).

Article 4b of the SCGC states that shareholders should be given the option to fully exercise their rights by being offered complete access to information (with biannual updates being provided thereafter). This must be offered in a way that is convenient for the shareholders and enables them to see the entire picture. Consequently, it is clear that the SCGC supports the minimisation of information asymmetry. Furthermore, it is stated that information about general assembly outcomes should be shared via the Tadawul website in order to notify the stock exchange of decisions in a timely manner (Article 5j). This guideline is particularly important in the case of price-sensitive information, which should be delivered immediately. Information sharing is enforced by the risk of penalty under the SCGC.

Under Article 6b, it is stated that a one-share-one-vote policy number 13 should be used to incentivise the highest number of small shareholders to participate in the decision-making process regarding key issues (e.g. board member selection). Dividend rights are also emphasised, with Article 7 stating that the general assembly is the place in which to address the company's dividends policy with shareholders. It should be mentioned that the Saudi Corporate Governance Index (SCGI) outlines all provisions regarding the general assembly and the rights of shareholders. This is reflective of 8 provisions within the 65 corporate governance provisions offered (that is, 12% of all provisions) (SCGC, 2016).

Disclosure and transparency are the main topics highlighted in the third section of the SCGC, with Article 8 emphasising that all provisions outlined in this section of the SCGC complement the provisions outlined under Tadawul's Listing Rules. It is also stated that the company's annual report should include the names and titles (i.e. independent non-executive directors, non-executive directors, and executive directors) of all board members in order to ensure that the board is as independent as possible (Article 9).

Issues related to the directors and board are highlighted in the fourth section of the SCGC. According to some scholars, the representation of shareholders' interests reflects the key purpose of the board of directors' existence (BERLE & Means, 1932b; Davidson, Nemeč, & Worrell, 1996). Consequently, the SCGC outlines the board's role at length, dividing this into the board's primary functions, key responsibilities, composition, sub-committees, and meetings. These subcategories are outlined below (SCGC, 2016).

The first role of the board, according to the SCGC, is to increase corporate value (in order to serve the interests of the shareholders) whilst lowering agency costs. This should be achieved by implementing a detailed and effective strategy, determining of risks, implementing of an effective risk management policy, and reviewing and amending existing corporate policies and strategies. Furthermore, the SCGC asserts that when managers fail to fulfil company objectives, the board should ensure that the managers in question are held responsible for their decisions. Additionally, the board's role is to ensure that the implementation of such measures is monitored consistently. The SCGC also suggests that internal governance systems should be put into place so as to achieve effective governance within the company whilst still complying with the SCGC (Article 10b), and that the compliance of employees and executives should be monitored by the board (Article 10e). Additionally, it is stated in the SCGC that rights should be adequately protected by the

formulation of regulatory documentation regarding the company-stakeholder relationship by publicly listed firms (SCGC, 2016).

The board of directors' duties are discussed next, with the SCGC indicating that the top priority of the board should be to represent the interests of all of the company's shareholders at all times – that is, not only those shareholders with the highest degree of influence, but also those with low influence. One of the ways in which this can be achieved is for board members' information-sharing behaviours to be monitored by the chairperson of the board. This helps to ensure that all shareholders are able to access information promptly and without preferential treatment. It is especially important that information is able to be accessed by independent and non-executive board members in order to support them in fulfilling their obligations to shareholders. Article 11a asserts that even if third parties or sub-committees are responsible for a number of decisions, the board is still responsible for running the firm overall. Thus, it is essential that the firm's articles of association state the responsibilities of the board with no uncertainty (Article 11b) (SCGC, 2016).

Board composition is the next focus of the SCGC. Here, it is suggested that the number of board members should be at least three but no more than eleven (Article 12). Article 12 also recommends that non-executive directors represent the main proportion of the total board and that there should be at least two independent board members (or at least one independent member for every two other board members). As long as they are not serving the board for more than three years, the general assembly should be in charge of selecting the members of the board. The termination of one or more board members is also stated to be in the hands of the general assembly. Under Article 12g, it is additionally stated that the firm must explain any dismissals or resignations to Tadawul and the CMA.

The SCGC suggests that the board offer separate titles of chairperson and CEO in order to ensure that the board is best able to monitor the performance of the company. It is also preferred that the chairperson is not also a non-executive director (Article 12d). Article 12h further provides that board members can represent a maximum of five listed companies simultaneously. This measure is designed to ensure that the responsibilities of directors can be carried out effectively (SCGC, 2016).

The next topic covered in this section of the SCGC is board sub-committees. Specifically, this section discusses the issues of sub-committee independence and formulation. Under Article 13, it is stated that committee members should be appointed based on the needs of the

firm in order for the board of directors to fulfil its obligations effectively. All listed companies are advised to set up different committees for the purposes of remuneration, nomination and auditing. These committees are obligated to be entirely transparent with the board about what they decide, what they have discovered and how they are performing. Furthermore, committee performance should also be monitored by the board. The SCGC dictates that each committee should comprise an adequate proportion of non-executive directors, since this is one of the fundamental aspects of corporate governance principles (SCGC, 2016).

The SCGC asserts that there should be at least three members in the audit committee, with at least one of them an expert in the areas of accounting and finance equally. Additionally, no audit committee members should be executive board members. The primary role of the audit committee is to oversee the auditor's perspective on financial reports, nominate an independent auditor and determine his/her remuneration and oversee the audit and control system of the firm (Article 14c) (SCGC, 2016).

Board meetings are discussed in the final section of this part of the SCGC. Under Article 16 of the SCGC, it is stated that meetings should be attended by all board members when possible, and that the obligations and tasks of all board members must be fulfilled and completed. Other meetings should be held frequently, and minutes should be taken. The board must also note all voting activities and decisions. Since the board's mechanisms are fundamental to corporate governance, they are highlighted strongly in the SCGC. Consequently, the SCGI's corporate governance provisions primarily comprise the board's, directors' and sub-committees' functions and responsibilities. These provisions represent 35 out of 65 corporate governance provisions given in the SCGI, which reflects 54% of all corporate governance provisions (SCGC, 2016).

### **2.5.2 Tadawul's Listing Rules**

The formation and enhancement of regulations on corporate governance has been the primary objective of the CMA since 2003, when it was first created. Many believe that the goal of transforming Saudi Arabia's corporate governance regulations is becoming closer to being met as a result of the presentation of Tadawul's Listing Rules in 2004, which firstly attempt to minimise asymmetric information by setting a requirement for complete transparency and information sharing. Here, it is stated that listed companies are obligated to

report any significant operational changes to shareholders and the CMA (Article 25a) (CMA, 2016).

The second point that the Rules address is associated with the annual report produced by the board, which must be shared on the Tadawul website as well as in all leading Saudi newspapers (Article 27a). Listed firms' operations from the previous financial year must be reviewed by the company, and firms must disclose any information that may assist investors in evaluating the future performance of the firm. Consequently, the Rules state that the following points should be included in the report: an outline of the firm's main business activities; an outline of any major risks, potential future opportunities, decisions and plans; an overview of the company's outcomes, liabilities and assets (presented as a chart or table) for the previous five-year period; justification for any marked variances between the financial year-on-year operational results of the company; an outline of the dividend policy adopted by the firm; and a thorough presentation of all debts and loans acquired by the company (CMA, 2016).

The third topic covered in the Rules is transparency regarding ownership. Specifically, firms must state the names of any shareholders (including directors, managers, external parties and all associates) with a 5% or greater share (Article 27/10) in order to avoid the agency problem. Furthermore, should any amendments be made to shareholders' rights and interests over the previous financial year, firms have an obligation to share this information with their shareholders. It is also provided that the report presented by the firm should incorporate a thorough overview of any CFO, CEO or board director (or the family members of any of the three parties) interests in contracts or transactions that the company has been involved in. This provision exists in order to minimise the risk of insider exploitation and maximise transparency (Article 27/17). Additionally, it is stated that the annual board report should detail the names of all parties attending each meeting along with the number of board meetings held so that the effectiveness of the board may be accurately assessed (Article 27/16) (CMA, 2016).

Article 27/22 of the Rules dictates that firms should ensure that they provide a number of supporting statements with their annual reports. These statements should offer assurance on the following points: 1) that the firm has a formal accounting system in place; 2) that the firm's internal control system is effective, legitimate and has been implemented successfully;

3) that the firm has good prospects for the future with no noteworthy concerns; and 4) that justifications are given for any suggested change to any third-party auditors.

Trading by agents is forbidden under Article 33 within certain constraining parameters. Here, it is stated that the trade of securities cannot be executed by any executive managers, directors or their associates firstly until 10 days have passed after the end of the financial quarter and until the firm's quarterly performance has been officially declared, and secondly during the 20 days leading up to the end of the financial year and until the firm's annual performance has been officially declared. Additionally, Article 36 states that the firm must present documentation that outlines the remuneration packages given to directors and executives. This must then be reviewed and passed by the general assembly in order to ensure that it is sound (CMA, 2016).

### **2.5.3 Saudi Companies Act**

The Companies Act was first promulgated in 1965. It was founded upon the provisions of the 1948 British Companies Act (Kantor, Roberts, & Salter, 1995). The Companies Act represented the country's initial effort to ensure that the business activities and operations of Saudi firms were effectively regulated. In 1982 and 1985, significant amendments were made to the Act. The original act of 1965 emphasised the shareholders' interests and rights along with board composition and attributes. Whilst not extensive, the original act did cover some number of corporate governance issues (Hussainey & Al-Nodel, 2008; Shinawi & Crum, 1971).

In reference to the structure of the board, the Act addresses board size, the association between the chairperson and CEO, the authority of the board, the annual report generated by the board, and the regularity of board meetings. It is stated that the board should comprise at least three members, chosen as per the firm's articles of association, and that it has the authority to manage the firm (Article 66). As long as they are serving for no more than three years, the general assembly is responsible for selecting board members, although the specific composition is not within the jurisdiction of the board (unlike the provisions of the SCGC). Thus, the board is not in control of the number of non-executive or independent members either of the board, or of their presence on the board, lending companies greater freedom to determine the board structure that best fits with the firm's articles of association. Furthermore, the CEO and chairperson are permitted to be one and the same under Article 19 of the Act. The Companies Act also makes no mention of the quantity of sub-committees

required or the function that they should play (although this was amended by the prime minister in 1994 in order to offer greater protection to shareholders by requiring the establishment of an audit committee) (MCI, 2014).

Additionally, all publicly listed firms must combine a third-party audit report, key financial statements and board report in an annual report (Article 89). This must be published in all national newspapers sold in the company headquarters' city in order to allow shareholders to access the information. The Act also asserts that board meetings should be held as often as the chairperson decides (Article 80), or if two or more directors request a meeting regardless of whether this complies with the firm's articles of association. As long as at least three individuals attend (i.e. at least 50% of members), a board meeting is considered to have been held. Representative board members may take the place of any absent directors if appointed by the absent director (MCI, 2014).

Under Article 69, it is stated that the general assembly must approve all contracts and transactions between directors and the firm, necessitating annual renewal for contracts of over 12 months in term. It is also forbidden for members with vested interest in a specific issue to participate in voting on that issue, although members' vested interests should be declared in the general assembly by the chairperson. Remuneration is also addressed, with Article 74 providing that directors should be remunerated with either a share of the firm's profits or a single bonus payment (or both) with a cap of either 10% of net profits (divided between members) or \$53,000 (per director). The lowest figure is the amount permitted for remuneration (MCI, 2014).

The protection of shareholders' rights and investments is also addressed by the Act, which provides that those with 20 or more shares should be permitted to participate in general assembly meetings and discussions regarding the performance of the firm (Article 87). Non-director shareholders can be chosen by the shareholders as representatives in case of absence (Article 83). It is also asserted that general assembly meetings must take place annually, although they can be held more often. In either case, they must be held within six months of the end of the financial year (Article 84). Furthermore, the annual report should be shared 60 or more days prior to the general assembly meeting in order to allow sufficient access for shareholders. Finally, the location, time, date and agenda of the meeting must be published in at least one daily newspaper 25 or more days prior to the date of the meeting (Article 88) in order to facilitate shareholders' participation (MCI, 2014).

## **2.6 Comparative Analysis of Corporate Governance in Saudi Arabia and Other Global Regions**

Corporate governance in developing countries appears to be a somewhat revolutionary concept, within the context of ineffective approaches to professional management, limited human resource capacity and poor investor confidence, combined with weak legal and judicial systems (Mulili & Wong, 2011). The findings emerging from the majority of earlier studies have shown that corporate governance structures in developing countries are characterised by a lack of authority and inconsistency. The major economic crisis in 2008, coupled with the influence of global financial institutions, for example, the World Bank, has been the impetus for a number of developing countries, including Saudi Arabia, Egypt and South Africa, to seek to develop their corporate government laws and regulations. Aylin and Crowther (2008) have highlighted that the World Bank and the International Monetary Fund (IMF) have stipulated that the provision of financial assistance to developing countries is contingent upon the implementation of specific structural adjustment programmes. This necessitates that fundamental reform occurs in corporate governance processes. Globally, two key determinants have been identified as affecting corporate governance practices. These include: investment protection or guarantees to safeguard investments; and ownership structures, defined as the distribution of equity and the identification of equity owners. According to Aylin and Crowther (2008), high levels of ownership structure concentration have been permitted in emerging market economies, because family business ownership management is prevalent in these countries, resulting in weak rules of law pertaining to property rights.

Typically, in the majority of developing countries, standards and practices have been put in place regarding ethical business dealings. In addition, laws and regulatory frameworks have been established to safeguard investors and to ensure that they fulfil their legal responsibilities, with sanctions imposed for non-compliance. Nevertheless, deficits in the execution of effective corporate governance systems are evident. This can be attributed to the absence of robust monitoring procedures, the espousing of inappropriate practices and the weak enforcement of policies, legislation, standards and regulations (Donaldson, 2012; Mande, Ishak, & Idris, 2014). Accordingly, for corporate governance systems to operate effectively, legal and regulatory frameworks need to be established to ratify standards and practices. Furthermore, the creation of authoritative structures for imposing these rules and regulations is required, as is the provision of high quality monitoring systems. Okpara and



Kabongo (2010) have observed that although legislative structures are in place to support corporate governance in developing countries, the enforcement of adherence to them are either poor or totally absent. Trivun and Mrgud (2012) found evidence suggesting that in developing countries, greater benefits can be derived from the enforcement of existing laws rather than from the passing of new legislation.

In developing countries, the nature and extent of publically listed companies' voluntary disclosures revealed in written form, for example, in annual reports and on official websites, are typically very limited (Aylin & Crowther, 2008). The latter have claimed that inadequate disclosure, insufficient honesty and unscrupulous activities are significant obstacles preventing economic advancement, prosperity and security in these nations. Okpara and Kabongo (2010) have stated that a major legislative review is urgently warranted. In addition, they have recommended that a regulatory body be established, with a clearly defined role and powers to compel compliance through effective enforcement systems.

In Saudi Arabia, the 21 century has witnessed growth and advancement in the Saudi stock market, coupled with a stronger focus on corporate governance among leading financial consultants and academics. This has resulted in a greater willingness of businesses to implement corporate governance processes. Saudi Arabia is making continuous strides to facilitate the endorsement of international standards on auditing and accounting practices. Al-Qarni (2010) has argued that this will assist in gaining the support of firms, as well as in keeping them apprised of the impending implementation of corporate governance systems. As a result, the country has engaged in a major transformation of its corporate governance processes from the perspective of being honest, equitable, liable and responsible.

Saudi Arabian's Capital Market Authority has stipulated that every publically listed company on the Tadawul (Saudi Arabian stock exchange) will be required to comply with these laws. They must also introduce the voluntary disclosure of information through annual reports and other written documentation (Al-Qarni, 2010). Nonetheless the comprehensive regulatory quality improvement measures put in place, along with the Capital Market Authority's rigorous monitoring mechanisms, high level of non-conformity and substandard performance levels persist Tadawul-listed companies. In addition, variations in the interpretation of the regulations were found to occur, subsequently resulting in some listed firms' adopting different approaches, as compared to others. In light of this, it is imperative that regulatory authorities in Saudi Arabia adopt and enforce, through the legislature, a consistent approach that rigidly conforms to the execution of rules and regulations regarding corporate governance.

The majority of Saudi Arabian-based companies have some unique defining traits, and a number of these affect their capacity to embrace corporate governance systems. For example, similar to numerous other Middle Eastern countries, Saudi Arabia has high levels of ownership concentration, coupled with a strong preponderance of family-controlled companies. Almost all firms fall under the ownership of families, directors, executives, government, agencies or by foreign investors. Combined owner-manager arrangements typically occur, as owners are generally reluctant to entrust others with management role. Consequently, power converges with key, influential shareholders predominantly held it. In reality, shareholders preside over boards of directors, and the latter's capacity to carry out their duties in a productive and constructive manner is unquestionable. Piesse et al. (2012) also highlighted that, within this context, other stakeholders seem to assume a peripheral role in day-to-day operations, as well as in meeting legal requirements. Therefore, corporate governance systems in Saudi Arabia differ from those operating in developed countries. This can be attributed to insufficient transparency, the inadequate voluntary disclosure of information and high levels of ownership concentration, with accompanying capacity to exert strong control.

## **2.7 Conclusion**

In this chapter, Saudi Arabia's corporate governance was explored, beginning with an overview of the background of the topic and moving on to an exploration of the external system for corporate governance within the country. This chapter determined that the four key representatives of this system are Tadawul, SOCPA, CMA, and MCI. Also, a comparison between corporate governance in Saudi Arabia and in other global regions was provided. Corporate governance systems in Saudi Arabia are characterised by low levels of transparency, the insufficient disclosure of information, and high levels of block ownership. Following this, the chapter discussed Saudi Arabia's corporate governance regulatory system, extensively presenting information on SCGC, Tadawul's Listing Rules, and the Companies Act. Corporate governance in Saudi Arabia is characterised by firms controlled by family and block ownership. Even though comprehensive regulations have helped to move forward corporate governance in Saudi Arabia along with tough supervision by CMA, the firms listed on Tadawul have implemented corporate governance regulations differently. Recently, CMA developed new corporate governance regulations for firms listed on Tadawul. Its goal was to improve the old version by providing both shareholders and boards of directors with better rights and to enhance the transparency regarding their duties. A review of the existing

literature on the association between corporate governance and cost of capital, as well as between corporate governance and companies' financial performance, is provided in the following chapter.

## **Chapter Three: Literature Review**

### **3.1 Introduction**

This chapter investigates the previous literature and past evidence regarding the relationship between corporate governance and both cost of capital and financial performance. The chapter is structured as follows: section 3.1 provides literature on the relationship between corporate governance and cost of capital, whereas previous literature related to the relationship between corporate governance and financial performance is illustrated in section 3.2. In section 3.3, the conclusion of the chapter is provided.

### **3.2 Corporate Governance and the Cost of Capital**

Corporate governance has been demonstrated to have a substantial connection with the cost of capital, which decreases with stronger governance (Bhojraj & Sengupta, 2003). Based on theory, agency risk is dramatically increased when corporate governance is poor, and therefore the cash flow for the firm is less certain, making the firm less attractive (Bhojraj & Sengupta, 2003; Jensen, 1986; Jensen & Meckling, 1976). Prior research in this area of study has used both corporate governance variables and corporate governance guides, such as a corporation's governance quality to identify its effect on the cost of capital measure. The current study will review, separately, the impact of corporate governance on the cost of capital, including the COEC and the cost of debt (COD).

#### **3.2.1 Corporate governance and the cost of equity capital**

Research on US firms demonstrates that corporate governance can influence the COEC (Ashbaugh, Collins, & LaFond, 2004). Four attributes of governance were selected for the research: first, the quality of the financial information the firm provides; second, the firm's ownership structure; third, the shareholders' rights; and fourth, the board structure. These governance structures are in place to minimise the likelihood of poor moral decision-making or of the types of selection problems common in publically listed companies. The study of US companies assessed the effect on cost of capital by first using the target method, which relies on the expected returns over the fiscal period (Botosan & Plumlee, 2002; Francis, Khurana, & Pereira, 2005), and then the price/earnings to growth ratio (PEG ratio) (Easton, 2004). The overall governance risk is highlighted using a composite corporate governance score. The study concluded that governance attributes directly and significantly

affected the COEC, and an indirect effect on the COEC via systematic risk  $\beta$  was also found. A compound corporate governance score for a corporation produce the organisation 's overall governance peril. By and large, such an investigation showed that the governance qualities inside and outside of the organisation affect the corporation's COEC. Furthermore, it has been suggested that through earnings growth, the larger part of the corporate governance properties is basically associated with the COEC (Easton, 2004).

A study examined the influence of firm-level discrepancy in shareholders' rights at on the *ex-ante* COEC by using a sample of 8,836 listed companies over a 12-month period (Huang, Cheng, & Collins, 2006). Shareholders' rights refer to companies' ability to dispose of managers' positional rights. In the study, feeble shareholder rights showed that poorly performing directors were capable of instituting themselves within the company. This tended to increase the cost of capital (Huang et al., 2006). A potential hypothesis is that susceptible shareholder rights creates job protection amongst managers. For this, reason managerial bias is reduced and managers are encouraged to assign finances to useful long-term projects. This action enables the cost of capital to be reduced within the business enterprise. The governance score (G-score), which was adopted from Gompers et al. (2003), and referred to as the GIM Index, represents the volume of shareholders' rights. The GIM Index consists of five dimensions: (1) the processes for delaying adverse bidders (2) voting rights, (3) director/officer protection, (4) other takeover defences and (5) state legal guidelines (Gompers, Metrick, & Ishii, 2003).

Each provision of the GIM Index that restricts shareholder rights concurrently increases managerial energy, and, thus is identified as one factor. Hence, a high G-rating indicates a weaker level of shareholders' rights in a company (Gompers et al., 2003). The COEC estimation for a company is based on the Ohlson and Juettner-Nauroth (the OJ version) (2005) extraordinary earnings-based valuation model. According to this model, the use of both pooled and cross-sectional regression strategies results in weaker shareholder rights (obtaining a better G-rating) which are associated with a substantially better COEC (Ohlson & Juettner-Nauroth, 2005). Their research identified a stronger affiliation between the G-rating and the trade in COEC. The results guide the belief that weak shareholder rights result in a higher corporation fee, whereas an efficient marketplace captures this effect in the COEC.

Using Gompers et al.'s (2003) data from 1992 through 2002, a study investigated the consequences of firm-stage shareholder rights in 281 US firms, using eight COECs (Cheng,

Collins, & Huang, 2006). In their study, the OJ model was used to estimate the COEC. The delegation for the shareholder right stage is a changed form of the GIM Index. Their findings imply that the level of power of shareholder rights is significantly connected with the COEC (Cheng et al., 2006). Moreover, the consequences stemmed from the protection and vote casting right dimensions of the GIM Index. The protection measurement included four provisions; that included more than six items, clean test, contracts, golden parachutes, indemnification, liability and severance. The protection provision essentially defended administrators and managers against criminal legal responsibility and compensated them for process severance. The vote casting right measurement included six provisions; bylaws, constitution, cumulative voting, secret poll, supermajority and unequal balloting. The balloting right provisions specified the shareholders' voting rights by endorsing mergers, appointing directors and amending bylaws and charters. In reality, the degree of the weak (strong) company-level shareholder rights were related to better (lower) COECs. These findings suggested that the COEC could be reduced through the use of strong shareholder rights. Investors are more likely to use a higher discount rate, or COEC, for cash flow when a firm has a high agency cost, rather than when they have strong shareholder rights (Cheng et al., 2006).

Using a multi-country approach, Battacharya and Daouk (2002) examined the effect of the insider buying and selling legal guidelines and its enforcement on the COEC in 103 international locations. The presence of rampant insider buying and selling appears to affect the COEC in two ways. First, it creates liquidity by which traders increase the selling fee and lower the purchase price. This method is called the 'rate guard approach'; which can increase transaction fees and in the long run affect the COEC. It is a way of controlling large shareholders' increased income through holding insider knowledge instead of exercising tough and useless monitoring activities frequently. The authors measured the impact of insider trading variables on the COEC by using four tactics; an examination of the event, the global asset pricing factor model, an adjustments of the dividend yield, and the credit score rating. They identified that merely having insider trading legal guidelines no longer has an effect on the COEC. However, the strict enforcement of these legal guidelines was notable in the sharp fall within the COEC (Bhattacharya & Daouk, 2002).

A study investigated the effect of company-level disclosures using corporate governance (non-disclosure variables) and firm-stage investor safety variables on the COEC (Chen et al., 2003). Their research looked at 545 companies in nine Asian locations between

2001 and 2002. The COEC estimation was primarily based on the residual income valuation (RIV) model, whereas the corporate governance variables were adopted from the outcomes of two surveys from Credit Lyonnais Securities Asia. The conclusive results highlighted that all three corporate governance variables were negatively associated with the COEC. On the other hand, the company-degree governance variables had more of a one of a kind effect on the COEC than on the disclosure variables. In addition, state-level investor safety was likewise determined to be a full-size predictor of the corporations' COECs. Thus, strong investor safety accords extra safety through proper security and helps to eliminate managers or controlling shareholders' expropriation of wealth (Chen et al., 2003).

In 2002, Hail and Leuz (2006) tested the impact of a nation's felony establishments and securities rules towards the COEC. They showed that corporations from nations with more potent securities policies and stricter disclosure enjoyed a less expensive cost of capital. Their sample involved 35,118 company-year observations from 40 nations for the 10 years from 1992 to 2001 (Hail & Leuz, 2006). A number of scholars reported that the COEC approximation was based on the residual income valuation version (Claus & Thomas, 2001; Gebhardt, Lee, & Swaminathan, 2001; Gode & Mohanram, 2003; Ohlson, 1995; Ohlson & Juettner-Nauroth, 2005). Using the corroborative theory, it can be asserted that firms from distinctive international locations with reasonably powerful prison machinery, together with extensive disclosure requirements and sturdy securities guidelines appear to have fewer COEC outcomes. A study examined the impact of the board size on the COEC among 114 listed companies in the Karachi Stock Market in the period of 2003-2007. The study revealed a significant negative relationship between board size and cost of equity (Shah & Butt, 2009). Recently, a study in Germany on the relationship between corporate governance and COEC reported that high levels of corporate governance are associated with a lower COEC (Kaspereit, Lopatta, & Zimmermann, 2015). Likewise, in Latin American, a study reported a significant negative relationship between board size and COEC (Teti et al., 2016).

### **3.2.2 Corporate Governance and the Cost of Debt**

A number of scholars in the French context, noted that the first corporate governance rating and the auditing shape of public corporations lower the cost of debt (Piot & Missonier-Piera, 2007). For example, corporate governance high-quality was represented by the number of unbiased directors on the board, the presence of a reparations committee composed of non-executive administrators, and the presence of institutional shareholders with more than five percent of ownership. France has an interesting banking and corporate structure, which was

the motivation for this research. French banks or other institutions are the primary provider of capital; however, the capital provider does not influence the corporate governance structure that a firm uses. Therefore, a capital provider will desire to see that the firm has comprehensive monitoring mechanisms and accurate financial reporting prior to providing the capital, as this reduces its risk premium. Hence, the authors used the common interest of a company's debt calculated as its interest rate for 12 months divided by its common monetary debt in the identical 12 months. This methodological approach to measuring the COD is similar to the technique that Francis et al. (2005) used. This latter research found that three corporate governance traits showcased a widespread reduction in the impact on the COD: (1) the board's involvement in the tracking of the corporate governance's internal troubles, (2) the tracking power of institutional traders, and (3) the board's independence (Francis et al., 2005).

Schauten and Blom (2006) have empirically examined the effect of corporate governance on a company's COD based totally on the indication that debt holders take a company's corporate governance into consideration in their assessment of its risk profiles while also estimating the company's default dangers (Schauten & Blom, 2006). This view is similarly supported by using the argument that the risk profile determines the specified return with the aid of debt holders, which in reverse is the company's COD. A number of previous studies (for instance, Francis et al., 2005; Sengupta, 1998) found that when default risks were excessive, the COD would agreeably be high (Schauten & Blom, 2006). This basically replicates Sengupta's (1998) findings, namely, that corporate governance is negatively associated with the COD. The authors utilise the Deminor score as a proxy for an agreement with the overall corporate governance performance of the 300 biggest European corporations (FTSE Eurotop 300). These ratings were divided into four attributes: (1) rights and duties of shareholders (2) range of takeover defence, (3) disclosure of corporate governance and (4) board shape and functioning. The findings were congruent with Sengupta's (1998) results, which were that the proxy for the COD was the ensuing yield of 77 bonds issued in 2001.

Klock et al. (2005) examined the usage of the firm-rating information from the Investors Research Responsibility Centre (IRRC) for the period of 1990 to 2000. The authors used the connections between a governance index that contains diverse anti-takeover and shareholder safety provisions as a measure of corporate governance. They discovered that robust anti-takeover governance elements lower COD financing (Klock et al., 2005). Conversely, vulnerable anti-takeover provisions are associated with a higher COD. Hence,



even if the anti-takeover provisions can be highly-priced for shareholders, they can be a useful device for shielding bondholders' interests.

Another study investigated the connection between an audit's best attributes and COD to assess the general and negative aspects of Standard & Poor's (S&P) 500 industrial firms from 1993 to 1998 (Anderson, Mansi, & Reeb, 2004). The governance attributes blanketed in this examination included the board's independence and size as well as audit committee's independence, size and assembly frequency. The findings showed that the bondholders felt that the board and audit committee's monitoring effectiveness governed them and guaranteed the integrity of the corporations' accounting data; therefore, there was an acceptance of the reduction of bondholders' threat to managers top level position (Anderson et al., 2004). In their earlier study, Anderson and Reeb (2003), the authors tested the effect of family ownership and control on a company's COD within the US. The study was furthered by the theoretical argument that ownership shape is an effective manager mechanism because it affects the manager-shareholder business enterprise struggle. The study also addressed whether managers' and shareholders' interests are more intently aligned, when the corporation is controlled through the founder and the individuals within the founding family (Anderson & Reeb, 2003). In particular, their investigation carefully examined the relationship conflicts between the ownership structure and the shareholder-bondholder agency. The authors scrutinised 252 companies' proxy statements and corporate histories, listed in the Lehman Brothers index database and the S&P 500, to manually collect information on family ownership and family boards. Ultimately, they assigned a binary variable to denote companies and the family ownership links (Anderson & Reeb, 2003). In the study, the COD measured the use of the yield spread, or the variance between the weighted-average yield to maturity for the company's extraordinary traded debt and the yield to maturity on a treasury protection basis, over a corresponding period. The findings substantiated an association between family ownership and a decrease in the business enterprise COD (Anderson & Reeb, 2003).

According to this discovery, companies with less than a 12% founding and relative ownership experience enjoy the best COD reduction. Furthermore, companies having family members maintaining the CEO function have better COD performance than do family firms with external CEO. Generally, this finding suggests that family-owned firms can better guard their interests compared to non-family companies. Consequently, investors are inclined to accept lower top ratings for their funding. Another study also reported a negative relationship

between block ownership and the cost of capital that WACC measured (Pham et al., 2007). However, a study reported significant positive relationship between block ownership and the cost of capital among Italian companies, although no significant relationship was shown among German companies regarding the effect of block ownership on the cost of capital (Elston & Rondi, 2006). Similarly, a study reported a significant positive relationship between block ownership and the cost of capital that WACC measured (Bozec et al., 2014)

In another similar study, Pittman and Fortin (2004) used a sample of US. firms that went public at some stage between 1977 and 1998. The authors assessed the relation between external auditor reputation and company COD nine years after the safety and alternate commission's registration. The external auditor's recognition was found to be a crucial determinant within the good financial reporting of form companies. A binary variable denoted that the firms had a large number of auditors (e.g. six) to perform an unbiased verification of the reliability and accuracy of the firms' economic statements. Those firms using a large number of auditors (as a proxy for a first-class audit) showed a decrease in the average of the COD. This finding illustrates importance of debtholders' knowing an auditor's overall reputation when determining the financial states of listed companies (Pittman & Fortin, 2004).

Bhojraj and Sengupta (2003) studied the connection between corporate governance mechanisms and bond rankings and yields; they used a US. database of all commercial bonds issued through the period of 1991 to 1996. Their research was premised on the concept that powerful corporate governance mechanisms can lessen default risks, with the aid of mitigating corporation cost and enhancing the tracking of managerial opportunistic behaviour (Bhojraj & Sengupta, 2003). Furthermore, corporate governance mechanisms were thought to help to alleviate the presence of asymmetrical statistics between the company and lenders. The research also used the function of institutional shareholders and outside directors as proxies for corporate governance attributes. From the findings the authors counselled that firms, having more potent outside monitoring through more institutional investor ownership and stronger outside operational experience decreased yields and advanced bond ratings. In Canada, a study examined the impact of corporate governance practices on the cost of capital among 155 companies during the period of 2002-2005. The study concluded that a significant negative relationship exists between corporate governance and cost of capital in terms of both the cost of equity and the COD (Bozec & Bozec, 2011). More recently, the association between corporate governance and COD was examined between family and non-

family firms in Oman, a Gulf country. The study reported a significant negative relationship between the board of directors and the COD in non-family firms. Furthermore, the audit committee was found to have a significant effect on family firms only (Hashim & Amrah, 2016). In India, a study indicated a significant negative relationship between board independence and block ownership with WACC (including COD and COE) as well as a significant positive relationship between board size and CEO duality with WACC (Singhal, 2014). Similarly, a study from Pakistan showed a significant negative relationship between board size and block ownership with WACC (including COD and cost of equity) (Khan, 2016).

### **3.3 Corporate Governance and Financial Performance**

Accumulative studies have been done on the impact of corporate governance mechanisms on financial performance worldwide. Some scholars indicated that firms that apply good governance are relatively profitable and pay more to their shareholders in contrast to firms that do not apply corporate governance practices (Caylor & Brown, 2006). Likewise, in the US, Bhagat and Bolton (2008) revealed that the application of good corporate governance may lead to better operational performance. Similar findings have been found in Vietnam (Vo & Nguyen, 2014). In the current study, the board of director's characteristics, the board's independence, the board meeting, the CEO, the audit committee's characteristics, the audit committee independence, the audit committee meeting, and the ownership structure were considered important variables that have an impact on financial performance

#### **3.3.1 Board Size**

In corporate governance, corporate board size is believed to be one of the most significant structural variables. However, no agreement has been reached on whether a small or a large board would be best or adequate for a firm. According to Yoshikawa and Phan (2003), the agency theory promotes a smaller board size as being more beneficial for minimising the agency cost by allowing for practical control over the management; in contrast, a larger board size might result in more conflict amongst group members (Yoshikawa & Phan, 2003). Lipton and Lorsch (1992) postulated that a corporate board size number should be eight or nine managers. They contended that such a board size is less likely to criticise the policies of top directors and, thus, are more under the CEO's control. In addition, a larger board may lead to too many discussions with the increased number of parties involved. These board discussions tend, to be time consuming and to, reduce

cohesiveness and efficiency due to the inconclusive decision making. Furthermore, such boards may lead to more problems, namely, a member's reliance on the other members regarding management monitoring. Moreover, larger boards seem to be inactive in decision making due to the limited time available for the board meetings, as each member faces greater problems with expressing his or her opinions (Lipton & Lorsch, 1992; Yermack, 1996). However, some scholars (Ahmed & Hamdan, 2015; Bansal & Sharma, 2016; Dalton & Dalton, 2005; Fauzi & Locke, 2012; Le & Thi, 2016; Saibaba & Ansari, 2012; Vo & Nguyen, 2014) suggested that a large board may produce more knowledge and a wider range of experiences than a smaller board would. Despite these positive attributes, Jensen (1993) argued that the disadvantages of and an organisation's struggles with a large board would sooner or later outweigh the advantages. In addition, another study stated that large boards may decrease corporate value in small and medium corporations, but not in larger ones (Di Pietra, Grambovas, Raonic, & Riccaboni, 2008). However, other scholars argued that a large board may be useful for a complex company with greater advisory needs and a greater degree of divergence (Coles, Daniel, & Naveen, 2008). As Pfeffer (1973) and Zahra and Pearce (1989) observed, large boards have a variety of skills that assist in making decisions for a company, especially as CEOs are not supposed to interfere directly within the larger board due to the higher joint power of its members. However, Coles, et al. (2008) argued that a board's usefulness also depends on the economic environment of the corporation itself, such as the state of the relationship between board size and company performance.

Furthermore, a firm with a larger board appears to have the ability to force directors to track lower costs of debt. Hence, creditors have observed these corporations as having more successful financial accounting monitoring processes and, thus, they have more a greater ability to increase their business performance (Anderson et al., 2004). Another advantage that has been highlighted is that a large board has the ability to attract greater leverage and thus better the corporation's appraisal (Wen, Rwegasira, & Bilderbeek, 2002). However, empirical studies (Adams & Mehran, 2008; Beiner, Drobetz, Schmid, & Zimmermann, 2004; Guest, 2009; Yermack, 1996) identified that the relationship between board size and financial performance presented mixed results. For example, one of the first studies to examine the relationship between board size and financial performance was Yermack (1996), who, from 1984 and 1991, used a sample of 452 relatively large US industrial firms. The study showed an inverse relationship between corporate board size and performance. Also, investors' appraisal of the corporations was found to drop steadily when the board size was in a range

between four and 10 members. However, when the board size was more than 10, no relationship was found between the board size and market appraisal.

Nevertheless, more recent evidence has supported the previous results by Yermack (1996), indicating that, on average, a smaller board tends to have a better achievement level than a larger one does (Arora & Sharma, 2016; Cheng, 2008; Coles et al., 2008; Eisenberg, Sundgren, & Wells, 1998; Guest, 2009; Habib, 2016; Singhal, 2014; Vafeas, 1999). In the UK, Guest (2009) studied 2746 UK listed firms between 1981 and 2002 and reported a significant negative relationship between board size and performance. Similarly, Haniffa and Hudaib (2006) reported a negative relationship between board size and financial performance, as measured by Tobin's Q in Malaysia. More recently, other scholars indicated a negative relationship between board size and the accounting return of the firm (Rashid, De Zoysa, Lodh, & Rudkin, 2010; Staikouras, Staikouras, & Agoraki, 2007).

On the other hand, a study found that larger boards tended to make more progress in terms of the bank's performance (Talmo, Shanbhag, & Rubash, 2006). Adams and Mehran (2008), in their study of US listed banking firms from 1959 to 1995, indicated a positive relationship between bank board size and performance. Likewise, a study reported a positive, but a non-linear, inverted U-shaped relationship between bank board size and performance (De Andres & Vallelado, 2008). Their study used a sample size of 69 commercial banks from six OECD countries, and the US. However, a number of studies did not detect any relationship between board size and performance. For example, using a panel of more than 6,000 firms between 1991 and 2003, a study reported no relationship between board size and firm performance (Wintoki, Linck, & Netter, 2012). Similarly, Beiner, et al. (2004) reported no significant relationship between board size and the firm valuations of firms listed on the Swiss Stock Exchange, as measured by Tobin's Q (Beiner et al., 2004). After examining 122 Turkish firms between 2004 and 2009, a study indicated that no relationship existed between board size and financial performance (Topak, 2011). Likewise, no relationship was found between board size and bank performance in a Nigerian deposit money bank and a Chinese commercial bank (Angahar & Mejabi, 2014; Liang, Xu, & Jiraporn, 2013) as measured by non-performing loans (NPL) and total loans. Similar results have been reported in Ghana (Darko et al., 2016).

### **3.3.2 Board Independence**

The theoretical literature review highlighted that, one internal corporate governance mechanism included appointing independent directors, thus effectively reducing the agency and information asymmetry issues that occur in the modern firms (Fama, 1980; Jensen, 1993; Lipton & Lorsch, 1992). Some authors (Ahmed & Hamdan, 2015; Altuwaijri & Kalyanaraman, 2016; Dharmadasa, Gamage, & Herath, 2014; Kumar, 2016; Lin, 2011) have recommended that a greater number of independent directors on a board increases the firm's efficiency. Two theoretical views exist with regard to independent directors; one is in favour of more independent directors on a board, whereas the other is in favour of more executive directors. The involvement of independent directors on boards is important in rational decision-making and in creating value for shareholders. From monitoring the manager and minimising the agency cost perspective, board composition is perceived as an important element of firms (Choe & Lee, 2003). Although executive directors might have a vast range of insights and knowledge of the firm's daily operating policies, fresh talent, and resources should not be wasted and limited by the involvements of the current board (Choe & Lee, 2003; Firth, Fung, & Rui, 2002; Weir, 1997).

On a separate note, in relation to system control and decisions, Fama and Jensen (1983b) acknowledged that board domination by internal managers usually helped them function and perform better if they were the ones making decisions. At the same time, however, the study revealed that dominant insiders are less likely to survive in a competitive business due to the lack of separation between decision making and decision control (Fama & Jensen, 1983b). Hence, the presence of independent directors on a board appears to ensure board independence from the management as it clearly segregates the management and control task. In addition, the independent directors can solve disagreements among the internal managers or between the internal managers and residual claimants. Thus, boards comprising independent directors provide a counterbalance so that the insiders do not take advantage of their position and sacrifice shareholders' wealth. Based on the resource dependent views of Pfeffer and Salancik (2003), the presence of independent directors on the board will enhance the flow of information, and, consequently, protect the firm's resources and reduce uncertainty (Pfeffer & Salancik, 2003). Thus, independent directors are important for banks, as they help to improve earnings quality and provide well-suited compensation incentives to managers (Cornett, McNutt, & Tehranian, 2009; Mishra & Nielsen, 2000).

In contrast to the previous statement, high levels of executive directorships are connected with high access to information, which leads to high quality decision-making (Nicholson & Kiel, 2007). Such a process can have a positive impact on financial performance. Crucially, independent directors usually do not have the privilege of accessing these informal database sources, which provides valuable knowledge from within the firm. As a result, the decisions that a board, controlled by independent directors makes, is likely to have an inferior quality which, in turn tends to lead to lower firm performance. Furthermore, corporate boards, controlled by independent directors tend to smother managerial plans and strategic actions that arise from excessive managerial supervision (Haniffa & Hudaib, 2006). Likewise, internal directors who have firm specific knowledge may provide beneficial information to banks where there is a problem with high information asymmetry (Fama & Jensen, 1983b). This problem was also identified by using the theoretical models that Raheja (2005) suggested. However, according to other scholars, banks with high information asymmetry should not depend on external directors only (Adams & Ferreira, 2009; Harris & Raviv, 2008).

Consistent with the conflicting nature of the theoretical literature on independent directors, earlier empirical evidence related to the connection between the percentage of impartial directors and firm performance is blended. Consequently, if the proportion of independent directors' increases on a board, the board will become more unbiased (John & Senbet, 1998). Empirical literature has reported that boards with impartial directors achieve better overall performance. Baysinger and Butler (1985), studied 266 US groups, and observed that a wide variety of independent directors were anticipated to pursue activities leading to better performance. Similarly, a study among UK corporations determined that external administrators were definitely related to profitability (Ezzamel & Watson, 1993). Likewise, the 311 UK indexed companies that Weir (1997) studied from 1994 to 1996 also showed an advantageous relationship between board independence and corporation performance, using the Tobin's Q method. Some Tunisian and Zimbabwean studies were congruent with previous studies (El-Mehdi, 2007; Mangena, Tauringana, & Chamisa, 2012). The research sample used a pool from Tunisian and Zimbabwean indexed corporations respectively. The study findings revealed that forums that unbiased administrators dominate perform better (El-Mehdi, 2007; Mangena et al., 2012). Furthermore, Liang, et al. (2013) identified that within the Chinese bank context, the involvement of independent directors led to excellent mortgages and minimised the NPL.

In contrast, the proportion of independent directors was negatively correlated with overall performance in a sample of 25 Canadian corporations, for the period of 1976 to 2005 (Agrawal & Knoeber, 1996; Yermack, 1996). Additionally, Bozec (2005) observed an adverse association between board independence and overall performance. Similarly, other research suggested that Nigerian corporations with a low percentage of outside administrators performed better than did those with more non- executive directors (Sanda, Mikailu, & Garba, 2005). Moreover, some scholars identified an adverse association between board independence and overall performance (Bhagat & Bolton, 2008; Fauzi & Locke, 2012; Wang, Tsai, & Lin, 2013). These studies suggested that, although unbiased administrators can convey independence, objectivity and experience to ensure board resolutions, they can also stifle managerial initiatives through excessive monitoring.

A few research studies confirmed neither positive nor negative relations between board independence and overall performance. For example, a number of studies failed to discover any important relationship between board independence and overall performance (Bhagat & Black, 2002; Fosberg, 1989). Furthermore, other studies found no good sized relationship between board independence and accounting returns (Al-Saidi & Al-Shammari, 2013; Rashid et al., 2010; Staikouras et al., 2007). Similarly, Hermalin and Weisbach (1991) did not discover any association between a board of outside directors and Tobin's Q.

### **3.3.3 Board Meeting**

The association between the board's diligence and the firm's financial efficiency was yet another internal corporate governance issue that caused concern for policy-makers and researchers. According to Vafeas (1999), board diligence is an important determinant of the board's effectiveness. Furthermore, board diligence is related to factors that include the number of board meetings and its members' qualifications (Carcello, Hermanson, Neal, & Riley, 2002). Also, a study suggested that the frequency of meetings can be a proxy for diligence (DeZoort, Hermanson, Archambeault, & Reed, 2002). One view is that board meetings are beneficial to shareholders. These meetings are believed to be an important signal of the time that the directors use to monitor managerial activities (Vafeas, 1999), as well as an important resource for improving the board's effectiveness (Lipton & Lorsch, 1992). For example, board meetings measure the intensity of a board's activities, and the quality or effectiveness of its monitoring (Conger, Finegold, & Lawler, 1998). Despite all being equal, more frequent board meetings result in a higher quality of managerial monitoring, which can have a positive impact on the company's financial efficiency.



Moreover, regular meetings allow directors more time to confer, set strategies, and appraise managerial performance (Vafeas, 1999). A diligent board tends to be more concerned with devoting extra time to the supervision of the manager's activity to achieve shareholders' expectations. Moreover, frequent meetings inform the board about the company's relevant performance and make them aware in advance of the need to take the appropriate action to address any problematic issue (Abbott, Parker, Peters, & Raghunandan, 2003). Hence, a study posited that regular meeting attendance is considered a hallmark of the conscientious director (Sonnenfeld, 2002). Frequent meetings intermingled with informal, sideline interactions can create and strengthen cohesive bonds among directors (Lipton & Lorsch, 1992).

An opposing theoretical view is that board meetings are not necessarily beneficial to shareholders. For example, Vafeas (1999) argued that to have a limited amount of time for a meeting is not useful as the directors do not have sufficient time to exchange meaningful ideas; instead they merely discuss lighter issues among themselves. As a result, routine tasks such as the presentation of management reports and other formalities absorb more time during meetings. Consequently, the amount of time that an external director would need to effectively monitor management is reduced (Lipton & Lorsch, 1992). Second, board meetings are costly, particularly in terms of managerial time, travel expenses, refreshments and directors' meeting fees. As Vafeas (1999) noted an increase in board meetings tends to result from the poor performance of the firm, which confirms Jensen's (1993) view that meetings are reactive responses and not proactive measures (Jensen, 1993). However, Vafeas (1999) also found that the number of board meetings increased after a crisis related to improving a company's performance. According to Jensen (1993), boards in well-functioning companies should be relatively inactive and exhibit little conflict. He suggested that rather than necessarily organizing frequent board meetings, it would be more profitable for corporate boards to establish a system that is responsive to specific challenges. For example, directors could increase the frequency of meetings during a crisis or when shareholders' interests are visibly in danger, such as when replacing the CEO or fighting hostile takeovers. Consistent with Jensen's (1993) suggestions, Vafeas (1999) argued that companies that are efficient in setting the right frequency of board meetings, depending on its operating context, will enjoy economies of scale in agency costs.

Nevertheless, there is limited evidence to convincingly argue whether a relationship exists between the frequency of board meetings and a corporation's financial performance.

Furthermore, such proof is conflicting. Consequently, the frequency of board meetings and financial performance association is a productive place for further research. In the US, the earlier work of Vafeas (1999), using data from 307 listed companies between 1990 and 1994, found a statistically significant negative association between the frequency of board meetings and financial performance using Tobin's Q. Additionally, the finding showed that the operating overall performance appreciably improved following a 12-month period of ordinary board activity. These results suggested that, administrators, who confer more often can make more decisions, have greater interaction in active monitoring, and can take advantage of such excessive monitoring, which is predicted to reflect in future years' overall performance.

In contrast, Karamanou and Vafeas (2005), examining the effect of board meetings on management profit forecasts among 275 US indexed corporations, found a weak positive relationship (Karamanou & Vafeas, 2005). Similarly, a study reported a significant positive relationship between board meeting and firm performance in India (Arora et al., 2016). Additionally, some scholars failed to find a positive relationship between board diligence and bank performance (Bhagat & Black, 2002; Brick & Chidambaran, 2010; De Andres & Vallelado, 2008; Hermalin & Weisbach, 1991; Klein, 1998; Velnampy, 2013). Menon and Williams (1994) also argued that frequency of board meetings is just a hard estimation sign of activity, and no longer a signal of the work done at some stage in those meetings (Menon & Williams, 1994). Conflicting perspectives thus raise the question of how effective and significant the frequency of board meetings to the overall performance of firms. This question also has important and viable governance and marketplace implications. As with previous studies, Fich and Shivdasani's (2006) finding identified that extra or more frequent board meetings had little value in the eyes of the marketplace in their 1989 to 1995 sample of US listed corporations (Fich & Shivdasani, 2006).

### **3.3.4 CEO**

The CEO is considered a portion of the corporate governance mechanism. Their duality occurs when the principal executive of the corporation is also the chairman of the board (Boyd, 1995; Moscu, 2013). The chairman of the board and the CEO of a company should not be the same person to avoid the ambiguity in their roles in the firm (Fama & Jensen, 1983b; Jensen, 1993). In small and medium enterprises (SMEs), that duality of roles happens more often (Denis & McConnell, 2003). However, irrespective to board size, a board with a chair who is at the same time a CEO is probably less capable of performing a monitoring task, which would lead to a negative outcome related to the expertise, proficiency,

independence and activity of the supervisory groups. In agency theory, one key role of the board is to assess the administration group, particularly the CEO. Thus, if the individual who deals with the firm is also leading the executive meetings and controlling the inner data belonging to the board, this might decrease the board's ability to evaluate and, in some cases, change the CEO (Jackling & Johl, 2009). Some scholars (e.g. Jensen, 1993) believe that devoting authority to one person may result in making decisions that serve their own interests but not that of other stakeholders on the board. On the other hand, other scholars (Bradbury, 1990; Gendron & Bédard, 2006) support the chair-CEO duality. They believe that the authority of the firm should belong to one person which will lead to less conflict of interest and will allow the firm to achieve better performance outcomes. The literature review examined this topic and demonstrated inconsistent results. A few studies (Bhagat & Bolton, 2008; Bradbury, 1990; Habib, 2016; Vo & Nguyen, 2014; Willekens, Bauwhede, & Gaeremynck, 2004) identified a positive relationship between duality on the board and firm performance. For instance, a study showed a positive relationship between corporate performances and the dual role of the CEO, being harmonic with the stewardship theory (Peng, Zhang, & Li, 2007). Similarly, another study showed a significant positive relationship between corporate performance and the segregation of the roles of chairman and CEO (Sanda et al., 2005). However, a study identified that firms with a dual role of chair of the board and CEO have a shortage of board independence, which results in some agency issues and weak firm performance (Rechner & Dalton, 1991). Likewise, other studies demonstrated a negative association between CEO and firm performance (Dellaportas, Leung, Cooper, Lary, & Taylor, 2012). Different groups of researchers (Elsayed, 2007; Sharma, Naiker, & Lee, 2009) believed that no ideal structure existed; however, it depended on the mix of the different elements.

### **3.3.5 Audit Committee Size**

Similar to board meetings, audit committee performance has also been investigated. Although few studies have been undertaken, they have addressed different strategies, parties and specialists (DeZoort, 1997). Nevertheless, the findings indicate that the size of an audit committee positively affects the audit committee adequacy. Thus, it is more likely that a larger audit committee is needed for the greater number of assets of the company, and vice versa (DeZoort et al., 2002). A number of researchers have likewise concluded that the greater number of individuals included in any action fundamentally helps to increase performance and reduce the chance for an offense (Burton, Pathak, & Zigli, 1977;

Cummings, Huber, & Arendt, 1974). Therefore, choice making in larger audit committees has a higher level of quality over that in smaller review audit committees. Nevertheless, after fulfilling a basic size level, an extensive committee might experience the negative effects of having independent directors; for example, specific individuals might not be given a powerful enough voice to their concerns. To overcome this obstacle, (Mohiuddin & Karbhari, 2010) recommended that the audit committee comprise independent executives, specialists or learned individuals with satisfactory power levels.

To date, the research has resulted in mixed findings with regard to an audit committee's size and a firm's performance. For example, a larger audit committee tends to face more difficulties with achieving a conclusion. At the same time, it provides a stricter overview of the firm. A study inspected 695 US firms trading on an open market and found a positive relationship between audit committee size and its monitoring tasks (Klein, 2002). Similarly, a study analysed 103 firms from Ghana, South Africa, Nigeria and Kenya between 1997 and 2001, and found a positive relationship between audit committee size and committee performance (i.e. ROA and Tobin's Q) (Kyereboah-Coleman, 2008). Additionally, in 2007 a study found a positive relationship between audit committee size and performance (i.e. ROA and working money flows) in 51 Malaysia firms (Albeera, 2009). Limiting their research to past studies, Al-Matarai, et al. (2012) found contradictory results; they discovered a negative relationship between audit committee size and firm performance in Saudi Arabian corporations.

Other studies, nonetheless, found no connection between an audit committee's size and the firm's productivity. For example, a study applying the information gathered from 50 UK life insurance companies from 1994 to 1999, found no relationship between audit committee size and proficiency (Hardwick, Adams, & Hong, 2003). Similar findings have also been reported in developing economies. Twenty Nigerian firms were studied for the years of 2000 to 2006; no relationship was found between an audit committee's size and performance (Kajola, 2008). Other studies reported similar results in the emerging economies of Bangladesh, Saudi Arabia and Jordan (Ghabayen, 2012; Hamdan, Sarea, & Reyad, 2013; Rouf, 2014).

### **3.3.6 Audit Committee Independence**

A number of authors (Abbott et al., 2003; Carcello et al., 2002) have stated that independent directors who are involved in the audit committee tend to have a greater interest

in and a higher demand for audit quality in terms of the protection of independent directors' reputation. Reputational capital enhancement theory appears to explain why independent directors hold a high reputation within the business community, with their perceived directorships being a path for the further development and confirmation of their status as specialists in decision making (Fama & Jensen, 1983b). More specifically, Beasley (1996) indicated that external directors use their directorship to signal both to outsiders (e.g. the investors) and external auditors that: (1) they are experts in decision making; (2) they understand the importance of decision controls; and (3) they can work with limited controls (Beasley, 1996). In addition, it seems that independent audit committees monitor managers better because they have no economic or personal relationship with the management. Abbott, et al. (2003) identified that external directors are decision experts and are good at decision control, and they tend not to have psychological ties with companies because, unlike executive directors, they are not economically dependent on these companies. Furthermore, such directors are also more willing to question management's decisions.

In contrast, other scholars noted that independent directors' decisions are less unfair about an entity's financial outcome, and they would oppose any mismanagement of resources that is negatively related to a firm's financial performance (Beasley, Carcello, Hermanson, & Lapides, 2000). Likewise, Baysinger and Butler (1985) also found that independent audit committees were interested in investigating a variety of management issues. For instance, when a firm faces a financial reporting problem, the independent audit committee seeks in-depth coverage (Baysinger & Butler, 1985). The independence of audit committees allows internal and external auditors to audit and assess financial information more objectively and, thereby, strengthen their internal control functions. Thus, audit committee independence helps to reduce financial fraud (Abbott et al., 2003). However, a study stated that audit committee independence is not effective unless the independent directors are also financial experts (Mustafa & Ben Youssef, 2010). Moreover, the empirical result regarding the relationship between the audit committee's independence and the firm performance is ambiguous. A study suggested that independent directors can reduce the agency problem (Erickson, Park, Reising, & Shin, 2005). However, other studies did not find any positive relationship between the audit committee's independence and the firm's performance (Klein, 2002; Weiss, 2005). Klein's (2002) study showed a negative correlation among earnings, management and audit committee independence. Similarly, Kajola (2008) investigating 20

firms from the Nigerian database, found that an audit committee featuring mostly external members has no influence on the firm's performance.

Congruent with those findings, a study of 103 listed firms from Ghana, South Africa, Nigeria and Kenya found no significant relationship between the audit committee's independence and firm performance (Kyereboah-Coleman, 2008). However, the study did find a significant negative relationship between the audit committee's independence and Tobin's Q in a sub-sample of Ghanaian and Nigerian firms; therefore, it may be important to employ people with technical knowledge and those having previous experience with an organisation's value creation (Kyereboah-Coleman, 2008). Similarly, a recent study in India indicated no significant association between the audit committee's independence and firm performance (Bansal & Sharma, 2016).

### **3.3.7 Audit Committee Meeting**

Audit committee meetings can be an effective monitoring mechanism achieved through the active involvement of the auditing committee. Quarterly audit sessions are a way in which to improve a firm's efficiency. The activity is seen as a sign of good governance from the management. Using practice, a firm would hold an audit committee meeting at least once a year without the involvement of the executive board members. However, the company's terms of reference and the complexity of the firm's operations usually determine the number of audit committee meetings that need to be held. Governance home rules also help the audit committee to be constant in its occupations (Beasley, Carcello, & Hermanson, 1999). Thus, the number of meetings can be understood as a sign of the audit committee's constancy. Past studies have postulated that audit committee meetings work to minimise the dangers related to administrative issues as well as accounting and financial review issues (Raghunandan, Rama, & Scarbrough, 1998). The coordination between the audit committee and the administration helps to enhance administrative action in managing and adjusting the flow of data to the company's chiefs.

Abbott, et al. (2003) found that expanding the quantity of audit committee meetings enhances the financial accounting procedures and prompts better performance. The authors also, contended that, if the meetings are not valuable the quantity of the audit committee meetings would not upgrade the performance of the firm. In the Middle East, a study in Egypt showed a positive significant relationship between audit committee meetings and firm performance using ROE (Amer, Ragab, & Shehata, 2014). Likewise, a recent study from the

UK indicated a significant positive relationship of audit committee meetings in improving firm performance (Zábojníková, 2016). Empirical evidence found that no relationship existed between audit diligence and firm performance (Huang, Lai, & Wen, 2008). Using the Ghanaian firms for their case study, Kyereboah-Coleman (2007) found a negative significant relationship between audit committee meeting frequency and the ROA which were used only for crisis management. Likewise, another study in Ghana reported a negative significant relationship between audit committee meetings and firm performance (Darko et al., 2016).

### **3.3.8 Ownership Structure**

Berle and Means (1932) research sparked a debate regarding the ownership structure of a firm in terms of corporate governance. During the past three decades, agency theory has been used in the debate on whether ownership structure is correlated with a firm's performance. Researchers (Jensen & Meckling, 1976) argued that, according to the entrepreneurial model there would be some degree of association between those models. Other researchers (Fama & Jensen, 1983b), using the managerial model believed an association existed between board structure and corporate performance. Furthermore, a number of experts (Brown & Caylor, 2006; Drobetz et al., 2004; Gompers et al., 2003; Klapper & Love, 2004; Larcker et al., 2007; Yilmaz & Buyuklu, 2016) argued that corporate governance variables had a strong effect on corporate performance, whereas another groups of researchers (Demsetz, 1983; Demsetz & Villalonga, 2001) did not agree with such a relationship.

Yet, this association between ownership structure and corporate performance appears to be mixed and indecisive. The empirical evidence reveals positive, negative or no relationships among the possible endogenous effects. However, the influence of a high level of firm ownership can be undesirable for minority shareholders. For example, a scholar noted that difficulties between minority shareholders and managerial agents (professional directors or majority shareholders) are may not become resolved (Petra, 2005). Moreover, it seems that no certainty if there is a greater and more convenient high-level focus or specialty and the greater independence of the directors.

Some scholars (Jensen & Meckling, 1976) recommended that agency conflict between managers and shareholders could be alleviated through managerial ownership. This outcome arises when the managers own a larger portion of the shares and, thus, have more incentive to maximise the firm's value to ensure the best performance for the company. Some scholars have confirmed that a higher level of managerial ownership reduces the agency costs

(Ang, Cole, & Lin, 2000; Singh & Davidson III, 2003). Many scholars (Admati, Pfleiderer, & Zechner, 1994; Claessens, Djankov, & Lang, 2000; Demsetz, 1983; Demsetz & Villalonga, 2001; Farooque, van Zijl, Dunstan, & Karim, 2007; Jensen, 1986; Jensen & Meckling, 1976; La Porta et al., 2000; Maug, 1998; Shleifer & Vishny, 1997) have also revealed a positive effect of the ownership structure on the value of the firm.

Investigations into a firm's ownership structure have converged in a number of ways. For example, as Demsetz (1983, p. 384) contended: "The structure of ownership that rises are an endogenous result of aggressive determination in which different cost appropriate circumstances and drawbacks are adjusted to land at a harmony association of the firm". Demsetz also recommended that such a structure must be such that it boosts the estimation of a firm. Consequently, no precise relationship was shown to exist between the change in an ownership structure and the change in the estimation of the firm. This methodology was affirmed by Demsetz and Lehn (1985) who contended that a firm adopts the ownership structure that amplifies its worth. Further, there is no measurably significant relationship between the ownership structure and the firm's value in relation to the endogenous variables (Demsetz & Lehn, 1985).

In another study, Demsetz and Villalonga (2001) investigated the association between ownership structure variables and firm performance for 223 firms in the U.S. over a five-year period from 1976 to 1980. By applying two equations (i.e. OLS and 2SLS) to their model, they performed multiple regression analysis. Their results showed that the ownership structure did not influence the firm's value and confirmed the endogeneity hypothesis put forward by Demsetz (1983). Another study reported a similar result for the Australian market (Welch, 2003). Endogeneity of ownership structure was also found in small firms. For example, one study reported that, from a sample of 1564 Danish firms between 1990 and 2002 a non-linear relationship existed between an endogenous ownership structure and a firm's value (Dilling-Hansen, 2005). Moreover, small businesses were found to operate differently from large ones with smaller firms having a higher ownership concentration and a worse performance. Farooque et al (2007), analysed an emerging market based on, a sample of 723 financial and non-finance companies listed on the Dhaka Stock Exchange, from 1995 to 2002. Their results showed a negative relationship between board ownership and financial performance.



One study used the profit rate to measure the relationship between board ownership and corporate performance; their results indicate that the estimated coefficient was similar to the Tobin's Q regressions (Morck, Shleifer, & Vishny, 1988). Coefficient was significant at the 5 per cent level, yet much lower and with a positive slope in the 0 per cent to 5 per cent range. The study demonstrated that there was a large and positive relationship between inside ownership and Tobin's Q in the 0 to 5 per cent rates of ownership, and a negative relationship between the 5 and 25 per cent range. The study also demonstrated that ownership enabled a positive relationship for percentage rates over 25. Additionally, Morck et al., (1988) found an indirect relationship between the convergence of ownership and a firm's performance. The non-direct relationship was disclosed by the entrenchment theory and relating speculation. By adopting the theory, the business sector quality will increase with the extensive stakes by insider ownership. Nonetheless, the entrenchment theory predicts that a firm's value diminishes with expanded administrative ownership (Morck et al., 1988).

Other studies have followed the work of Morck et al. (1988). For example, one study examined the relationship between ownership structure (insider and block-holders), and firm performance measuring it with Tobin's Q using two separate samples (McConnell & Servaes, 1990). In the first sample set (1976) 1173 firms were investigated, and in the second sample set 10 years later (1986) 1093 firms were investigated. The results showed a significant positive correlation between insider ownership and Tobin's Q, while the block-holders had an insignificant relationship with Tobin's Q. Further, a significant curvilinear relationship was found between Tobin's Q and insider ownership. The relationship between Tobin's Q and managerial ownership moved upward on the insider ownership scale until it reached approximately 40 to 50 per cent, later falling slightly. Their conclusion was that performance was a function of the ownership structure (McConnell & Servaes, 1990).

In another study, the relationship between ownership structure, board composition and firm performance was investigated. The results indicated that managerial ownership was significantly related (non-monotonically) to firm performance namely; a positive relationship when the level of ownership was lower than 1 per cent, a decreasing relationship when the ownership was between 1 and 5 per cent, an increasing relationship with between 5 and 20 per cent ownership, and a decreasing relationship with over 20 per cent ownership (Hermalin & Weisbach, 1991). Another study also found a nonlinear correlation between higher proportion of ownership by directors and firm performance (Wruck, 1989). Additionally, Gugler and Yurtoglu (2003) investigated the association between insider ownership and firm

performance for 3673 firms in the U.S. between 1989 and 1998. They measured insider ownership using the percentage of shares held by the directors and they measured the firm's performance using the return on investment. The study used OLS and 2 SLS. The results indicate a significant positive association between a firm's performance and insider ownership with the insider ownership reaching approximately 21.5 per cent; a negative association with insider ownership between 21.5 and 63 per cent, and a positive association when insider ownership equals 100 per cent (Gugler & Yurtoglu, 2003). Chiang and Chia (2005) studied the association among corporate governance variables and operating performance. Their 2001 study adopted the Standard & Poor's information transparency measurement criteria to measure the information transparency of 225 high-tech companies listed in Taiwan. Multiple regression analysis was used to test the relationship among corporate governance mechanisms and operating performance using ROA and ROE. The results indicated a significant negative correlation between the proportion of ownership by directors and firm performance. However, overall the relationship between foreign ownership, insider ownership, institutional ownership and firm performance was significantly positive (Chiang & Chia, 2005). A European study has analysed the impact of ownership structure on firms' economic performance for 100 large firms in 12 European countries. Their results indicate a significant positive effect of ownership structure on shareholders' value particularly in the U.K (Thomsen & Pedersen, 2000). Another study in Turkey revealed that foreign ownership improves corporate performance (Gurbuz & Aybars, 2010). Similarly, another study posited that the issuance of shares to foreign financial specialists and the high extent of foreign brokers have a critical positive effect on business sector value (Bai, Liu, Lu, Song, & Zhang, 2004).

The relationship between the shares held by governments and firm performance was analysed, and the analysis illustrated blended ownership. For example, one study identified a positive and significant correlation between government ownership and firm performance in Malaysia (Najid & Rahman, 2011), and other studies have resulted in similar finding (Aljifri & Moustafa, 2007; Imam & Malik, 2007). By contrast, some researchers assessed the relationship among state, and mixed and private ownership, and firm performance for 500 of the biggest firms outside the U.S. The findings showed that state ownership and blended ownership had a negative impact on firm performance (Boardman & Vining, 1989). The results concur with those of other studies which have asserted that there was a noticed negative relationship between the shares held by a government and the firm's performance

(Han & Suk, 1998). Likewise, other studies approved the case by expressing that there was a critical negative relationship between the state and firm performance (Wei, Xie, & Zhang, 2005; Xu & Wang, 1999). Similarly, some scholars found that government ownership had a noted negative association with corporate performance in Jordan (Zeitun & Gang Tian, 2007). Also, Farooque et al (2007) found that government ownership had a significant negative association with corporate performance in Bangladesh. However, other researcher found that in Saudi Arabia there was no association between corporate performance and government ownership (Al-Hussain & Johnson, 2009).

Further, foreign ownership appears to play a significant role in improving the effectiveness of corporate governance, and it is considered a major mechanism for improving corporate performance. Moreover, according to some scholars, corporations with a higher percentage of foreign ownership tend to have excellent opportunities to access more advanced technology and managerial skills (Douma, George, & Kabir, 2006). For example, one study documented a positive and significant association between foreign ownership and corporate performance (Chari, Chen, & Dominguez, 2012). Other studies have also reported similar evidence (Ghahroudi, 2011; Le & Thi, 2016). In addition, firms with a higher percentage of shares held by foreign investors perform at a higher level (Frydman, Gray, Hessel, & Rapaczynski, 1999). Similarly, in India, Douma et al. (2006) found a positive relationship between foreign ownership and corporate performance.

### **3.4 Conclusion**

In this chapter, the previous literature on the relationship of corporate governance mechanisms with the cost of capital and financial performance in both developed and developing countries was reviewed. This chapter was divided into two main sections. The first section reviewed the literature with respect to corporate governance mechanism with cost of debt and cost of equity. The second section reviewed the literature in respect to corporate governance mechanisms including board structure, audit committee structure, and ownership structure, and its relationship to firm performance. The discussion of the literature was conducted in the context of developed and developing countries as well as Saudi Arabia. Discussion of the literature indicated inconsistent findings regarding the association between corporate governance mechanisms and both the cost of capital and financial performance. The following chapter describes the theoretical basis that links the study variables. There are several theories the literature elaborates on in the context of corporate governance; however,

the current study mainly focusses on agency theory as well as stewardship theory and resource dependence theory to highlight the theoretical connection between corporate governance mechanisms and both the cost of capital and financial performance. It also presents the theoretical framework for the current study and hypotheses development.

## **Chapter Four: Theoretical Framework and Hypothesis Development**

### **4.1 Introduction**

This chapter presents the theoretical framework, discussing the main theories related to the relationship between corporate governance and the cost of capital as well as financial performance. Moreover, to achieve the main objective of this study, hypotheses are developed to test the association between corporate governance and both the cost of capital and financial performance. In this respect, hypotheses are set for the study's objectives, which investigate the effect of corporate governance mechanisms on the cost of capital and financial performance. The chapter is organised as follows: Section 4.2 provides some definitions of corporate governance from the literature. Section 4.3 discusses the main theories that relate to this study. Section 4.4 shows the conceptual framework, which demonstrates the connections between the study variables. Section 4.5 provides a discussion about the development of the hypotheses. Finally, section 4.6 concludes the discussion and summarises the chapter's main points.

### **4.2 Corporate Governance: A Definition**

Perceptions and opinions concerning the correct definition of corporate governance vary. This is potentially due to the fact that various scholars assess corporations from different perspectives (Turnbull, 1997). From the viewpoint of some scholars, corporate governance refers to a certain mechanism that intends to lower, as much as possible, the risk shouldered by shareholders, who are seen as the firm's owners (Schneider & Scherer, 2015). Conversely, others see corporate governance as those aspects that impact the processes of a certain firm, such as financial stratagems among others (Al-Suhaibani & Naifar, 2014). The meaning of the term "corporate governance" has also been illuminated by other academics. Some see it as the series of policies, processes, regulations and customs impacting a firm's direction and administration; and they think its aim is to have an effect on the behaviour of the firm towards its stakeholders in either an indirect or direct manner (Dignam & Lowry, 2006). The Cadbury Committee defines corporate governance as "the system that directs and controls firms".

Sir Adrian Cadbury (Cadbury, 1992) also stipulated that the definition of corporate governance is:

“One concerned with maintaining a harmonious balance among both the societal and financial aims, and individual and the community interests. The governance framework exists to ensure the efficacious and equal utilisation of resources, and also intends to bring about an accountability concerning the stewardship of these resources’. The intention is, therefore, to marry the concerns and aims of corporations with society and the individual.”

Donaldson, (1990) defined Corporate governance as “the structure that is used by the board of directors control managers at the organisational zenith of the firm in question, as well as all executive incentives, alternative organisational processes and relevant structures”. Corporate governance is represented by the connection among a number of interest groups including: management; stakeholders with control; other stakeholders; minority stakeholders; and the board of directors (Pelayo-Maciel, Calderón-Hernández, & Serna-Gómez, 2012). The global yardstick of “good corporate governance” has acknowledged as the OECD Principles of corporate governance.

The network of relationships that exists between a firm’s managerial process, its shareholders, its board and the remaining stakeholders is contained within corporate governance. The mean by which the aims of the firm was established is provided by corporate governance, as are the means by which such aims can be realised and performance monitoring attained, according to the OECD (2004). Additionally, the principles assert that efficacious governance needs to incentivise the board, as well as the management in order to seek out aims tied to the concerns of the firm itself and its various stakeholders while simultaneously propounding efficacious monitoring. Nevertheless, such principles remain non-binding; instead, they is perceived as things that can be used to steer those individuals as they assess their own financial, societal, lawful and cultural settings when devising policy. Such principles intend to highlight such aims of the firm and present a number of recommendations as to how they can be attains. Efficacious governance presents a chance for superior transparency within business operations and business structures, while also lowering the chances of political repercussions for managerial, stakeholder and governmental figures (Cadbury, 2002).

Most significantly, at least two main definitions can be used for corporate governance: a broad definition and a narrow definition. The latter is restricted to those phenomena concerning the protection of shareholders, issues related to agency theory and managerial control (Olayiwola, 2010). In accordance with this view, corporate governance is

perceived as a tool and a mechanism that is able to deal with issues arising from the segregation of control and ownership in bigger firms (Tricker, 2015). Advocates of this perspective have defined corporate governance as a series of mechanisms that are intended to balance managerial and stakeholder interests. In line with this viewpoint, corporate governance needs to subdue any tensions between managerial staff and stakeholders, and it must focus on those structures that concern such tensions while maintaining stakeholders' rights (Cheema, Johansson, & Mir, 2009).

Stakeholder theory is a crucial element of corporate governance and the general viewpoints therein (Lin, Li, & Bu, 2015). According to the perspective of advocates of stakeholder theory, the primary focus should be the relationship between the business in question and the array of stakeholders—including workers, creditors, suppliers, bondholders, society and customers (Tirole, 2001). Assuming this perspective, corporate governance is something seen as a series of regulations, laws, rules and normative practices within the corporate world that determines owner (principals), general stakeholder and manager (agent) relationships (Becht, Bolton, & Röell, 2002). This broader viewpoint corroborates the arguments made by Schleifer and Vishny (1997) who assert that: corporate governance is able to increase transparency, sustainable financial conduct, extrinsic capital accessibility overseas investment, fairness, and optimisation of shareholder value while also providing stakeholders with fair treatment and boosting overall economic, national and corporate reputation.

Corporate governance has been defined as “a grouping of people or a single person who can impact, or are impacted by, the attainment of the corporation's aims” (Freeman, 2010). Therefore, a firm needs to account for the aims and concerns of those individuals who are related or affiliated with the firm, including society at large as well as more specific parties such as employees, customers, suppliers and creditors (Nuryaman, 2012). Corporate governance systems should, according to the wider and more general viewpoint, try to guarantee executive that management is correctly regulated, and ensure that stakeholders' interests are served by the firm's actions while also endeavouring to serve the company-stakeholder relationship as best as they can.

The definitions provided above disclose a genuine differentiation with regard to the conceptualisation of corporate governance. In accordance with some researchers, like Alzahrani (2013), such differentiations arise from alternative aspects of the subject matter itself, such as investment, economy, corporate practice, the trade policy in place, the nation in question and the nature of the researcher and the practitioner. In Saudi Arabia, for example,

“corporate governance”, as a term, is something that is relatively new and has just recently been incorporated into the Kingdom’s law code (Al Kahtani, 2013). Therefore, one must use great caution when applying one or more of these definitions in the context of Saudi Arabia, due to the fact that the definition of the term and its internal concepts as they are understood in the Kingdom itself can be ambiguous. Nevertheless, out of all the Gulf Corporation Countries Saudi Arabia was, after Oman, the second country to adopt corporate governance as a concept (Alzahrani, 2013).

Consequently, the Saudi Market Authority enacted a code in 2006, which shall be expounded on later. This code was referred to as Corporate Governance Regulations, and it was equal to that of other capital market standards and international corporate standards. The Saudi capital and corporate market was subjected to this code though it had no in-depth definition of the term ‘corporate governance’. Due to the new and unfamiliar nature of the term in the country, its meaning needs to be clarified so that individuals become aware of its meaning.

### **4.3 Theoretical Framework**

The main paradigm that shall be employed within this study is the agency paradigm, and this shall be the main theoretical structure that is used to assess the impact of corporate governance, such as the relationship among managerial personnel and owners concerning the performance of a particular business. The theory concerns shareholder interests by efficiently managing the agency problem, thereby ensuring greater value. The general interest of shareholders is, indeed, the optimisation of value and the efficient management of firm resources.

A significant benefit of agency theory is its ability to limit the study parameters to take into account two groups: the principal and the agent. This results in the viewpoint of shareholders, who in this case are the principals and are thus easier to assess due to the fact that they are mainly galvanised by investment returns and firm values. The overall perspective of agency theory sees the necessity of the divergence of managerial and shareholder interests, with the latter being considered rational albeit opportunistic. The theory proposes a hypothesis that can be tested when attempting to reduce agency conflicts and to make stakeholder returns more profitable, thereby boosting the firm’s performance (Fama & Jensen, 1983b; Jensen & Meckling, 1976). Based on the literature, the cause of these issues is connected to managers’ investment choices, either overinvestment or underinvestment, as well as to earning retention and shirking from the positive net current value rule, and free



cash flow (Dhumale, 1998; Jensen, 1986, 1993; Jensen & Murphy, 1990; Shleifer & Vishny, 1986).

The capacity of management to come up with and enact decision-making strategies is essential to the performance of a business, while the motivation of managerial staff usually results in significant remunerations, which is in line with agency theory. This also indicates that managers usually operate to benefit themselves, sometimes even in ways that are contrary to the wishes of the firm or its shareholders. This occurs when managers' aims are not aligned because of poor monitoring, compensation and bonding (Liu & Fong, 2010). Within agency theory, mechanisms of corporate governance have an important role part to play when guaranteeing that the principal's and the agent's interests remain aligned, thereby boosting the firm's ability to optimise the wealth of shareholders and thus improve the firm's performance.

The structure of ownership of a firm, especially with regard to the board of director's board, remains the primary aspect that hinders the inculcated differentiation of principals and agents, thereby improving the firm's performance. A number of organisational elements affect a firm's performance, such as CEO duality; board size; how many non-executive directors (NEDs) there are; mechanisms concerning the ownership structure, such as concentrated ownership and large shareholders, and managerial ownership and shareholder identity.

Both resource dependence theory and stewardship theory are able to present alternative explanations concerning the mechanisms that determine the way boards of directors operate, and how this operation impacts a firm's performance. Indeed, in a number of ways, there is an overlap between these two theories and agency theory. Nevertheless, with regard to the impact of the firm's ownership structure on firm performance, the two theories fail to present testable hypotheses and thus do not present any explanations, particularly in the context of this study. The idea of an alignment of aims and concerns between the agents and the principals is the core facet of the perspective brought about through agency theory, one that indicates that the management and shareholder perspectives should be aligned in order to boost maximisation. Jensen and Meckling (1976) predicted that this incentive generates a total surplus. Therefore, the alignment of management and shareholder interests may be able to solve the agency problem, as well as attain the primary shareholder's aim of maximised value.

The section below shall expound on these theories and try to provide an explanation of corporate governance mechanisms with regard to the applicable theoretical underpinnings.

In this study, agency theory was the main theory applied in study findings; however, resource dependency theory and stewardship theory were included where they were relevant. The section below shall provide a more in-depth assessment of the empirical literature concerning the subject of this study and shall review the theories outlined in this literature in order to explain how corporate governance mechanisms impact the cost of capital and firm performance.

### **4.3.1 Agency Theory**

Publicly listed firms and larger corporations usually possess an organisational structure in which there is an essential segregation of control and ownership among the principals and the agents of the firm. As part of the relationship between these two parties, principals as the owners, employ managers as agents to manage their businesses in the way most fitting to their aims, remunerating the managers in the form of a salary (Hart, 1995; Jensen & Meckling, 1976; Sappington, 1991). Any tension that arises in the relationship between owners and managers comes from the two parties having different aims. The issue that arises from principles and agents' relationships is conceptualised in agency theory, according to Fama (1980), Jensen, and Meckling (1976).

One of agency theory's major principles is that there tends to be a discrepancy between the executives and stockholders' priorities, therefore a clash of interests ensues. The stakeholders are considered to be acting in a balanced way, albeit pragmatically. The primary factors assumed to be at work within agency theory are as follows: a) executives tend to neglect to create benefits for stockholders, so as to meet their own objectives (Demsetz, 1983; Jensen & Meckling, 1976); b) the creation and implementation of agreements incurs certain costs (Fama & Jensen, 1983b); c) stakeholders' reasonableness is finite and d) each stakeholder tends to have a different degree of knowledge with which to make a decision. Ultimately, the stockholders' access to a company's data is limited in comparison to that of the executives; therefore, they are unable to have an informed opinion on the actions of the directors and whether it is in the interests of the stockholders.

Jensen and Meckling (1976) identified various agency costs, for example bonding penalties, residual penalties and monitoring penalties. They described bonding penalties as non-economic or economic impacts emanating from the formation of arrangements and schemes that, aim to increase executive accountability and action that is beneficial to stockholders. When there is a discrepancy between the utility maximisation aims of both executive and stockholder, regardless of the arrangements in place to improve relations, both

parties suffer from residual penalties. When stockholders choose to observe and scrutinise executive actions, monitoring penalties can result. Fama and Jensen (1983a) give an alternative definition for residual cost, arguing that it emanated from the implementation of a principal-agent agreement that had fewer advantages for the parties than it did disadvantages.

Jensen and Meckling (1976), Hart (1995) and Sappington (1991) all considered that executive-stockholder interactions to be a prime example of agent-principal theory, and hence could be explained by agency theory. Essentially, having been appointed by the stockholders executives accrue benefits through their effective management of a company. A company's performance is impacted significantly by the degree of executive exertion by how executives respond to problems. However, Sappington (1991) emphasised that it is problematic for a stockholders to determine the degree to which an executive has made an effective decision, due to their lack of access to company data. Therefore, an executive might be remunerated for actions that required little exertion or minimal risk-taking, further reducing the executives' will to respond with exertion or flare. Hart (1995) believed that agency-principal interactions innately held this dilemma of inducement and risk, with the real factor being how to forge an effective path between riskier decision making and running a company productively. Other scholars have illustrated how a stockholder could opt to observe and regulate the executives' activities, accepting the monitoring penalties incurred so as to increase their knowledge compared to that of the executives (Arnold & De Lange, 2004; Sappington, 1991).

The discrepancy in information access between principal and agent is part of a wider issue concerning moral hazard and adverse selection. Jensen and Meckling (1976) identified decision-making issues related to moral hazard, which issues result from executives' lack of exertion when acting to benefit stockholders. If a stockholder is unaware of the situation, effective observation of executive exertion is necessary, so that remuneration is reflective of exertion. One scholar believed that adverse selection stems from the stockholders being unable to ascertain the actual capabilities of the executive, possibly resulting in the employment of an incapable individual who cannot then be monitored effectively (Eisenhardt, 1989). The established research has identified multiple issues that feed into these problems. Take for example, the positive net present value rule, which results in capital withholding shirking, unregulated money flow and particular under and overinvestment choices made by executives (Dhumale, 1998; Jensen, 1986, 1993; Jensen & Murphy, 1990; Shleifer & Vishny, 1986). Hart (1995) argued that in reality, each party has to maintain the balance between spreading risk where the executive will be rewarded for averting hazards-

and inducement-, which can encourage executives to increase the company's financial gain through risk taking, by offering remuneration. Ultimately, the risk-inducement dilemma is at the heart of the agency-principal issue.

The interaction between agent and principal was investigated by Jensen and Meckling (1976), particularly in relation to corporate proprietorship and the advantages of executive stockholders encouraging a closer relationship between principal and agent aims. The part a board of directors can play in the regulation of executive self-interest was also explored by Fama and Jensen (1983a). Therefore, we can consider agency theory as being largely focussed on explaining how structural characteristics of a company can create problems of agency. Property rights are a significant issue in this regard, because who owns what within a company can impact further on executive-stockholder interactions. Therefore, we can determine that the most prominent aspects of the agent-principal theory are as follows: a) it suggests methods for diminishing the chance of conflict through the increased association of agency and principal self-interest, while also ensuring there are governance structures in place to manage disputes; and b) it clarifies the various issues pertaining to agency and how agents can be managed.

A board of directors' characteristics and corporate governance tools, such as NEDs, CEO duality and board size, are all considered by agency theory to impact the regulation of managers. Fama and Jensen (1983a) argued that NEDs tend to be autonomous and interested in preserving their own standing. Therefore, they can play a crucial regulatory role in relation to management. They can also bring experience and professionalism to a company (Fama, 1980; Fama & Jensen, 1983a). Relatedly, in the context of resource dependency theory, NEDs have also been considered useful in enhancing business performance, as a result of their role in strategic and investment choices made by a firm. NEDs are also able to interact with various interested parties both inside and outside of the business. Baysinger and Hoskinsson (1990) determined that both resource dependency theory and agency theory emphasise a positive correlation between the recruitment of NEDs and increased company productivity, which is a result of guaranteeing such things as the autonomy of the board (Baysinger & Hoskinsson, 1990). On the other hand, stewardship theory indicates that NEDs are less able than internal directors to regulate executives, owing to the latter's familiarity with the company.

Furthermore, in a majority of instances, the part-time or ceremonial stance of NEDs stymies the monitoring function, and renders the additions made to decision-making processes irrelevant without benefit to decision-making processes (Bozec, 2005). Therefore,

contrary to agency and resource-dependency theories stewardship theory see NEDs as individuals who will probably have a negative impact on their businesses' performances.

NEDs would also impact positively the size of the board. This is beneficial for firms in that it concerns a larger base of experience, while also preventing bad decision-making and communication, which leads to the comparatively poorer performance of bigger boards (Jensen, 1993; Lipton & Lorsch, 1992). The issues of communication and coordination increase with the size of the firm's board, thus lowering the capacity of the board to assess and regulate managers and making agency problems worse (Eisenberg et al., 1998). Additionally, the segregation of the chair and the CEO is advocated by agency theory. The main goal of the chairperson is the remuneration of the CEO as well as the management of the board of directors. A single individual thus assimilates two roles, which could give rise to worse agency problems by weakening the efficacy of CEO monitoring practices, according to Jensen (1993).

Nevertheless, the agency theory propounds the view that efficacious management is founded on the aspect of unity in the management of the firm. Therefore, the chair and the CEO need to hold a similar position. This is due to the fact that, when decisions lie in the hands of a single individual, a superior understanding of the operations of the firm itself would result, as would superior choices, which would result in the reduction of agency problems. This would, in turn, have a positive impact on the cost of capital and firm performance (Dalton & Kesner, 1987; Donaldson & Davis, 1991).

Conversely, when taking into account the mechanisms of structural ownership, incentives for agents are needed to align interests and principles (that is, to persuade management to prioritise the optimisation of shareholder value). Due to the fact that the interests of shareholders and managers are aligned through managerial ownership, behaviour concerned with incentivisation and opportunity decreases, and therefore agency problems are reduced, according to Jensen (1993) and Jensen and Meckling (1976). Additionally, larger shareholders who are more controlling further stymie agency issues, as they possess the necessary motivations incentives and abilities to monitor and manage mutual control benefits (Shleifer & Vishny, 1986, 1997). However, stewardship and dependency theories are unable to present any testable hypotheses with regard to ownership structure, and thus stewardship theory and resource dependency theory are only to be involved in the case of testable hypotheses. Thus, agency theory shall be the primary theory utilised in this assessment.

Agency theory indicates that, as a result of the segregation of control and ownership in the case of modern business, there is less of a chance that an agent shall perennially work

according to principal's interests. In order to lower the differentiation of interests, shareholders need, when monitoring managers, to utilise internal corporate governance mechanisms and thereby encourage rationally acting managers to complete their role in optimising shareholder value, thereby increasing the performance of the firm. This dormant structural facet needs to be substantiated with the use of intentional endeavours to regulate and control management; corporate governance needs to highlight all possible issues and reward managers' good behaviour and strong performance. The costs of residual losses, as well as of monitoring and bonding agents, are referred to as agency costs. Assuming that such costs guarantee that managers are not merely following their personal agendas and ignoring shareholder interests, agency costs are able to lessen the agency's problem and contribute to the firm's improved performance.

The Saudi government has taken throughout the years to change corporate governance. The advancement of the 2006 Saudi Corporate Governance Code (SCGC) constitutes the foundation of these changes (Al-Abbas, 2009; Al-Nodel & Hussainey, 2010; Robertson, Diyab, & Al-Kahtani, 2013). Like other corporate governance codes, the SCGC tries to decrease agency conflicts in the middle of way and shareholders by increasing the responsibility of boards of directors and encouraging greater straightforwardness, in their actions (Alshehri & Solomon, 2012; ROSC, 2009). This is especially vital in Saudi Arabia connection because of the presence of high ownership fixation in recorded Saudi firms (Al-Abbas, 2009; Al-Nodel & Hussainey, 2010). Such a focus on ownership could unfavourably influence the privileges of small shareholders (Baydoun et al., 2013), thereby creating a conflict of interest between small and large shareholders. For instance, large shareholders have the ability to delegate to their companions and relatives. The arrangement of such directors could imply that they may look after the interests of substantial shareholders to the detriment of small shareholders. Also, politically well-connected people may be chosen for senior positions without regard to their capacity to perform those roles (Boytsun, Deloof, & Matthyssens, 2011; Haniffa & Hudaib, 2007). Consequently, the use of a hypothetical agency structure turns out to be considerably more important in the setting of Saudi Arabia. Hence, in this study, agency theory is the principle theory used as it has clear financial implications. Nevertheless, resource dependency and stewardship theories are also reviewed to help develop an understanding of corporate governance.

To explain the present study in the framework of the agency theory, the business environment in Saudi Arabia is characterised by high levels of ownership concentration,

which means the owners of the firms are more likely to be the managers. According to agency theory, the ownership and management of the firm should be separated and agents should work in the interest of all shareholders not just the principals. Hence, to solve this agency issue, agency theory illustrates how to use internal corporate governance mechanisms, including board structure, ownership structure, and audit committee structure, to supervise a firm's managers and encourage them to accomplish their jobs of improving firm performance and reducing the firm's cost of capital.

#### **4.3.2 Stewardship Theory**

Stewardship theory focusses on psychological and sociological methods of oversight. This theory does not much examine the economic, that is, the pecuniary, mechanisms of agency theory. In the case of the stewardship theory, organisational members possess a kind of collective identity that is able to engender behaviour of a trustworthy nature (Davis, Schoorman, & Donaldson, 1997). Financial advantage is not the only motivating factor with regard to management (Muth & Donaldson, 1998). Furthermore, managers need to possess some form of discretion if they are to manage firms efficaciously. As a result of this, segregated ownership is not seen to be a weakness in stewardship theory, much as cooperative are not seen to be inculcated behaviour with regard to management (Davis et al., 1997; Donaldson & Davis, 1991), indeed managers must ensure several motives as well as financial gains (Muth & Donaldson, 1998).

Managers of board member are, according to Fama and Jensen (1983b), more probable in bigger firms as they have a more wide view of organisational actions as conducted by the other boards . Stewardship theory argues that worries about personal reputation and career have a negative and limiting impact on agents with regard to fulfilling stakeholder interests, and therefore agency costs need to be reduced as much as possible, according to Donaldson and Davis (1994). The contributions stewards make to firm performance are psychological and sociocultural elements (Clarke, 2004). For instance, if there is a psychological element, managers are deemed to act in a superior manner that is with higher levels of empowerment and greater job satisfaction. Generally, managers identify socially with similar personnel in other successful firms. As representatives of the organisation in question, managers think that they have the power to help their organisation and other staff members to attain their organisational aims.

With regard to situational perspectives, it is thought that managerial staffs are able to perform their roles in a superior manner in those contexts concerned with involvement, that

is; those situations wherein the attainment of duties, thoughts and control are assimilated into a single process. In the case of the organisational culture in question being collectivist in nature, this shall, naturally, have repercussions with regard to the long-term loyalty and relationship of managers concerning that firm (Clarke, 2004). As they have a more in-depth understanding of organisational operations, insider-dominated boards are generally more effective, due to both the access to data and technical expertise, (Muth & Donaldson, 1998). Leadership and control, especially with regard to strategy and decision-making, is made more consistent with the CEO/chairman duality, which is expected to increase firm effectiveness (Donaldson & Davis, 1991).

Due to the fact that insider directors possess a broader and more in-depth understanding of the day-to-day operations of a given firm, their choices are more comprehensively informed. Stewardship theory states that directors are preferred to NEDs as a result of the accuracy of knowledge concerning firm preference. If a board does not have so many inside directors, then it may have less insight into the firm's progression and standing. This in turn, may result in the board having more reliant management-furnished information, along with an absence or limited amount of understanding to make decisions autonomously from management personnel. In the same way, NEDS generally has a similar lack of knowledge, as the board, and reducing their capacity to regulate managers and reject poorly informed decisions by outsider-dominated boards generally results in a diminished firm performance. Indeed, according to stewardship theory, those boards with more insider directors do better in this regard.

#### **4.3.3 Resource Dependency Theory**

Resource dependency theory is more concerned with materialist concerns and less concerned with the firm itself. Indeed, it is mainly focussed on businesses' resources and access to these resources, including expertise and capital resources. In accordance with the theory, corporate governance structures like the board of directors are able to have an impact on the performance of the firm (Pfeffer, 1973). Resource dependency theory favours those boards that have a high percentage of NEDs, as a result of the broader experience and understanding and superior networking they are able to bring about, which generally improves their reputations and their external environments (Haniffa & Hudaib, 2006; Haniffa & Cooke, 2002).

Political and corporate contacts can be facilitated with the use of NEDs, according to Nicholson and Kiel (2007), as they are able to boost networking capacity regarding extrinsic



stakeholders like consumers, other firms (for credit, supply or buying) and the government. As such, NEDs are able to increase resource accessibility, which brings about cheaper input access and so has a beneficial impact on firm performance (Nicholson & Kiel, 2007).

The argument that diversity, with regard to the size of the board and the backgrounds of the directors, has a significant impact when managing a firm concerns present and prospective capital as well as the management environmental contingencies (Pfeffer, 1972; Pfeffer & Salancik, 2003). Furthermore, increased diversification of the board, according to Pearce and Zahra (1992) helps the firm when to endure due to the advantages that diversity brings to a firm. They also, they report that the presence of outsider directors in a board can result in the devising of more efficient strategies that present the firm with original perspectives and ideas, thus increasing the firm's financial performance. Pearce and Zahra (1992) had their views corroborated by Carpenter and Westphal (2001) who suggested that highlighting the links between helps firms to guarantee corporate interests in case of environmental ambiguities (Carpenter & Westphal, 2001; Pearce & Zahra, 1992).

Additionally, this theory highlights those methodological practices a firm must utilise to secure access to financial means. With regard to solvency issues, firms are persuaded to promote representatives from financial sector to the board of directors (Mizruchi & Stearns, 1988). Nevertheless, when a firm is experiences higher levels of banking debt, they are persuaded to promote an officer from the bank who is providing credit crediting them to ensure easy access in the future. Therefore, a simple means of accessing credit is made (Thompson & McEwen, 1958). One report accounts for the fact that there is a notable relationship between firms' borrowing strategies and the identities of financial representatives (Stearns & Mizruchi, 1993).

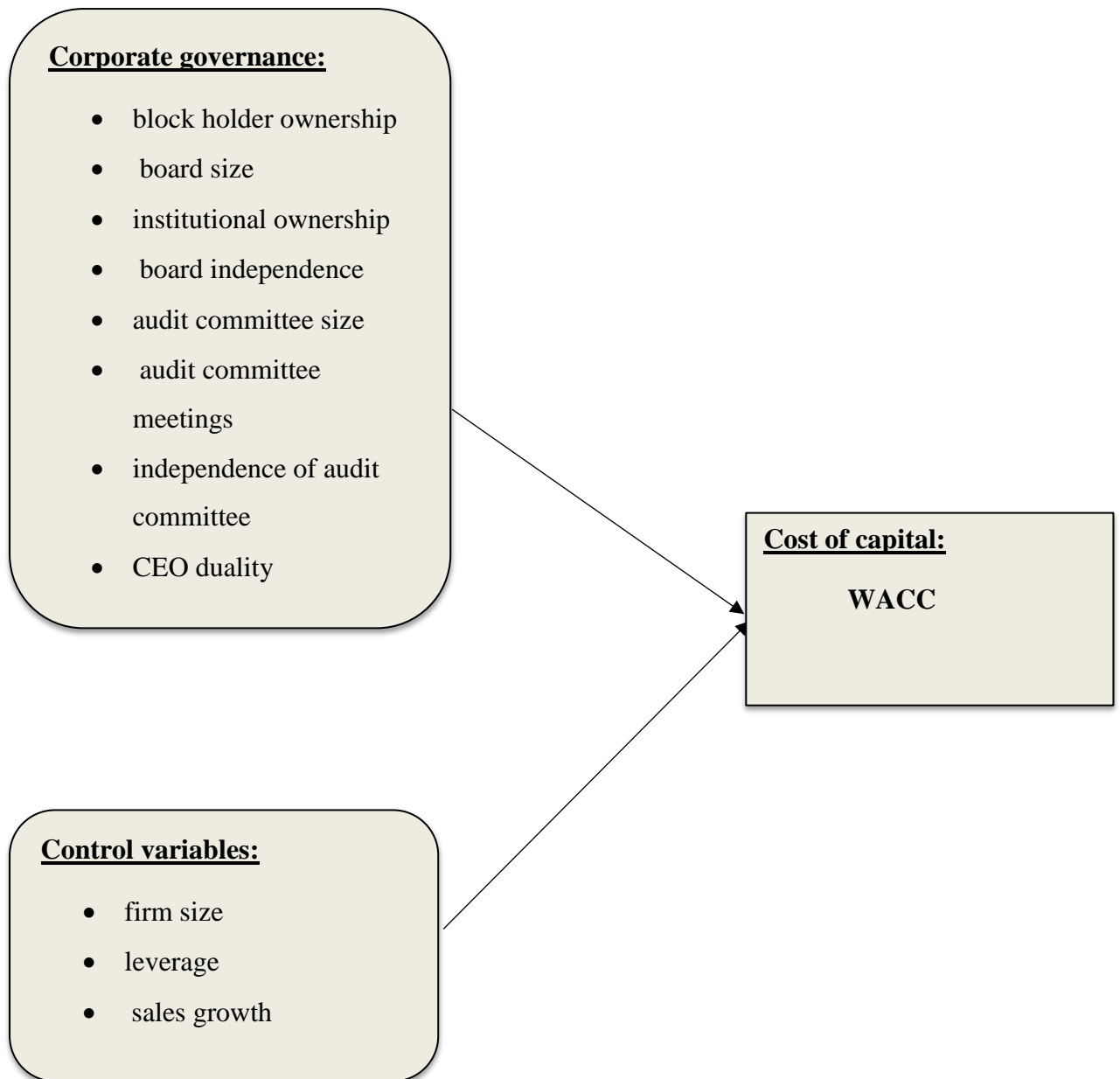
Moreover, scholars have identified that businesses tend to promote financial directors to the board when costs of stock fall or company performance decreases (Kaplan & Minton, 1994). Additionally, if the situation becomes worse, external directors with previous experience should replace internal directors (Hermalin & Weisbach, 1988). The use of external links is recommended by resource dependency theory. This allows value to be added to the firm, so that the firm is able to experience increased and more efficacious performance (Muth & Donaldson, 1998; Nicholson & Kiel, 2007). The argument has been made that emerging markets may be impacted by higher costs, badly devised capital markets and volatility concerning the financial development of the nation in question (Hitt, Dacin, Levitas, Arregle, & Borza, 2000). As a result, firms need to come up with more innovative

means of taking advantage of their board member 'extrinsic links. Thus in developing nations, firms need to maintain links with extrinsic resources.

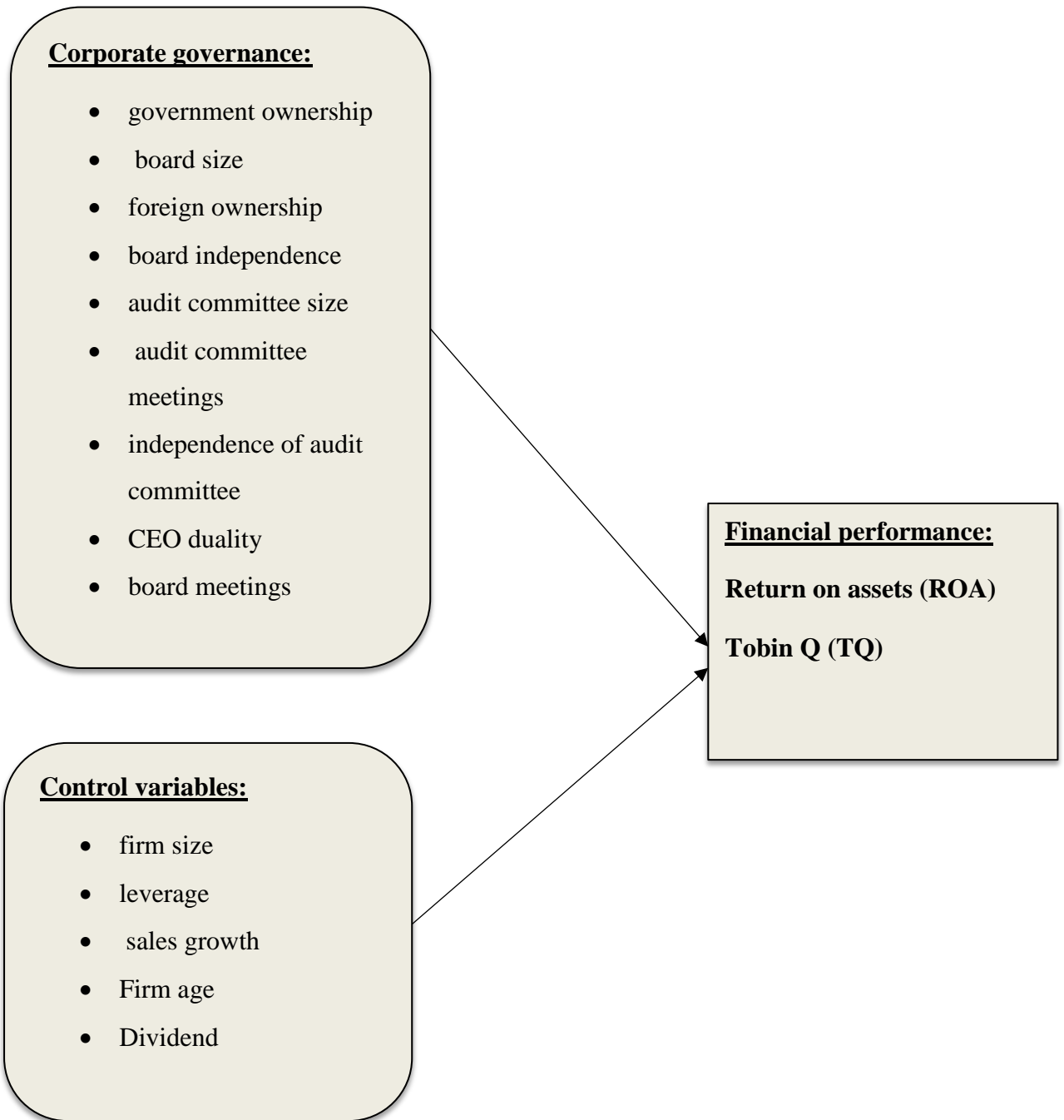
To conclude, this theory deems that the operational environment of a business is mirrored in the board structure of a given firm (Boyd, 1990; Hillman, Cannella, & Paetzold, 2000; Pfeffer, 1972). This claim recommends that directors should be chosen based on their capacity to bring about access to resources. Therefore, the identification of firm dependencies from the composition of the board should be possible. The existence of financiers within the board indicates that the firm is looking for cheap access to monetary or capital resources, which in turn indicates the assumption either that, the firm the firm wishes to make a significant investment, or that it is financial difficulties (Hillman et al., 2000). In the present study, resource dependency and stewardship theories were included only where they were relevant; agency theory was the key theory applied in this study.

#### **4.4 Conceptual Framework**

This study attempts to examine the association between the corporate governance mechanisms and the cost of capital and financial performance of listed Saudi firms. The three variables (WACC, ROA and Tobin's Q) have been used as the dependent variables, while the corporate governance variables (board size, board independence, board meeting, audit committee size, audit committee independence, audit meeting, foreign ownership, institutional ownership, government ownership and block holder ownership ) are the independent variables. The control variables (firm size, leverage, firm age, sales growth and dividend) were chosen from previous studies conducted on the same topic. The conceptual framework of the current study is presented in Figures 4.1 and 4.2.



**Figure 4.1:** Conceptual framework: Influence of corporate governance on the cost of capital



**Figure 4.2:** Conceptual framework: Influence of corporate governance on financial performance

## 4.5 Hypothesis Development

The study aims to evaluate the potential relationship between corporate governance practices and the cost of capital and financial performance. To accomplish this, the theoretical framework (presented in Figures 4.1 and 4.2) was used to create the hypotheses. The hypotheses were based on corporate governance practices and, the application of corporate governance mechanisms to be specific board size, board leadership structure, board composition, audit committee independence and ownership structure, which were reflected in the cost of capital and firm performance. The mechanisms of each variable are examined in this chapter, and the pertinent hypotheses regarding the relationships between corporate governance practices and both the cost of capital and financial performance are outlined. Previously, these variables were discussed in detail in the literature review (Chapter 3).

### 4.5.1 Board of Directors Variables

The board of directors variables include the following: board size, board independence, board meeting, and CEO duality. Each variable is discussed below.

#### 4.5.1.1 Board Size:

Evidence from previous studies on board size suggested that a larger board size may decrease board efficiency in monitoring the administration (Christensen, Kent, Routledge, & Stewart, 2015; Drakos & Bekiris, 2010; Guest, 2009; Hermalin & Weisbach, 1988; Mak & Kusnadi, 2005; Yoshikawa & Phan, 2003). For example, a bigger board creates a free rider issue, and mediates decision making, and members are more averse to reviewing the resolution of top executive (Jensen, 1993). Furthermore, an expansive board is less likely to make key decisions, due to issues with coordination. A few researchers (e.g. Dalton & Dalton, 2005) have postulated the inverse, namely, that a bigger board has a more extensive pool of information and has broader monitoring limits. Nevertheless, the danger of having an excess of members might still exceed the advantages. The average size of boards in Saudi Arabia is eight, which was proposed by Jensen (1993) as being a better board size than that used in the U.S. market. There is a shortage of data on the relationship between board size and the cost of capital. The available evidence showed that board size was negatively associated with cost of capital (Bozec & Bozec, 2011; Shah & Butt, 2009). Therefore, the formulation of hypotheses 1 and 2 are as follows:

H1: There is a significant negative relationship between board size and the cost of capital.

H2: There is a significant negative relationship between board size and financial performance.

#### **4.5.1.2 Board Independence:**

The existence of independent directors contributes to a solid board of directors. The literature has indicated that independent directors may have better qualities other directors, including higher levels of experience and independent judgment (Choe & Lee, 2003; Firth et al., 2002; Weir, 1997). According to Caylor and Brown (2006), the New York, NASDAQ, and AMEX stock exchanges all require that boards of listed firms have a larger proportion of independent executives. Also, one study found that board independence positively affected firm performance (Choi, Park, & Yoo, 2007). This finding was previously confirmed by a study in Turkey that demonstrated a beneficial influence of board independence on firm performance (Tashakori, 1989). In addition, Caylor and Brown (2006) found that companies with a higher percentage of outside executives have higher net revenues, and returns on value, as well as larger profit yields. More recently, a study concluded that companies with a higher percentage of independent directors had greater transparency (Armstrong, Core, & Guay, 2014). Furthermore, a few studies examined the relationship between board independence and the cost of capital (Francis et al., 2005; Schauten & Blom., 2006; Singhal, 2014). These studies found a negative relationship between board independence and the cost of capital. To test the above case in relation to the Saudi context, the following two hypotheses were developed:

H3: There is a significant negative relationship between board independence and the cost of capital.

H4: There is a significant positive relationship between board independence and financial performance.

#### **4.5.1.3 Board Meetings:**

Board meetings play a part in upgrading the supervisory and administrative elements of a board. A number of studies (e.g. Brick & Chidambaran, 2010; Vafeas, 1999) have indicated that board meetings are used as a measure of board movement, which is an essential component of a firm's performance. Moreover, Khanchel (2007) identified a positive relationship between board meetings and a firm's performance. Other scholars have found that the same influence exists for firms operating in developing countries, especially with

regard to the relationship between those two factors (Hasnah, 2009; Kang & Kim, 2012). On the other hand, Hasnah (2009) also observed that a negative relationship existed between board meetings and firm's performance. A limited amount of data has been reported the relationship between board meetings and the cost of capital (Anderson et al., 2004). Nevertheless, results have indicated a negative relationship between the variables. Therefore, the following two hypotheses will be tested in the current thesis:

H5: There is a significant negative relationship between board meetings and the cost of capital.

H6: There is a significant positive relationship between board meetings and financial performance

#### ***4.5.1.4 CEO Duality:***

CEO duality has an important effect on corporate governance components because it appears to influence the relationship between agents and principals (Davis et al., 1997; Krause, Semadeni, & Cannella, 2014). Further, agency theory recommends that CEOs must run the firm with the shareholders' interests in mind (Chen, 2011; Jensen & Meckling, 1976). For example, one study examined the relationship between board composition and performance in a sample of 295 Australian firms in 1996 (Kiel & Nicholson, 2003). The researchers found a positive association between CEO duality and the corporation's performance. Similarly, another study of 660 Australian firms conducted between 2001 and 2004 discovered that the separation of the roles of CEO and executive is significantly related to higher income quality (Christensen et al., 2015). On the other hand, Haniffia and Hudaib (2006) investigated the relationship between CEO duality and firm performance in a sample of 347 Malaysian firms. The results showed a negative relationship between CEO duality and firm performance. Moreover, in a study of 37 West African firms conducted between 2000 and 2009, the results showed that splitting the roles of the CEO and executive improved the firm's value (Hearn, 2011). Further, Al-Abbas (2009), who examined the association between CEO duality and shareholders' returns among 78 Saudi listed companies from 2005 to 2007, found no change in the performance of firms that split the CEO and executive positions. There is a lack of evidence on the relationship between CEO duality and the cost of capital in the literature. A study from India reported a significant positive relationship between CEO duality with WACC including cost of equity and cost of debt (Singhal, 2014). Therefore, the following two hypotheses were developed:

H7: There is a significant positive relationship between CEO duality and the cost of capital.

H8: There is a significant negative relationship between CEO duality and financial performance.

#### **4.5.2 Audit Committee Variables**

The audit committee variables include the following: audit committee size, audit committee independence, and audit committee meetings. Each variable is discussed below.

##### ***4.5.2.1 Audit Committee Size:***

In the literature, the audit committee size was considered a significant factor in confirming the value and quality of financial reporting in corporate governance. Several corporate governance reports have suggested that an audit committee should include a minimum of three members (BRC, 1999; CMA, 2016; NYSE, 2002). By contrast, larger committees have more advantages, including better organisation more authority, and a wider knowledge base (Braiotta Jr, Gazzaway, Colson, & Ramamoorti, 2010; Kalbers & Fogarty, 1993; Karamanou & Vafeas, 2005). Nevertheless, a larger committee can also increase process losses, as well as have the disadvantage of dispersing the members' responsibilities (Karamanou & Vafeas, 2005). There was limited evidence on the relationship between audit committee size and the cost of capital; however, the available studies showed a negative relationship between audit committee size and the cost of capital (Pittman and Fortin, 2004; Beatty 1989; Balvers et al., 1988). Therefore, two hypotheses were developed for the study,:

H9: There is a significant negative relationship between audit committee size and the cost of capital.

H10: There is a significant negative relationship between audit committee size and financial performance.

##### ***4.5.2.2 Audit Committee Independence:***

Audit committee independence is important as it helps to accomplish the arrangements and complete the assignments given to the board members. These arrangements and assignments have an influence on the firm. Therefore, enhancing reviewer independence is vital to the improvement of transparency in financial reporting. The audit committee's independence from the administration and owners improves their oversight; it also ensures that the interests of shareholders are taken into consideration. To be independent, the audit committee must have the capacity to overcome the administration's control of the financial



results (Beasley, 1996). The presence of an independent audit committee indicates the firm's dedication to corporate governance practice (Sommer Jr, 1991). However, the review of the literature has shown mixed results. For example, one study showed that the popular view was that the audit committee members should be independent (Klein, 2002). Indeed, another study identified some positive effects between the quality of financial statements and the audit committee's independence (Petra, 2005). By contrast, one study of listed Nigerian found no relationship between audit committee independence and firm performance (Sanda et al., 2005). Nevertheless, another study indicated that independent members may have a better understanding of financial risks, which means that an independent audit committee may contribute to better share prices (Isaksson & Kirkpatrick, 2009). Similarly, Kyereboah-Coleman (2007) observed that audit committee size had a positive association with the ability to monitor for distortions. Also, the literature reported a significant negative relationship between audit committee independence and the cost of capital (Anderson et al., 2004 Shah & Butt., 2009;). From this overview, the two hypotheses were formulated:

H11: There is a significant negative relationship between audit committee independence and the cost of capital.

H12: There is a significant positive relationship between audit committee independence and financial performance.

#### **4.5.2.3 Audit Committee Meeting:**

The number of meetings an audit committee hold is considered an essential aspect of ability to operate efficiently (Lin, Li, & Yang, 2006). For example, Anderson et al, (2004) suggested that audit committees offer dependable information to shareholders and provide valuable internal control. Thus, a researcher postulated that audit committees support the internal auditing function and supervise the administration's valuation of commercial hazards (Hsu, 2007). Further, through repeated meetings audit committees lower the cost of debt reduce the probability of restatements and limit the existence of lower deficits. As a result, audit committees that hold meetings frequently, tend to worry about the nature and quality of the financial reports; hence, the administration has limited control over the reports. This can also mean that the use of the reports is minimised, but it does reduce the manipulation of the data in the reports. Therefore, the following two hypotheses were developed:

H13: There is a significant negative relationship between audit committee meetings and the cost of capital.

H14: There is a significant positive relationship between audit committee meetings and financial performance.

#### **4.5.3 Ownership Structure Variables**

In the financial literature, the relationship between ownership structure and both the cost of capital and financial performance has received substantial attention (Jiang, 2004; Karaca & Eksi, 2012). Firstly, the identity of the shareholders is reflected by the ownership structure. Thus, the current study categorised ownership structure into four groups; block holder, institutional, government, and foreign ownership. One study demonstrated a positive correlation between ownership concentration and firm performance (Berle & Means, 1932); however, other studies have shown no relationship between the two variables (Demsetz, 1983; Demsetz & Lehn, 1985). Also, Jensen and Meckling's (1976) study indicated that managerial ownership might, result in the development of conflict between manager and owner. Indeed, Demsetz (1983) identified serious agency problems, resulting from high managerial ownership, which leads to management entrenchment.

With reference to the relationship between government ownership and firm performance, one study demonstrated a positive relationship between these two variables in Malaysia (Najid & Rahman, 2011). Similar results were found in Bangladesh and the United Arab Emirates (Aljifri & Moustafa, 2007; Imam & Malik, 2007). However, other studies have revealed a negative relationship between government ownership and firm performance in Bangladesh (Al Farooque, Van Zijl, Dunstan, & Karim, 2007). By contrast, the relationship between foreign ownership and firm performance was found to be positive in the majority of studies identified in the literature review (Chari et al., 2012; Choi et al., 2007; Sueyoshi, Goto, & Omi, 2010). Very few studies found no association (e.g. Shan & McIver, 2011). Furthermore, the literature reported mixed findings regarding the relationship between block holder ownership and the cost of capital. Some studies showed a positive relationship between block ownership and the cost of capital (Bozec et al., 2014; Elston & Rondi, 2006). while another study showed a negative relationship between these variables (Pham et al., 2007). In addition, few studies examined the relationship between institutional ownership and the cost of capital. Those that did reported a negative correlation between institutional ownership and the cost of capital (Piot & Missonier-Piera, 2007; Bhoraj & Sengupta, 2003). Based on the above overview, the following main hypothesis (MH) was developed:

MH: There is a significant relationship between ownership structure and both the cost of capital and financial performance.

Based on this hypothesis, four sub- hypotheses were developed:

H15: There is a significant positive relationship between block holder ownership and the cost of capital

H16: There is a significant negative relationship between institutional ownership and the cost of capital

H17: There is a significant positive relationship between government ownership and financial performance

H18: There is a significant positive relationship between foreign ownership and financial performance

## **4.6 Conclusion**

In this chapter, definitions of corporate governance have been provided based on both shareholder and stakeholder perspectives. In addition, agency theory, resource dependency theory, and stewardship theory were reviewed. Following the analysis of each, agency theory was used as the main theory to examine the relationship between corporate governance and both the cost of capital and firm performance. The privileging of agency theory is related to the separation of ownership and control of the firm, as agency theory is focusses on the conflicts of interest between shareholders and directors. Thus, it is crucial that corporate governance mechanisms attempt to safeguard shareholders' as well as lower the cost of capital and improve firm performance. Following from this investigation, the chapter presented study's conceptual framework, which encapsulated the following components: the corporate governance mechanisms, cost of capital and financial performance of non-finance listed Saudi firms. Finally, hypotheses were developed and presented based, on both the conceptual framework developed for the study and the empirical findings from the literature review in the previous chapter. The hypotheses predict the relationships between corporate governance mechanisms (board size, board independence, audit committee size, audit committee meeting, audit committee independence, block ownership, institution ownership, and CEO duality) and the cost of capital measured by WACC. Also, the hypotheses predict the relationships between corporate governance mechanisms (board size, board independence, board meetings, audit committee size, audit committee meetings, audit committee independence, foreign ownership, government ownership, and CEO duality) and

firm performance as measured by ROA and Tobin's Q. The following chapter will explain the research methods in depth.

# Chapter Five: Research Methodology

## 5.1 Introduction

Previous chapters have provided the theoretical and empirical framework for this study. The present chapter explains research methodology, data and variables used in this analysis. This chapter is organised as follows: section 5.2 presents the philosophy underlying the research. Section 5.3 presents the research methodology used in this study. Section 5.4 explains data collection including sample selection and data sources. Section 5.5 provides the measurement of the study's variables including independent, dependent and control variables. Section 5.6 discusses the empirical approaches of this study. Section 5.7 explains the regression models, and section 5.8 concludes the chapter.

## 5.2 The Philosophy of the Research

The selection of a suitable philosophical paradigm is among the first and crucial steps of any research project (Burrell & Morgan, 1979), especially those pertaining to the field of social sciences. The paradigm adopted in this study is positivism, which focusses on the identification of consistencies and causal relationships between the components comprising a social event or phenomenon in order to shed light on that event or phenomenon (Burrell & Morgan, 1979). In keeping with this, relevant analysis approaches and theoretical assumptions are employed to gain an understanding of the topic under consideration, namely, the extent to which organisational performance is affected by corporate governance. The positivist paradigm is usually associated with deductive reasoning, that involves the formulation of generalisations on the basis of causal connection between a set of variables (Saunders, Lewis, & Thornhill, 2009). There are a number of reasons why a deductive approach is more suitable for this study than an inductive one, as follows:

- Reliance on scientific principles instead of subjective perceptions for the interpretation of a phenomenon;
- Focus on hypothesis assessment rather than theory formulation;
- Identification of causal relationships between variables instead of an explanation of research context;
- Use of quantitative data;
- A greater degree of structure;

- Reliance on analytical approaches instead of people's experiences and views, enabling the researcher to remain independent;
- Ability to generalise conclusions, provided that the sample is large enough.

As highlighted by Robinson (2002), the deductive approach consists of a series of stages:

- Formulation of verifiable hypotheses about relationships between variables on the basis of a relevant theoretical framework;
- Explanation of a hypothesis testing process and measurement of variables based on operational definition;
- Implementation of a particular strategy to assess the operational hypotheses; in the present case, such a strategy seeks to identify the causal relationship between variables and therefore can be labelled as an experimental research strategy;
- Putting experimental results to the test to validate the hypotheses or uncover aspects that need to be rectified (Robinson, 2002).

According to Burrell and Morgan (1994), the deductive approach is underpinned by the functionalist paradigm, which states that the population is governed by regulations and positivism is employed by the epistemology due to its higher degree of objectivity. The current research objectives have been formulated in keeping with the idea that relevant instruments of research analysis can be employed to investigate and empirically verify the extent to which corporate governance influences organisational performance. Therefore, positivism is applied to deduce the law of occurrence, which, based on scenarios that can be replicated, can not only shed light on the causal relationships between the research variables, but can also delineate potential correlations that could help to elucidate why a certain phenomenon happens. To this end, a suitable research strategy must be developed to evaluate the hypotheses that have been formulated (Collis & Hussey, 2013; Saunders et al., 2009).

In short, the present study employs the deductive approach which is considered to be the best suited because this study's research philosophy is based on the fact that the study aims to assess existing hypotheses by analysing quantitative data, rather than proposing a new theory.

### **5.3 Research Methodology**

The research approach employed must be consistent with and relevant to the research issues under consideration (Punch, 2013). Research approaches can be largely divided into two major categories, namely, quantitative and qualitative research approaches. Qualitative research seeks to comprehend a phenomenon by adopting a descriptive and non-numerical

strategy of data collection. It is characterised by flexibility and dynamism, enabling it to capture subtleties of individual behaviour and attitude to explore social processes as they evolve over time (Babbie, 2015; Berg, 2004). By contrast, quantitative research relies on various forms of statistical analysis, facilitates measurement, is reliable and permits the formulation of generalisation (Babbie, 2015; Bryman, 2015; Collis & Hussey, 2013). Furthermore, the ability to generalise is enhanced by quantitative research as it investigates social phenomena over longer stretches of time and uses larger population samples. To consolidate results and validate interpretations, the two approaches are often used together.

In the present study, the deductive approach that is based on the positivist paradigm is applied, with the existing theoretical framework being drawn upon for hypothesis formulation, as a result of the challenge of acquiring sufficient data via interviews or surveys carried out with various companies. The tested hypotheses will be confirmed or invalidated based on the empirical results. In accordance with this, the primary analysis tool is regression in order to ensure that individuals' subjectivity does not influence the results obtained (Ardalan, 2012), as specified by the positivist paradigm. More specifically, multiple regression analysis is used because it is the most suitable analysis approach for studies including one metric variable and at least two independent variables (Hair, Black, Babin, & Anderson, 2010), as is the case with this study. The suitability of this type of regression analysis is further reinforced by the fact that it has been frequently applied in earlier studies exploring how corporate governance was correlated to factors such as the cost of capital and organisational performance (Anderson & Reeb, 2003; Claessens et al., 2000; Khanna & Palepu, 2000).

## **5.4 Data Collection**

### **5.4.1 Sample Selection**

The target population for this study is Saudi Stock Exchange (SSE) listed non-finance companies, during the period from 2006 to 2014. This sample period was selected, because the governance codes in Saudi were established, respectively, at the beginning of 2006, and the time period studied allows for the assessment of governance regimes in the country. Study sample firms were selected by using the following settings:

- The firm's annual reports must be available for all nine years from 2006 to 2014, either on the SSE website, the Thomas Reuters Data Stream and the firm's website.
- No alteration occurred in the included firms during the study period such as merger.

- Firms' annual reports and stock market data were available for the five-year period.

After the implication of the above criteria, this study selected the final sample from secondary sources. After refinement, the sample consisted of 84 Saudi listed firms that comprised 756 firm-years observations (84 firms over nine years each) in Saudi. On the other hand, the financial and insurance sector were excluded from the sample for different reasons such as significant variances in the application of accounting rules the extraction of accounting appraisals and the various regulatory restrictions for these companies compared to their non-finance counterparts in terms of liquidity valuation and profitability: in addition, these firms work through different set of instructions and rules (Abed, Al-Attar, & Suwaidan, 2012; Al-Fayoumi, Abuzayed, & Alexander, 2010; Al-Najjar, 2011; Estrin, Hanousek, Kočenda, & Svejnar, 2009; Jiraporn, Singh, & Lee, 2009).

In developing countries in general, the non-finance sectors are of the greater significance in the stock market. The classification of the non-finance sample of firms in Saudi according to their sector is shown in Table 5.1. As shown in Table 5.1, the sample is distributed in several sectors in the SSE including the; Agriculture & Food industries (15.47%), Petrochemical Industries and Industrial Investment and Building & Construction (11.19%), Cement and Multi-Investment (9.52%), Retail (8.3%), Transport (3.57%) and Energy & Utilities; Telecommunication & Information Technology; Media & Publishing and Hotel & Tourism (2.38%).



**Table 5.1: Saudi non-finance sector of the sample firms**

Non-finance Sector	Number of firms	% of sample
Petrochemical Industries	10	11.9
Cement	8	9.52
Retail	7	8.33
Energy & Utilities	2	2.38
Agriculture & Food Industries	13	15.47
Telecommunication & Information Technology	2	2.38
Multi-Investment	6	7.14
Industrial Investment	11	13.09
Building & Construction	11	13.09
Real Estate Development	7	8.33
Transport	3	3.57
Media & Publishing	2	2.38
Hotel & Tourism	2	2.38
<b>Total</b>	<b>84</b>	<b>100</b>

#### 5.4.2 Data Sources

In this study, the data was collected from several secondary sources. The base data was taken from the annual reports published by Saudi listed non-finance firms. The annual reports for Saudi firms are published in the Public Shareholding Firms Guides issued by SSE database. This guide contains data for all firms listed on the SSE between 2006 and 2014.

In this study, Thomas routers DataStream and the firms' website databases were also used to collect some corporate governance data, firm age data and financial data during the period from 2006 to 2014 in the SSE (see Appendix).

### 5.5 Measurements of Variables

#### 5.5.1 Dependent Variables

##### 5.5.1.1 Cost of Capital (WACC):

To measure the cost of capital the researcher obtained the estimated WACC from previous studies (Miles & Ezzell, 1980; Modigliani & Miller, 1958, 1963), which is debatably the most widely used method of calculating the cost of capital in the real world

(Ross, Westerfield, & Jaffe, 1998). In this study the WACC equation will be applied for a firm that is using common share (equity) and bond (debt) financing is as below:

$$WACC = r = wdrd(1-t) + were$$

Where,  $r_d$  denotes the market rate on the firm's outstanding debt as the cost of debt and  $r_e$  denotes the cost of equity which is regularly calculated through the CAPM:  $w_d$  is the percentage of the firm's debt and  $w_e$  are the percentage of the firm's equity; the percentage of debt is the value of debt / value of debt plus value of equity and the percentage of equity is value of equity / value of debt plus value of equity. In this situation  $w_d + w_e = 1$  for the reason that debt and equity are the only sources of the firm's financing. In this equation  $t$  denotes the tax rate on business income. The standard treatment in WACC in order to mirror the deductibility of interest payments is  $(1-t)$ . In this procedure the interest cost of debt will decline. The cost of debt is measured as interest paid on long-term borrowing.

#### **5.5.1.2 Financial Performance:**

Drawing on prior studies (Black, Jang, & Kim, 2006; Claessens & Fan, 2002; Gompers et al., 2003; Klapper & Love, 2004), the researchers previously of these studies noticed that corporate governance affects firm value as a result of reduced expropriation through improvement in the expected cash flows that can be distributed to investors. There are many methods of financial performance. Financial methods of firm performance used in experiential research on corporate governance fit into both accounting-based and market-based methods (Kiel & Nicholson, 2003). Generally, the best accounting based-measures to use are return on assets (ROA) (Kiel & Nicholson, 2003) and, Tobin's Q-ratio as market-based measures (Baysinger & Butler, 1985). Haniffa and Hudaib (2006) found that an important association exists between the accounting based methods of performance and shared leadership structure. In this study, the ROA and Q-ratio will be used.

##### **5.5.1.2.1 Return on Assets (ROA)**

ROA is also a method of performance that is widely used in the governance literature for accounting-based methods (Finkelstein & D'aveni, 1994; Kiel & Nicholson, 2003; Weir & Laing, 2001); it is calculated as the operating profit divided by the value of total assets.

#### 5.5.1.2.2 Tobin's-Q

Another major method of financial performance that is used in corporate governance research is Tobin's Q-ratio, which is also a market-based measure. It is calculated as following: (Adams & Mehran, 2012; Chung & Pruitt, 1994).

Tobin's  $q = (MVE + PS + DEBT) / TA$

*Where:*

MVE= (closing price of share at the end of the financial year) \*(Number of common shares outstanding)

PS=liquidating value of the firm's outstanding preferred stock;

DEBT= (current liabilities - current assets + book value of inventories + long term debt)

TA=book value of total assets.

#### 5.5.2 Independent Variables (Corporate Governance)

Previous literature has suggested that corporate board structure, ownership structure, and audit committee structure were the main factors that affect the cost of capital and firm performance (Agrawal & Knoeber, 2012; Anderson et al., 2004; Baxter & Cotter, 2009; Black, 2005; Börsch-Supan & Köke, 2002; Brown & Caylor, 2006; Chaghadari, 2011; Frank & Goyal, 2003; Gompers et al., 2003; Larcker et al., 2007; Xie, Davidson III, & DaDalt, 2003). Thus, this study employed the previous measures to examine the relationship between each of the corporate governance variables and the cost of capital and financial performance (Table 5.2).

The variables associated with corporate board structure include: board size, board independence, board meetings, and CEO duality. The ownership structure variables include block ownership, insider ownership, government ownership, and foreign ownership. Finally, the audit committee structure variables consist of audit committee independence, audit committee size and audit committee meetings. These corporate governance variables were defined and measured according to the previous empirical studies that examined the cost of capital and financial performance (Table 5.2). Literature regarding the relationship between these mechanisms and the cost of capital and financial performance (both theoretical and empirical) has been explained in depth in chapter three.

### **5.5.3 Control Variables**

The current study has employed a number of control variables that may affect the depending variables and decrease possible variables bias. These control variables included firm size, firm age, leverage, sales growth, and dividend. Previous studies have employed similar control variables (Al-Janadi, Rahman, & Omar, 2013; Al-Nodel & Hussainey, 2010; Al-Tuwaijri, Christensen, & Hughes II, 2004; Bharath, Pasquariello, & Wu, 2009; Drobetz et al., 2004; Frank & Goyal, 2003; Haniffa & Cooke, 2002; Ramaswamy, 2001).

#### **5.5.3.1 Firm Size:**

Firm size is a significant variable impacting good corporate governance practices (Samaha, Dahawy, Hussainey, & Stapleton, 2012). Larger firms have access to more resources that may encourage essential strategic change for progressing firm performance and lowering the cost of capital (Majumdar, 1997; Short & Keasey, 1999). Previous literature has used firm size as a control variable (Agrawal & Knoeber, 1996; Bebczuk, 2005; Chen, Cheung, Stouraitis, & Wong, 2005; Farooque et al., 2007; Kiel & Nicholson, 2003; Kowalewski, Stetsyuk, & Talavera, 2008; Majumdar, 1997; Mitton, 2002; Pham, Suchard, & Zein, 2011; Schultz, Tan, & Walsh, 2010; Short & Keasey, 1999; Wellalage & Locke, 2012). Firm size is measured as the logarithm of total assets (Black, Love, & Rachinsky, 2006; Bozec, Dia, & Bozec, 2010; Mitton, 2002).

#### **5.5.3.2 Leverage:**

Financial leverage is the second control variable used in this study. It is a significant variable that affects both the cost of capital and financial performance. Numerous studies have used the leverage ratio as a control variable (Agrawal & Knoeber, 1996; Aivazian, Booth, & Cleary, 2003; Bozec et al., 2010; Chen et al., 2005; McConnell & Servaes, 1995; Wellalage & Locke, 2012; Wintoki et al., 2012). In the current study, the leverage ratio is measured as the total liabilities divided by total assets to examine the relationship between the leverage ratio and the cost of capital and financial performance (Drobetz et al., 2004; Lemmon & Lins, 2003; Monem, 2013; Xia & Zhu, 2009).

#### **5.5.3.3 Firm Age:**

Firm age is an important variable that may influence financial performance younger firms are generally less effective than older firms. The definition of firm age is the number of years that have elapsed since the firm was established on the stock exchange (George, 2005). In the present study, the number of years the firm has been listed on the stock market was used as the firm age.

#### **5.5.3.4 Dividend:**

Dividend is the fourth control variable that was used in this study. Previous research supports the relationship between good corporate governance practices and dividends (Adjaoud & Ben-Amar, 2010; Archambault & Archambault, 2003). In the current study, the measurement of firm dividend was a dummy variable that takes a value of 1 if a firm paid dividends during the financial year, and 0 if a firm did not paid dividends during the financial year.

#### **5.5.3.5 Sales Growth:**

Growth of sales is usually complemented by the existence of good management and a board of directors that interests' investors (Chen, 2011). It also indicates an increased need for external capital (Beiner, Drobetz, Schmid, & Zimmermann, 2006; Chung & Zhang, 2011). Growing firms may need to develop better corporate governance practices in order to decrease their financing costs (Bozec et al., 2010; Klapper & Love, 2004). Thus, sales growth was added as a control variable in this study and it is measured as the current year's sales minus last year's sales on last year's sales (Henry, 2008; Laidroo, 2009; Ntim & Soobaroyen, 2013).

#### **5.5.3.6 Industry Dummies:**

Since different firms are diverse in operations and corporate governance practices according to then type of industry; researchers in corporate governance tend to control for the industry dummies variables as doing so may affect the association between dependent and independent variables. The differences between firms may be due to variations in the ownership structure and business nature (Haniffa & Cooke, 2002; Hussainey & Al-Nodel, 2008). Hence, based on the previous literature (Barako, Hancock, & Izan, 2006; Bozec et al., 2010; Haniffa & Cooke, 2002; Ntim et al., 2012; Samaha et al., 2012), industry dummies were used as control variables in this study to capture any potential industry type heterogeneity. Thirteen industry dummies were included in the designed model to avoid the dummy variable trap.

#### **5.5.3.7 Year Dummies:**

In the present study, nine-year dummy variables (from 2006-2014) were included in the model to avoid any unobserved heterogeneity (Barako et al., 2006; Haniffa & Cooke, 2002; Ntim et al., 2012; Samaha et al., 2012).

**Table 5.2:** study's variables measurement

<b>Variables</b>	<b>Measurement Technique</b>
<i>Dependent variables</i>	
Financial performance:	Return on asset (ROA) & Tobin Q (TQ)
<ul style="list-style-type: none"> <li>• Return on asset (ROA)</li> <li>• Tobin Q (TQ)</li> </ul>	<p>The operating profit divided by the value of total assets.</p> <p>Market value of assets plus long term liabilities plus inventories plus total current liability minus total current assets by book value of assets.</p>
Cost of capital (WACC)	weighted average cost of capital
<i>Independent variables</i>	
Board size (BSIZE)	Number of directors on the board
Board independence (BIND)	The ratio of the number of non-executive directors to the total number of directors on the board
Board meeting (BMEET)	Number of board meetings during the current financial year
CEO Duality	Coded "1" if Chairman also holds the position of CEO and "0" otherwise
Audit committee size (ACS)	Total number of directors on the audit committee
Audit committee meetings (ACM)	Number of audit committee meeting per year
Audit committee independence (ACI)	Number of independent directors in audit committee.
Block ownership (BLOCK)	Code "1" if fraction of total outstanding shares held by the block holders is greater than 5% (not considered state ownership) and "0" otherwise
Insider ownership (INSID)	Total proportion of shares owned by institutions.
Government ownership (GOV)	Total proportion of shares owned by government.
Foreign ownership (FORN)	Total proportion of shares owned by individuals and institutional investors
<i>Control variables</i>	

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Firm size (FSIZE)	Natural log of total assets
Leverage (LR)	Firm total liabilities/total assets
Sales Growth (SGROWTH)	Current year's sales minus last year's sales to last year's sales
Firm age (FAGE)	The length of time that the firm's common stock has been traded on Tadawul
Dividend (DIVD)	Current year's sales minus last year's sales to last year's sales
Industry dummies (INDS-DUMM)	A dummy variable for each industry on the stock market (classified to thirteen industries)
Year dummies (YEAR-DUMM)	A dummy variable for each year of the sample period (nine years) from 2006 to 2014

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## 5.6 Empirical Approaches

In the present study, a pair of primary regression models was used to examine the impact that corporate governance mechanisms have on the cost of capital and financial performance in listed firms operating in Saudi Arabia. One regression model investigated the connection between corporate governance mechanisms and company performance, and the other referred to the connection between corporate governance and dividend policy. In an attempt to understand the relationship among corporate governance mechanisms, the cost of capital and financial performance, the research also utilised three different empirical approaches: the pooled least squares method (OLS); the fixed effects (FE) or random effects (RE) model; and the generalised least squares model (GLS).

### 5.6.1 Pooled OLS Regression

The extant literature relating to corporate governance has evolved in a number of crucial ways over the past decade. Panel data is being increasingly used as a result of the contemporary understanding of the complexities associated with econometrics, but it should be noted that it is complicated to utilise. However, it is the most effective method at present. In relation to the association among corporate governance mechanisms, corporate performance, and the cost of capital, the majority of empirical investigations have utilised the OLS method; this is a systematic model that has the capacity to include a range of independent variables. The model can be expressed in the following way, with dependent variable (Y) and multiple explanatory variables ( $X_{i1}, X_{i2}, \dots, X_{i\alpha}$ ):

$$y_i = \beta_0 + \beta_1 X_{i1} + \varepsilon_i \quad (1)$$

Where,  $Y_i$  is the observed dependent variable value  $i$  and  $\beta_1, \beta_2, \dots, \beta_\alpha$  are parameters;  $X_1, X_2, \dots, X_\alpha$  are the values of independent variables in observation  $i$  and  $\varepsilon_i$  is a random term having a zero mean and constant variance. This means that it can express the error term as normally distributed in the following way:

$$\varepsilon_i \sim N(0, \sigma^2 I)$$

It should be noted that, in the context of panel data, the OLS regression is not straightforward to handle on account of the fact that it neglects the panel structure and considers information to be cross-sectional (Arellano & Honoré, 2001; Roodman, 2009). Furthermore, momentary and spatial challenges may result from the utilisation of the OLS regression in combination with panel data; this is particularly the case with panel data that frequently presents momentarily and spatially associated errors in addition to heterogeneity (Beck & Katz, 1995). In light of this, it is important to factor in potential biases for OLS regressions that utilise panel data as the model has a concealed heterogeneity problem. This issue is conventionally addressed by applying FE or RE models.

### **5.6.2 Panel Techniques (FE or RE Models)**

The majority of previous studies that have examined the impact of corporate governance mechanisms on company performance and the cost of capital have employed panel data analysis. A study conducted by Brooks (2014) has explained that panel data is data, covering both time and space, which relates to a common individual or cross-section (Brooks, 2014). The present research utilises a panel data research design for analytical purposes due to the benefits it has when considered in relation to cross-section or time-series information. Hsiao (2003) discussed the strengths associated with panel data prediction approaches:

- Panel data has extensive observations.
- Panel data limits collinearity among variables.
- Panel data approaches are reliable and stable to a greater degree in terms of parameter predictions.
- Panel data can be used effectively in examining the dynamic aspects of alteration and complexity in behavioural models.
- Panel data is subject to greater variability, which means that it has a lower degree of aggregation in relation to firms and individuals (Hsiao, 2003).



It is notable that panel data approaches are compact to a greater degree than cross-section data approaches. Due to the fact that every successive data timeframe is inextricably linked to the preceding timeframe, it is occasionally necessary to alter the standard error term. Cameron and Trivedi (2009) stated that “panel data requires the use of much richer models and estimation methods. Also different areas of applied statistics is an acronym for cross-section time series, cover many of these methods” (Cameron & Trivedi, 2009). OLS regression results are frequently partial in relation to unobserved heterogeneity issues and, thus, two methods are adopted in investigations: the FE or the RE model. The FE controls for the impact that time-invariant variables with time-invariant effects can have; contrastingly, the RE model operates on the assumption that time-invariant nation-state features  $\alpha_i$  are not associated with the regression  $X_i$ . In this way, FE and RE are the two statistical models that can be utilised, and the present thesis will examine the two approaches to assess panel data.

### 5.6.3 Fixed-Effects Model (FE)

The value of the FE model can be seen insofar as it is effective in examining the influence of fluctuating variables. The utilisation of the FE model assists the researcher in determining the nature of the association among predictor and outcome variables in the context of an entity (i.e. a nation or a firm). A firm’s unique features can have an impact on the dependent variables, and the FE model proceeds on the basis of the assumption that dependent variables can be subject to change in this way; as a result, it is necessary for the study to take measures to compensate for this. In line with this assumption, it can be clearly stated that no correlation should exist between the entity’s error term and its individual features. Moreover, applying the FE model will eliminate the impact that the time-invariant features have. An additional assumption associated with the FE model is that the time-invariant features are particular to only one unit. The formula for the fixed-effects model can be written in the following way:

$$y_i = \alpha_i + \beta_1 X_i + \mu_i \quad (2)$$

Where,  $y_i$  is the dependent variable with  $i$  entity and  $t$  time, and  $X_i$  represents independent variables.  $\alpha_i$  is the random individual-specific impacts for each entity,  $\beta$  is the coefficient for explanatory variables, and  $\mu$  is the error term (Gujarati, 2009).

### 5.6.4 Random-Effects Model (RE)

One of the critical purposes of the RE model, which is also referred to as the error components model, is to investigate the unique aspects of panel data. On the basis of the RE

model, the intercepts are comparable for every cross-sectional unit. Furthermore, the random deviation of every entity's intercept value is measured by a random variable  $\varepsilon_i$ . The formula for the random-effects model can be written in the following way:

$$y_i = \alpha + \beta_1 X_i + \omega_i \quad \omega_i = \mu_i + \varepsilon_i \quad (3)$$

Where  $\omega_i = \mu_i + \varepsilon_i$ , which is called the composite error, consists of two components:  $\mu_i$  - the cross-section or firm-specific error element - and  $\varepsilon_i$  - the total time-series and cross-section error element.

### 5.6.5 Hausman Test

It is common for researchers to base their decisions on experimental requisites, such as the Hausman test (Hausman, 1978) when selecting either an FE or RE model. The purpose of the test is to assist authors in choosing between the two models; RE takes it for granted that independent variables are not related to the impact that the unit has. Despite this, no correlation between the independent variables and the unit impacts is observed, after that  $\beta$  in the FE model ( $\beta^{FE}$ ) is comparable to  $\beta$  in the RE model ( $\beta^{RE}$ ). The test assesses the predictions of various models:

$$H = (\beta^{FE} - \beta^{RE})' [\text{Var}(\beta^{FE}) - (\beta^{RE})]^{-1} (\beta^{FE} - \beta^{RE}) \quad (4)$$

Where  $\beta^{FE}$  is the FE estimator with the variance-covariance matrix  $\text{Var}(\beta^{FE})$ , and  $\beta^{RE}$  is the RE estimator with the variance-covariance matrix of  $\text{Var}(\beta^{RE})$ .

Cameron and Trivedi (2009) explain how the Hausman test is used in order to determine whether to apply the FE or RE model. The process it engages in first examines the null hypothesis that favours the RE model and, following this, considers it in relation to a contrasting hypothesis that favours the FE model. In situations where the P-value is not statistically significant, the RE model can be utilised appropriately and safely; if this requirement is not met, then the FE model should be employed. Therefore, in essence, the Hausman test examines the null hypothesis that the predictions provided by the RE model are identical to those of the FE model. In addition, it examines the rejection of the null hypothesis, which suggests that the FE model is suitable to a greater degree than the RE model. Resultantly, the present research cannot control for the possibility of dynamic endogeneity and, in combination with this, the impacts of simultaneity are not addressed in the FE regression. Thus, this study utilises the dynamic system GLS model in relation to dynamic endogeneity, simultaneity, and unobservable heterogeneity.

### 5.6.6 Endogeneity Issues

The concept of endogeneity is regarded by many researchers as the key area of study in corporate governance. In the context of a regression model, endogeneity refers to the association between the independent variables and the error term; when endogeneity issues are present, partial and unobserved heterogeneity can result. Therefore, it is important to recognise that the initial stage in handling endogeneity is to determine what the issue is. Specifically, investigators should clarify which variables are endogenous and, furthermore, their endogeneity should be explained and accounted for. The extant research relating to the association between corporate governance mechanisms and firm performance has reached a general consensus that the association is complex on account of endogeneity concerns.

Regression models suffer from endogeneity challenges as a result of a number of factors, including the neglecting of variable biases, assessment errors, and simultaneity/reverse causation. The Hausman test for endogeneity is frequently employed in the literature when researchers attempt to identify whether a model suffers from endogeneity problems; the test is valuable as it is effective in examining the extent to which a regression is endogenous. In situations where minimal variance between OLS and IV estimations is observed, there is no instrumental requirement. Furthermore, the conclusion can be drawn that a feature of the regression was endogeneity. Alternatively, if substantial variance is observed, there is an instrumental requirement and the regression is endogenous.

Numerous investigations in the extant and related literature argue that specific governance structures can facilitate enhanced company performance. Despite this, a range of notable researchers (Ammann, Oesch, & Schmid, 2011; Denis & Kruse, 2000; Hermalin & Weisbach, 1991; Himmelberg, Hubbard, & Palia, 1999; Pham et al., 2011; Schultz et al., 2010; Wellalage & Locke, 2012; Wintoki et al., 2012), report that company performance, along with different governance features, is an endogenous issue. The present investigation carries out a regression by employing the pooled and panel models (FE) therefore, it should be noted that pooled OLS and panel models can be limited with respect to causality or endogeneity issues among endogenous independent and dependent variables. In light of this, the research analyses endogeneity issues in corporate governance variables by employing the Durbin-Wu-Hausman (DWH) experiment for endogeneity (Durbin, 1954; Hausman, 1978; Wu, 1973).

Building on notable findings in the extant and related literature, the present research considered the equations and, in turn, investigated the extent to which board scale, board

independence, and managerial ownership were formulated in an endogenous way. The DWH experiment was also applied in order to serve as a diagnostic test for endogeneity in firm performance indicators and a range of variables. The findings collected from the DWH supported the endogeneity impact in relation to board scale, board independence, and managerial ownership. The findings provide evidence to suggest that OLS and RE predictions are not reliable and impartial, and they also indicate that the dynamic system GLS estimator is favourable.

### **5.6.7 GLS Estimator**

The parameters of a linear regression model that are not known can be determined with the method of GLS, in cases where there is either inequality (heteroscedasticity) between observation variances or some level of equivalence among observations. The appropriateness of the GLS regression stems from the fact that it can rectify the overlooked variable bias when autocorrelation and heteroscedasticity occur in pooled time series data. There must not be any correlation between the errors and explanatory variables in the same time period otherwise the pooled OLS estimator will lack consistency and impartiality, leading to statistical inefficiency of ordinary least squares or even inaccurate deductions. In this study, Random-Effects models were estimated based on GLS, as this method enables variations between cross-sectional units to be analysed at the same time as variations within separate units across time (Gaur & Delios, 2006).

## **5.7 Regression Models**

The current study has been carried out in two different phases; an evaluation of the relationship between corporate governance and the cost of capital; and an examination of the relationship between corporate governance and financial performance. These two phases are explained in detail below.

With regards to the relationship between corporate governance and the cost of capital, one of the main objectives of this study is to examine the potential relationship between corporate governance mechanisms and the cost of capital in Saudi Arabia listed non-finance firms. In this study, the panel data technique was used (Börsch-Supan & Köke, 2002; Himmelberg et al., 1999; Schultz et al., 2010). Furthermore, seven separate OLS regression models were conducted: model 1 includes ownership variables (block, insider, foreign and government ownership); model 2 comprises board structure variables (board independence, board size, board meetings, CEO duality, audit committee size, audit committee meetings and

audit committee independence); model 3 involves ownership variables with board structure variables; model 4 includes ownership variables, board structure and control variables; model 5 comprises model 4 with dummies variables for time; model 6 includes model 4 with dummy variables for industries and finally, model 7 includes model 4 with all dummy variables. The next stage analysis between corporate governance mechanisms and the cost of capital is the panel model (FE model or RE model). The last stage to test the causal relationship between governance variables and the cost of capital is the GLS. Thus, the present study carried out regressions using OLS, RE and GLS. It included two equations. The first equation is listed below:

Equation (1): A regression equation was adapted from (Börsch-Supan & Köke, 2002) to test the correlation between corporate governance and the cost of capital.

$$\text{Cost of capital} = \alpha + \beta 1 \text{ BSIZE} + \beta 2 \text{ BIND} + \beta 3 \text{ BMEET} + \beta 4 \text{ CEO Duality} + \beta 5 \text{ ACIND} + \beta 6 \text{ ACMEET} + \beta 7 \text{ ACS} + \beta 8 \text{ INSID} + \beta 9 \text{ BLOCK} + + \beta 10 \Sigma X + \mu$$

Whereas, the cost of capital is a dependent variable measured by the WACC. The independent variables of corporate governance are board size, board independence, board meetings, CEO duality, audit committee independence, audit committee meetings, audit committee size, block ownership and insider ownership,  $\Sigma X$  is a vector of control variables (firm size, leverage, and sales growth), and  $\mu$  is the error term.

On the other hand, the second main objective of this study is to examine the relationship between corporate governance variables and financial performance. The panel data technique and the seven separate OLS regression models that have been explained previously were conducted. After that the RE and GLS were applied. Therefore, the second equation is listed below:

Equation (2): A regression equation was adapted from (Börsch-Supan & Köke, 2002) to test the association between corporate governance and financial performance.

$$\text{Firm financial performance} = \alpha + \beta 1 \text{ BSIZE} + \beta 2 \text{ BIND} + \beta 3 \text{ BMEET} + \beta 4 \text{ CEO Duality} + \beta 5 \text{ ACIND} + \beta 6 \text{ ACMEET} + \beta 7 \text{ ACS} + + \beta 8 \text{ GOVERNMENT} + \beta 9 \text{ FORGN} + \beta 10 \Sigma X + \mu$$

Where, firm financial performance is a dependent variable measured by ROA, and TQ. The independent variables of corporate governance are board size, board independence, board meetings, CEO duality, audit committee independence, audit committee meetings, audit committee size, government ownership and foreign ownership,  $\Sigma X$  represents the

control variables (firm size, leverage, firm risk, firm age and sales growth and dividend), and  $\mu$  is the error term.

## 5.8 Conclusion

This chapter has provided the philosophical underpinnings of the current research. It also discussed the research methodology in depth including data sources and measurement of study variables. The secondary data regarding the firm's corporate mechanisms, the cost of capital, and financial performance were largely collected from the Tadawul database, Thomas Reuters DataStream and the firms' website databases. The final sample size included 84 non-financial firms listed on the SSE (Tadawul). The final sample covers nine years of data, from 2006 to 2014. Furthermore, the current chapter explained the two models that were employed; first, the relationship between corporate governance variables (measured as board structure, audit committees structure and ownership structure) and the cost of capital measured as the WACC in Saudi Arabia listed non-finance firms. The second model examined the relationship between corporate governance (measured as board structure, audit committees structure and ownership structure) and financial performance measured by ROA and Tobin's Q.

The present study employed three regression techniques in order to examine the previous models. The three methods of regression included: first, pooled OLS regression this is followed by panel data models, both random- and fixed-effect, to control for any unnoticed heterogeneity. Third, a GLS was used for further investigation focusing on the peculiar problems of causality and endogeneity. In the following chapter, descriptive statistics and results of the empirical analysis regarding the relationship between corporate governance mechanisms and both the cost of capital and financial performance were providing.

## Chapter Six: Empirical Data Analyses

### 6.1 Introduction

The previous chapters provided research methodology, sample selection and data sources, measurements of variables and regression models. This chapter presents the descriptive statistics and the results of the empirical analysis of the relationship between corporate governance and cost of capital as well as financial performance in Saudi Arabia listed firms. This chapter offers details regarding the statistical indicators and the regression analysis between corporate governance and the cost of capital as well as financial performance in Saudi Arabia listed firms. This chapter is organised as follows: Section 6.2 presents descriptive statistics of Saudi Arabian listed firms. Section 6.3 discovers the correlation analysis of variables. Section 6.4 provides results and discussion from regression models for pooled and GLS regression model. Finally, section 6.5 offers conclusions.

### 6.2 Descriptive Statistics

This study consisted of 756 firm-year observations in Saudi Arabia. The final sample was comprised of 84 Saudi listed firms over the period from 2006 to 2014.

Table 6.1 presents descriptive statistics for all variables of the cost of capital, firm performance, corporate governance and control variables for Saudi Arabia listed firms. The first part is for the cost of capital, financial performance sample, the second part is for corporate governance variables, and the last part is for control variables. As reported in the table, the mean and median value of cost of capital (WACC) is 0.092 and 0.090. The mean and median of Tobin's Q is 1.50 and 1.16. The mean and median of ROA is 0.097 and 0.080.

With respect to the corporate governance variables, Table 6.1 shows corporate governance variables in Saudi Arabia listed firms. The mean proportion of insider's ownership (INSID) has reached 0.767, which clearly shows that managerial ownership is a clear phenomenon in Saudi listed firms. This may be due to the large family ownership that clearly appears in the Saudi industrial firms. The average proportion of shares held by block shareholders (BLOCK) is 0.337. The mean for foreign ownership (FORN) is 0.695 and the mean for government ownership (GOV) is lower at 0.094. For board independence (BIND), board size (BSIZE) and board meetings (BMEET) show that on average, board independence is 0.396 with a median of 0.40, among the board members, 40% are non-executive board

members in the Saudi listed firm. The average board consists of 8 directors which reflects the size of the Saudi listed firms. The board size in Saudi listed firms seems to play a significant role to mitigate agency conflicts. The mean (median) number of Saudi firms' board meetings during the financial year is 5.29 (5). In terms of CEO duality (CEO Duality), table 6.1 shows that the mean of the CEO duality is 0.185 in Saudi listed firm's the sample includes the same position for the chairman and the chief executive officer. Moreover. Table 6.1 shows that the mean (median) of Saudi firms' audit committee size is 3.33 (3), the mean (median) number of Saudi firms' audit committee meetings during the financial year is 5.06 (5), the mean value of the proportion of audit committee independence in the Saudi firm sample is 0.184.

With regards to the control variables, the last part shows that the Saudi firm sample has mean (median) firm size (FSIZE), as measured by natural log of total assets is 14.5 (14.45). The mean (median) leverage ratio (LEVERAGE) is 0.741 (0.42). The mean (median) sales growth (SGROWTH) is 0.110(0.09). The firm age (FAGE) as reported in the Saudi companies was 25 years. The mean (median) dividend is 0.637 (0.091) in the Saudi companies.

Finally, the Saudi listed firms' sample encompasses 13 different industry types, namely: 15.48% food and construction, 14.02% building and construction, 13.10% industrial investments, 11.90% petrochemical, 9.52% cement, 8.33% retail, 7.41% real estate development, 7.14% multi-investment, and 3.57% transport; as well as 2.38% for energy, hotel & tourism, media & publishing and telecommunication & information.



**Table 6.1:** Descriptive Statistics of cost of capital, firm performance, corporate governance and control variables (Saudis non-finance firms)

Variables	N	Mean	Std	P25th	P50th (median)	P75th	Min	Max	Skewness	Kurtosis
<b>WACC</b>	756	0.092	0.035	0.07	0.09	0.115	0	0.21	0.466	2.919
<b>TQ</b>	756	1.50	1.12	0.82	1.16	1.79	0.02	8.69	2.616	12.692
<b>ROA</b>	756	0.097	0.077	0.04	0.08	0.13	0.01	0.47	1.437	5.212
<b>BLOCK</b>	756	0.337	0.209	0.15	0.30	0.445	0.05	0.95	0.722	2.825
<b>INSID</b>	756	0.767	0.422	1	1	1	0	1	-1.264	2.598
<b>FORN</b>	756	0.695	0.460	0	1	1	0	1	-0.851	1
<b>GOV</b>	756	0.094	0.187	0	0	0.12	0	0.83	2.512	8.631
<b>BIND</b>	756	0.396	0.181	0.20	0.40	0.5	0.10	0.90	0.457	2.540
<b>BSIZE</b>	756	8.41	1.51	7	9	9	5	13	0.134	2.541
<b>BMEET</b>	756	5.29	1.95	4	5	6	1	14	0.927	4.129
<b>CEO Duality</b>	756	0.185	0.388	0	0	0	0	1	1.620	3.627
<b>ACS</b>	756	3.33	0.562	3	3	4	3	7	1.631	5.929
<b>ACM</b>	756	5.06	1.93	4	5	6	1	13	1.413	5.499
<b>ACI</b>	756	0.184	0.077	0.10	0.20	0.20	0.10	0.5	1.175	5.506
<b>FSIZE</b>	756	14.5	1.68	13.32	14.45	15.28	10.89	19.64	0.595	3.427
<b>LEVERAGE</b>	756	0.741	0.818	0.20	0.42	0.975	0.01	5.16	2.217	8.983
<b>SGROWTH</b>	756	0.110	0.243	0.005	0.09	0.185	-0.75	2.5	2.005	18.978
<b>FAGE</b>	756	24.94	12.42	17	23	32	1	59	0.546	3.057
<b>DIVD</b>	756	0.637	0.481	0	1	1	0	1	-0.572	1.327

### 6.3 Correlation Matrix Analysis

Table 6.2 presents a pair-wise correlation matrix among the dependent, independent and control variables for Saudi listed firms. The main purpose is to measure the strength of the linear relation between dependent and independent variables. The literature review shows that multicollinearity problems exist when the independent variables are highly correlated with ( $r = 0.90$ ) and above. As a result, Table 6.2 indicates that most independent variables are statistically significant with low relationship; this indicates that the multicollinearity problem might not appear between independent variables. To confirm this, the study employs the variance inflation factors (VIF) of variables to determine if the multicollinearity problem exists between independent variables. Tables 6.3 and 6.4 show that the variance inflation factors is less than 10, indicating there is no multicollinearity problem between independent variables for Saudi listed firms.

Table 6.2 illustrates the correlation between corporate governance and cost of capital as well as financial performance. From this table the following important points are found. The number of shares owned by block ownership has a significant positive related to ROA, but is not significantly related with the cost of capital and Tobin's Q. The number of shares held by insider owners has a significant positive relationship with regards to cost of capital and Tobin's Q, but is significantly negatively linked to ROA. Similar, foreign ownership has a significant positive relationship with both cost of capital and Tobin's Q, while not being significantly related with ROA. In addition, the results show that government ownership has a negative relationship with cost of capital. However, it is positively significantly correlated with ROA, but not significant with Tobin's Q.

The board independence and board size components have a significant negative relationship to the cost of capital and Tobin's Q, but no significant relationship with ROA. The board meetings have no significant relationship with either dependent variable. The CEO duality has a significant negative relationship to Tobin's Q and ROA, but no significant correlation with cost of capital. The audit committee size has a significant negative relationship with both costs of capital and Tobin's Q, but no significant relationship with ROA. Audit committee meetings have a significant positive related to the cost of capital. The proportion of independent directors on an audit committee has a significant negative correlation with all dependent variables.

With respect to control variables, firm size appears to have a significant negative relationship with all dependent variables. The leverage ratio also shows a significant negative association with the cost of capital ROA, but a positive correlation with Tobin's Q. Sales growth has a significance negative correlated to Tobin's Q, but has no significant with cost of capital and ROA. Similarly, a dividend has a significant negative correlation to Tobin's Q, but a positive relationship with ROA. Lastly, firm age has a significant positive relationship to all dependent variables.

**Table 6.2:** Pearson correlation for all variables in Saudis non-finance listed companies (N=756)

Variables	WACC	TQ	ROA	BLOCK	INSID	FORN	GOV	BIND	BSIZE	BMEET
WACC	1.000									
TQ	0.062*	1.000								
ROA	-0.047	0.357***	1.000							
BLOCK	-0.008	-0.045	0.086**	1.000						
INSID	0.082**	0.107***	-0.078**	-0.347***	1.000					
FORN	0.089***	0.142***	-0.048	-0.339***	0.799***	1.000				
GOV	-0.096***	-0.027	0.0774**	0.530***	-0.624***	-0.551***	1.000			
BIND	-0.108***	-0.114***	-0.046	0.221***	-0.205***	-0.239***	0.238***	1.000		
BSIZE	-0.133***	-0.224***	0.008	0.171***	-0.214***	-0.340***	0.181***	0.299***	1.000	
BMEET	-0.019	0.040	-0.005	0.227***	-0.211***	-0.204***	0.315***	-0.011	0.134***	1.000
CEO Duality	-0.056	-0.078**	-0.082**	-0.081**	0.125***	0.026	-0.070**	-0.066*	0.028	-0.053
ACS	-0.0131***	-0.073**	-0.051	0.114***	-0.233***	-0.213***	0.406***	0.322***	0.264***	0.347***
ACM	0.061*	-0.001	-0.036	0.060*	-0.113***	-0.112***	0.189***	0.008	0.020	0.242***
ACI	-0.069*	-0.065*	-0.079**	.278***	0.002	0.045	0.159***	0.396***	0.147***	0.179***
FSIZE	-0.164***	-0.362***	-0.102***	0.469***	-0.497***	-0.553***	0.536***	0.203***	0.503***	0.230***
LEVERAGE	-0.244***	0.232***	-0.190***	0.028	-0.068*	-0.050	0.098***	0.059	0.131***	-0.008
SGROWTH	-0.031	-0.102***	-0.030	0.033	-0.073**	-0.111***	0.003	-0.022	0.057	0.023
FAGE	0.155***	0.109***	0.185***	-0.016	-0.113***	0.034	0.008	0.002	-0.022	0.182***
DIVD	-0.024	-0.153***	0.160***	0.196***	-0.239***	-0.265***	0.178***	0.112***	0.251***	0.142***

Pearson correlation cont.

	CEO	ACS	ACM	ACI	FSIZE	LEVERAGE	SGROWTH	FAGE	DIVD
CEO Duality	1.000								
ACS	0.042	1.000							
ACM	0.108***	0.106***	1.000						
ACI	-0.097***	0.398***	0.043	1.000					
FSIZE	0.022	0.313***	-0.019	0.168***	1.000				
LEVERAGE	-0.045	0.197***	-0.049	0.120***	0.394***	1.000			
SGROWTH	-0.009	-0.03	-0.088**	-0.001	0.110***	0.148***	1.000		
FAGE	-0.150***	0.010	0.212***	0.150***	-0.150***	-0.177***	-0.102***	1.000	
DIVD	-0.108***	0.122***	0.117***	0.111***	0.288***	-0.022	0.018	0.281***	1.000

\*\*\* Denotes correlation is significant at the 0.01 level (2-tailed); \*\* Denotes correlation is significant at the 0.05 level (2-tailed); \* Denotes correlation is significant at the level 0.10 level (2-tailed). All variables are as previously defined.

**Table 6.3:** Variance Inflation Factors of the relationship between corporate governance and cost of capital relationships of Saudis non-finance listed firms

Independent Variables	Dependent variables WACC						
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
BLOCK	1.14		1.31	1.54	1.55	1.95	1.95
INSID	1.14		1.33	1.59	1.60	2.23	2.24
BIND		1.35	1.40	1.42	1.44	1.67	1.69
BSIZE		1.15	1.17	1.48	1.49	1.78	1.78
BMEET		1.25	1.32	1.34	1.35	1.85	1.86
CEO Duality		1.04	1.07	1.10	1.13	1.22	1.26
ACS		1.44	1.51	1.57	1.58	1.74	1.74
ACM		1.08	1.09	1.12	1.15	1.28	1.31
ACI		1.34	1.49	1.50	1.50	1.92	1.93
FSIZE				2.58	2.66	4.07	4.21
LEVERAGE				1.34	1.35	1.84	1.86
SGROWTH				1.05	1.11	1.08	1.15
DUM-YEAR					YES		YES
DUM-INDS						YES	YES
<b>Mean VIF</b>	<b>1.14</b>	<b>1.24</b>	<b>1.30</b>	<b>1.47</b>	<b>1.64</b>	<b>1.84</b>	<b>1.87</b>

**Table 6.4:** Variance Inflation Factors of the relationship between corporate governance and financial performance relation of Saudis non-finance listed firms

Independent Variables	Dependent variables Tobin's Q and ROA						
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
FORN	1.44		1.69	1.95	1.96	2.49	2.50
GOV	1.44		1.74	2.03	2.05	2.35	2.37
BIND		1.35	1.42	1.44	1.46	1.73	1.75
BSIZE		1.15	1.25	1.54	1.55	1.85	1.85
BMEET		1.25	1.31	1.36	1.37	1.85	1.87
CEO Duality		1.04	1.05	1.11	1.13	1.23	1.26
ACS		1.44	1.56	1.62	1.63	1.83	1.85
ACM		1.08	1.10	1.20	1.21	1.38	1.40
ACI		1.34	1.43	1.50	1.51	1.99	2.03
FSIZE				2.78	2.88	3.75	3.86
LEVERAGE				1.37	1.38	1.84	1.87
SGROWTH				1.06	1.13	1.09	1.16
FAGE				1.30	1.36	1.72	1.84
DIVID				1.30	1.31	1.44	1.45
DUM-YEAR					YES		YES
DUM-INDS						YES	YES
<b>Mean VIF</b>	<b>1.44</b>	<b>1.24</b>	<b>1.39</b>	<b>1.54</b>	<b>1.68</b>	<b>1.87</b>	<b>1.91</b>

## 6.4 Regression Models

The previous section presented the results highlighting the descriptive statistics and correlation analysis. This section uses a regression model analysis and employs OLS regression, panel models (FE and RE), and the Hausman test to select either an FE or RE model. GLS regression with a robust standard error to test the developed research hypotheses was also used. To examine the relationship between corporate governance and the cost of capital as well as financial performance, first; the relationship between corporate governance and the cost of capital, as well as the results of pooled OLS regression analysis was reported by dividing the regression models into seven subsidiary regression models; Model 1 includes ownership variables (block, insider, foreign and government ownership). Model 2 includes board structure variables (board independence, board size, board meetings, CEO duality, audit committee size, audit committee meetings and audit committee independence). Model 3 involves ownership variables with board structure variables. Model 4 includes ownership variables, board structure and control variables. Model 5 comprises Model 4 with dummy variables for time. Model 6 includes Model 4 with dummy variables for industries. Finally, Model 7 includes Model 4 with all dummy variables. Secondly, the results of panel model (FE or RE) are also reported. Finally, in line with corporate governance literature, pooled OLS and panel model regressions are faced some statistical problems such as heterogeneity and biased results. Therefore, some authors suggested that with these problems we might move to GLS regression, because the GLS estimates permit control for autocorrelation and heterogeneity. This research employed GLS regression. To examine the association between corporate governance and the cost of capital, this study uses STATA Version 12 and three alternative models; the first is OLS; the second is panel technical (FE & RE models); the final is GLS regression.

### 6.4.1 OLS Regression Results of the Relationship between Corporate Governance and the Cost of Capital

To examine the relationship between corporate governance and the cost of capital, seven models of independent variables are reported with the cost of capital measured by the WACC as a dependent variable, while the seven regression models have been explained above. Table 6.5 presented the results of OLS regression.

**Table 6.5:** OLS Regression Results of the relationship between corporate governance and cost of capital is measured by WACC for Saudis non-financial listed firms (2006-2014)

Independent Variables	Dependent variable WACC						
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
_cons	0.086*** (22.32)	0.129*** (13.46)	0.118*** (11.10)	0.116*** (7.22)	0.128*** (11.18)	0.111*** (5.72)	0.137*** (9.87)
BLOCK	0.004 (0.62)		0.008 (1.24)	0.008 (1.09)	<b>0.012**</b> (2.23)	0.006 (0.73)	<b>0.013**</b> (2.32)
INSID	<b>0.008**</b> (2.58)		<b>0.006**</b> (2.02)	<b>0.005*</b> (1.71)	-0.001 (-0.41)	0.003 (0.88)	-0.002 (-0.89)
BIND		-0.010 (-1.30)	-0.009 (-1.12)	-0.012 (-1.52)	-0.001 (-0.11)	<b>-0.020**</b> (-2.35)	-0.006 (-1.15)
BSIZE		<b>-0.002**</b> (-2.20)	<b>-0.002**</b> (-2.12)	-0.002 (-1.42)	-0.001 (-0.82)	-0.000 (-0.20)	0.000 (0.61)
BMEET		0.000 (0.10)	0.000 (0.11)	-0.000 (-0.46)	-0.000 (-0.09)	-0.001 (-0.72)	0.000 (0.19)
CEO Duality		<b>-0.006*</b> (-1.76)	<b>-0.007**</b> (-1.97)	<b>-0.008**</b> (-2.25)	0.002 (1.06)	<b>-0.010***</b> (-2.93)	0.001 (0.50)
ACS		<b>-0.006**</b> (-2.44)	<b>-0.005**</b> (-1.98)	-0.002 (-0.79)	<b>-0.003*</b> (-1.67)	-0.001 (-0.38)	-0.002 (-0.92)
ACM		<b>0.001**</b> (2.07)	<b>0.002**</b> (2.19)	<b>0.001*</b> (1.93)	-0.000 (-0.30)	<b>0.002**</b> (2.23)	0.000 (0.11)
ACI		-0.004 (-0.20)	-0.015 (-0.81)	-0.008 (-0.44)	0.009 (0.70)	-0.014 (-0.65)	0.013 (0.81)
LOGFSIZE				-0.000 (-0.06)	<b>-0.003***</b> (-3.91)	-0.000 (-0.30)	<b>-0.005***</b> (-4.46)
LEVERAGE				<b>-0.010***</b> (-6.57)	<b>-0.010***</b> (-9.37)	<b>-0.009***</b> (-5.12)	<b>-0.011***</b> (-9.05)
SGROWTH				0.002 (0.39)	<b>0.005*</b> (1.70)	0.000 (0.09)	0.003 (1.08)
YEAR-DUM					YES		YES
INDS-DUM						YES	YES
Observations	756	756	756	756	756	756	756
Adjusted R-squared	0.005	0.030	0.032	0.075	0.596	0.084	0.610
F-test	3.389	5.190	4.424	9.674	52.117	7.136	38.277
P-value	0.034	0.000	0.000	0.000	0.000	0.000	0.000

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined

Table 6.5 presents the results of OLS estimations of the association between corporate governance variables and the cost of capital of Saudi listed firms. Table 6.5 presents the OLS regression results of the cost of capital as measured by the WACC, on the all independent variables. Column 2 of Table 6.5 reports the results of OLS regression of the WACC on



ownership structure (block ownership BLOCK and insider ownership INSID). Column 3 shows the findings of board structure variables (board independence BIND, board size BSIZE, board meeting BMEET, CEO Duality, audit committee size ACS, audit committee meeting ACM and audit committee independence ACI), column 4 of Table 6.5 presents the results of ownership structure variables and the board structure variables. Column 5 of Table 6.5 provides the results of OLS regression of ownership structure, board structure and control variables, whilst columns 6 to 8 provide the results of OLS for all variables including dummy variables for Saudi listed firms.

The results of Table 6.5 show that the F-test of each model is statistically significant at the 1% level except for Model 1. This suggests that the coefficients of corporate governance variables in this study can be explained by significant variations in the cost of capital. The adjusted R-square is also displayed for each model and ranges from 0.005 to 0.610, suggesting that the corporate governance variables play an important role in explaining the variations in Saudi firms' cost of capital.

The findings in Model 1 of Table 6.5 show that insider ownership INSID has a significant positive effect on the cost of capital, indicating that higher managerial ownership, correlates to a lower cost of capital. However, block holding, or BLOCK is not significant in relation to the cost of capital. Model 2 in Table 6.5 shows that the board size BSIZE, CEO duality and audit committee size have a significant negative effect on the cost of capital, indicating that board size and audit committee size supported the reduction of agency costs and resulted in a reduced cost of capital. The findings also reveal that CEO duality is represented to allow a reduction in the cost of capital. However, audit committee meetings ACM have a significant positive effect on the cost of capital, suggesting that more audit committee meetings equate to higher cost of capital. In addition, the results show that other variables such as board independence BIND, board meetings BMEET, and audit committee independence ACI do not have significant relationship with the cost of capital. In Model 3, the findings show the same results in Model 1 in Table 6.5; insider ownership INSID has a significant positive effect on the cost of capital. Moreover, the findings in Model 3 are similar to the findings in Model 2, board size BSIZE, CEO duality and audit committee size ACS have a significant negative effect on the cost of capital. Conversely, audit committee meetings ACM have a significant positive effect. After we added control variables, the findings for Model 4 show results that are similar to those presented in Model 3, in which insider ownership INSID and audit committee meetings ACM have a significant positive

effect on the cost of capital. However, CEO duality and leverage ratio have significant negative effects. Model 5 in Table 6.5 shows that block ownership BLOCK only has a significant positive effect on the cost of capital, suggesting that the higher the block ownership, the higher the cost of capital as measured by the WACC. However, audit committee size, firm size and leverage ratio are negatively significantly related with the cost of capital. Model 6 in Table 6.5 shows that the category of audit committee meeting is positively significantly related to the cost of capital. In contrast, the results of OLS showed that board independence, CEO duality and leverage appear to have a significant negative effect on the cost of capital, with respect to control variables and year-industry dummy variables. The results of Model 7 in Table 6.5 show that block ownership is positively related to the cost of capital. However, firm size and leverage ratio have a negative effect.

#### **6.4.2 Fixed-effects and Random-effects Regression Results of the Relationship between Corporate Governance and the Cost of Capital**

According to the literature review, OLS estimation may lead to estimators' biased and spurious results. Therefore, the relationship between corporate governance variables and the cost of capital is also estimated by using a panel model. In line with the literature, this study runs FE regressions to control for possible unobserved firm-level heterogeneities. Furthermore, to analyse panel data, OLS estimations may be inconsistent and meaningless if heterogeneity exists across firms (Hsiao, 2003). The FE and RE models can take into account the heterogeneity across firms by allowing variable intercepts. The choice between these models is based on Hausman Test and is applied to assess for an FE model versus an RE (Cameron & Trivedi, 2009). So it tests the null hypothesis is that the preferred random effects model and alternative that the fixed effects model is preferred. This means that if the P-value is insignificant then it is safe to use an RE model. If it is significant then the FE model should be used.

Table 6.6 provides the results of OLS estimations as well as panel models for the cost of capital with the corporate governance variables of Saudi listed firms.

**Table 6.6:** Panel Regression Results of the relationship between corporate governance and the cost of capital measured by WACC for Saudis non-financial listed firms (2006-2014)

Dependent variable WACC			
Independent Variables	OLS Model	Fixed-effects Model	Random-effects Model
_cons	0.137*** (9.87)	0.203*** (3.55)	0.139*** (7.64)
BLOCK	<b>0.013**</b> (2.32)	0.060 (1.04)	<b>0.013*</b> (1.75)
INSID	-0.002 (-0.89)	-0.015 (-1.06)	-0.002 (-0.52)
BIND	-0.006 (-1.15)	0.004 (0.36)	-0.003 (-0.49)
BFSIZE	0.000 (0.61)	-0.001 (-0.61)	0.000 (0.34)
BMEET	0.000 (0.19)	-0.000 (-0.35)	0.000 (0.13)
CEO Duality	0.001 (0.50)	-0.010** (-2.36)	-0.002 (-0.61)
ACS	-0.002 (-0.92)	-0.004 (-0.98)	-0.003 (-1.09)
ACM	0.000 (0.11)	0.003** (2.23)	0.000 (0.77)
ACI	0.013 (0.81)	0.034 (0.84)	0.016 (0.83)
LOGFSIZE	<b>-0.005***</b> (-4.46)	-0.009*** (-2.90)	<b>-0.005***</b> (-3.59)
LEVERAGE	<b>-0.011***</b> (-9.05)	-0.011*** (-5.04)	<b>-0.011***</b> (-7.18)
SGROWTH	0.003 (1.08)	0.006* (1.84)	0.005 (1.53)
YEAR-DUM	YES	YES	YES
INDS-DUM	YES	YEs	YES
Observations	756	756	756
Wald Chi			1236.24
Hausman Test			27.61
Hausman_P-value			0.1515

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined

Table 6.6 provides the findings of panel models for the relationship between corporate governance and the cost of capital. The second column shows the pooled OLS model findings, the third and fourth columns report the panel models results: the FE model and the RE model. The decision to select one these two models is made according to Hausman Test,

which is 27.61 with P-value = 0.1515 (insignificant at a 5% level). Thus, this result from the Hausman Test suggests that the RE model is more efficient than the FE model.

The results of the RE model are provided in Column 4 of Table 6.6. They show that block ownership has a significant positive effect on the cost of capital, indicating that block ownership is capable of colluding with managers to expropriate minority shareholders therefore their existence may lead to an increase in the cost of capital. This result is similar to the result was found in OLS. Moreover, the findings show that other governance variables have no significant relationship with the cost of capital.

With respect to control variables, the results reveal that the firm size and leverage ratio has a significantly negative relationship with the cost of capital, indicating that an increase in the firm size and leverage ratio significantly decreases the cost of capital.

#### **6.4.3 GLS Regression Results of the Relationship between Corporate Governance and the Cost of Capital**

This research performs regression by using both the pooled and panel models. Nevertheless, OLS and panel models (FE and RE) may suffer from time-varying country effects, autocorrelation and heterogeneity problems. Hence, this study employed Generalized Least Squares (GLS) model, because GLS estimates permit control for autocorrelation and heterogeneity. GLS estimators are appropriate when one or more assumptions of homoscedasticity and non-correlation of regression errors fail (Cameron & Trivedi, 2009), thus, this research employed GLS regression. To examine the association between corporate governance and the cost of capital, this study concluded that the GLS may be appropriate and that our panel model results may be misleading.

**Table 6.7:** GLS Regression Results of the relationship between corporate governance and the cost of capital measured by WACC for Saudis non-financial listed firms (2006-2014)

Independent Variables	Dependent variable WACC					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
CONS	0.084*** (27.68)	0.113*** (15.09)	0.096*** (7.49)	0.116*** (13.00)	0.093*** (5.97)	0.128*** (11.75)
BLOCK	0.005 (1.08)		0.005 (0.89)	<b>0.017***</b> (4.33)	-0.002 (-0.33)	<b>0.015***</b> (3.30)
INSID	<b>0.005**</b> (2.28)		<b>0.006**</b> (2.39)	-0.000 (-0.12)	0.002 (0.53)	-0.002 (-1.06)
BIND		<b>-0.013**</b> (-2.01)	<b>-0.012**</b> (-1.97)	<b>-0.007*</b> (-1.78)	<b>-0.018***</b> (-2.74)	<b>-0.013***</b> (-3.02)
BSIZE		-0.001 (-1.50)	<b>-0.001*</b> (-1.65)	0.000 (0.52)	-0.001 (-0.71)	<b>0.001**</b> (2.21)
BMEET		-0.000 (-0.06)	-0.001 (-1.15)	-0.000 (-1.00)	-0.001 (-1.19)	-0.000 (-0.12)
CEO Duality		<b>-0.006**</b> (-2.04)	<b>-0.008***</b> (-2.94)	0.002 (0.87)	<b>-0.010***</b> (-3.86)	-0.000 (-0.21)
ACS		<b>-0.003*</b> (-1.74)	-0.001 (-0.39)	-0.002 (-1.42)	-0.000 (-0.13)	-0.001 (-0.75)
ACM		<b>0.002***</b> (2.91)	<b>0.001**</b> (2.42)	0.000 (0.04)	<b>0.002***</b> (2.69)	0.000 (0.97)
ACI		-0.020 (-1.35)	<b>-0.024*</b> (-1.65)	0.005 (0.50)	-0.023 (-1.42)	0.018 (1.60)
LOGFSIZE			0.001 (1.07)	<b>-0.003***</b> (-4.72)	0.001 (0.90)	<b>-0.005***</b> (-5.46)
LEVERAGE			<b>-0.010***</b> (-8.95)	<b>-0.010***</b> (-10.29)	<b>-0.009***</b> (-6.67)	<b>-0.010***</b> (-9.26)
SGROWTH			0.003 (0.63)	<b>0.008***</b> (3.29)	-0.000 (-0.10)	<b>0.006**</b> (2.49)
YEAR-DUM				YES		YES
INDS-DUM					YES	YES
Observations	756	756	756	756	756	756
Wald Chi2	5.270	36.043	168.993	1669.893	255.583	1793.294
P-value	0.0717	0.0000	0.0000	0.0000	0.0000	0.0000

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined

The results of Table 6.7 show that the Wald-test of each model is statistically significant at 1% except for Model 1, which is statistically at 10%, suggesting that all of the models that were used are valid. Table 6.7 presents the results of GLS regression with robust standard error of corporate governance on the cost of capital as measured by the WACC on all of the governance and control variables. Column 2 of Table 6.7 reports the results of GLS regression of ownership structure (block ownership BLOCK and insider ownership INSID).

Column 3 shows the findings of board structure variables (board independence BIND, board size BSIZE, board meeting BMEET, CEO Duality, audit committee size ACS, audit committee meeting ACM and audit committee independence ACI), Column 4 of Table 6.7 presents the results of ownership types variables and board structure variables. Column 5 of Table 6.7 provides the results of GLS regression of ownership, board structure and control variables, whilst columns 6 to 8 provide the results of GLS regression for all variables including dummy variables for Saudi listed firms.

Table 6.7 reports the results of estimating Model 1. The outcome indicates that insider ownership INSID is significantly positively related with the cost of capital, indicating that a higher level of insider ownership positively affects the cost of capital in Saudi firms. The positive relationship of insider ownership indicates that the presence of the higher percentage of insider ownership leads to an increase in the cost of capital. No significant relationship was found between block ownership BLOCK and the cost of capital. Table 6.7 reports the result of estimating Model 2. The findings find that board independence BIND and CEO duality have a significant negative effect on the cost of capital. The negative effect of board independence indicates the key role of a board of directors. Audit committee size ACS also has a significant effect on the cost of capital. However, audit committee meeting ACM has a significant effect on the cost of capital. The results of Model 3 in Table 6.7 show that the results of insider ownership INSID and audit committee meeting ACNM remain the same results, INSID and ACM are still slightly statistically significant with a positive effect on the cost of capital, while the board independence and CEO duality still suggest a slightly significant negative effect. By adding control variables using GLS regression, the results show that board size and audit committee independence have a significantly negative effect on the cost of capital. Only the leverage ratio shows a significant negative effect on the cost of capital. When we added the year dummy variable, the results of Model 4 in Table 6.7 showed that board independence remains the same result. BIND still has a slightly significantly negative effect on the cost of capital, while the block ownership has a significant effect on the cost of capital. Regarding control variables, the results showed that firm size, sales growth and leverage ratio have a significant negative effect on the cost of capital. In Model 5 the results showed that audit committee meeting has a significant effect, while board independence and CEO duality have a significant negative effect on the cost of capital. Regarding control variables, the findings revealed that leverage ratio still has a negatively significant effect on the cost of capital.

The analysis of the results in Model 6 showed a significant positive effect of block ownership BLOCK on the cost of capital, indicating that the higher the block ownership, the higher is the cost of capital. Similarly, the results indicate that an increase in board size BSIZE significantly increase the cost of capital. However, board independence BIND still has a significant negative effect, indicating that BIND in all remaining models have a significantly negative effect on the cost of capital and these results highlight the importance of board independence on the cost of capital. With respect to control variables, the results showed that sales growth is positively significant related to the cost of capital. Nevertheless, firm size and leverage ratio have a significant effect on the cost of capital.

#### **6.4.4 OLS Regression Results of the Relationship between Corporate Governance and Financial Performance**

Tables 6.8 and 6.9 present the results of OLS estimations of the association between corporate governance variables and the financial performance of non-financial Saudi listed firms for each performance variable. Tables 6.8 and 6.9 present the OLS regression results of the performance variables Tobin's Q and ROA, respectively, on all corporate governance variables and control variables.

Table 6.8 presents the results of the OLS estimations of the association between corporate governance variables and financial performance as measured by Tobin's Q of Saudi listed firms. Table 6.8 presents the OLS regression results of financial performance variables as measured by Tobin's Q on all governance and control variables. Column 2 of Table 6.8 reports the results of the OLS regression of Tobin's Q on ownership variables (foreign ownership FORN and government ownership GOV), Column 3 of Table 6.8 shows the results for board structure variables (board independence BIND, board size BSIZE, board meeting BMMET, CEO duality, audit committee size ACS, audit committee meeting ACM and audit committee independence ACI). Column 4 of Table 6.8 presents the results for the OLS estimation of corporate governance variables with ownership variables, whilst Columns 6 to 8 present the regression results for all governance variables including control and dummy variables for non-financial Saudi listed firms.

Similarly, Table 6.9 presents the results of OLS estimation for financial performance variables as measured by return on assets ROA with corporate governance, control and dummy variables for the period from 2006 to 2014.

**Table 6.8:** OLS Regression Results of the relationship between corporate governance and financial performance measured by TQ for Saudis non-financial listed firms (2006-2014)

Independent Variables	Dependent variable Tobin's Q						
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
_Cons	1.149*** (14.56)	2.930*** (9.22)	2.510*** (7.59)	5.832*** (9.52)	6.170*** (10.20)	5.968*** (9.48)	6.367*** (10.25)
FORN	<b>0.446***</b> (4.79)		<b>0.323***</b> (3.11)	-0.031 (-0.30)	-0.035 (-0.35)	0.121 (1.06)	0.111 (1.04)
GOV	<b>0.438*</b> (1.74)		0.415 (1.46)	<b>1.285***</b> (4.67)	<b>1.316***</b> (4.95)	<b>0.930***</b> (3.62)	<b>0.970***</b> (4.01)
BIND		-0.219 (-0.91)	-0.102 (-0.41)	<b>-0.405*</b> (-1.77)	<b>-0.489**</b> (-2.31)	-0.023 (-0.11)	-0.097 (-0.50)
BSIZE		<b>-0.158***</b> (-4.67)	<b>-0.135***</b> (-3.85)	-0.007 (-0.21)	-0.002 (-0.05)	<b>-0.060*</b> (-1.96)	<b>-0.055*</b> (-1.90)
BMEET		<b>0.045*</b> (1.73)	<b>0.049*</b> (1.87)	<b>0.052**</b> (2.06)	<b>0.055**</b> (2.29)	<b>0.086***</b> (3.07)	<b>0.089***</b> (3.37)
CEO Duality		<b>-0.210**</b> (-2.35)	<b>-0.212**</b> (-2.34)	<b>-0.150*</b> (-1.81)	<b>-0.134*</b> (-1.69)	-0.076 (-0.90)	-0.061 (-0.73)
ACS		-0.030 (-0.37)	-0.042 (-0.51)	-0.008 (-0.11)	-0.013 (-0.18)	-0.109 (-1.30)	-0.121 (-1.56)
ACM		-0.003 (-0.12)	-0.002 (-0.09)	<b>-0.043**</b> (-1.98)	-0.034 (-1.63)	-0.023 (-1.26)	-0.013 (-0.74)
ACI		-0.513 (-1.02)	<b>-0.927*</b> (-1.72)	-0.089 (-0.17)	-0.065 (-0.12)	1.085 (1.65)	<b>1.128*</b> (1.73)
LOG FSIZE				<b>-0.280***</b> (-7.18)	<b>-0.293***</b> (-7.33)	<b>-0.296***</b> (-7.12)	<b>-0.314***</b> (-7.49)
LEVERAGE				<b>-0.102***</b> (-2.86)	<b>-0.084**</b> (-2.31)	-0.054 (-1.15)	-0.028 (-0.60)
SGROWTH				-0.241 (-1.60)	-0.228 (-1.48)	<b>-0.319**</b> (-2.37)	<b>-0.303**</b> (-2.14)
FAGE				0.004 (1.12)	0.002 (0.56)	0.002 (0.56)	-0.001 (-0.22)
DIVD				<b>-0.201**</b> (-2.30)	<b>-0.181**</b> (-2.16)	<b>-0.240***</b> (-2.91)	<b>-0.216***</b> (-2.73)
YEAR-DUMM					YES		YES
INDS-DUMM						YES	YES
Observations	756	756	756	756	756	756	756
Adjusted R-squared	0.021	0.055	0.063	0.187	0.254	0.246	0.317
F-test	12.405	6.209	5.350	12.538	11.020	11.238	10.725
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined



**Table 6.9:** OLS Regression Results of the relationship between corporate governance and financial performance measured by ROA for Saudis non-financial listed firms (2006-2014)

Independent variables	Dependent variable ROA						
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
_Cons	0.096*** (11.61)	0.116*** (5.71)	0.138*** (5.35)	0.244*** (6.37)	0.240*** (6.24)	0.264*** (6.16)	0.257*** (5.96)
FORN	-0.001 (-0.16)		0.001 (0.12)	-0.005 (-0.61)	-0.005 (-0.54)	-0.008 (-0.94)	-0.007 (-0.85)
GOV	0.030 (1.33)		<b>0.052**</b> (2.39)	<b>0.089***</b> (3.94)	<b>0.084***</b> (3.61)	<b>0.055***</b> (2.67)	<b>0.051**</b> (2.42)
BIND		-0.011 (-0.59)	-0.019 (-1.00)	-0.029 (-1.52)	<b>-0.033*</b> (-1.81)	0.001 (0.07)	-0.003 (-0.15)
BFSIZE		0.002 (0.90)	0.002 (0.74)	<b>0.005**</b> (2.00)	<b>0.005*</b> (1.80)	0.002 (1.05)	0.002 (0.96)
BMEET		0.000 (0.26)	-0.000 (-0.28)	-0.002 (-1.00)	-0.002 (-1.08)	0.002 (1.41)	0.002 (1.27)
CEO Duality		<b>-0.018**</b> (-2.40)	<b>-0.016**</b> (-2.13)	-0.006 (-0.87)	-0.009 (-1.19)	0.002 (0.22)	-0.001 (-0.09)
ACS		-0.003 (-0.44)	-0.008 (-1.32)	-0.003 (-0.59)	-0.003 (-0.46)	<b>-0.011**</b> (-2.17)	<b>-0.010**</b> (-1.97)
ACM		-0.001 (-0.68)	-0.002 (-1.07)	<b>-0.005***</b> (-3.09)	<b>-0.004***</b> (-2.81)	<b>-0.003**</b> (-2.09)	<b>-0.003*</b> (-1.91)
ACI		<b>-0.077*</b> (-1.71)	-0.069 (-1.50)	-0.068 (-1.53)	<b>-0.078*</b> (-1.78)	0.035 (0.77)	0.022 (0.49)
LOG FSIZE				<b>-0.011***</b> (-3.56)	<b>-0.009***</b> (-3.06)	<b>-0.012***</b> (-3.59)	<b>-0.011***</b> (-3.31)
LEVERAGE				-0.010** (-2.05)	-0.009* (-1.93)	-0.008 (-1.49)	-0.007 (-1.30)
SGROWTH				-0.000 (-0.03)	-0.005 (-0.40)	-0.010 (-0.77)	-0.015 (-1.10)
FAGE				<b>0.001***</b> (2.84)	<b>0.001***</b> (3.23)	<b>0.001**</b> (2.09)	<b>0.001**</b> (2.41)
DIVID				<b>0.024***</b> (3.99)	<b>0.025***</b> (4.17)	<b>0.013**</b> (2.24)	<b>0.014**</b> (2.43)
YEAR-DUMM					Yes		Yes
INDS-DUMM						Yes	Yes
Observations	756	756	756	756	756	756	756
Adjusted R-squared	0.003	0.007	0.016	0.110	0.113	0.240	0.240
F-Test	1.884	1.958	2.968	8.374	6.495	20.262	16.115
P-value	0.153	0.058	0.002	0.000	0.000	0.000	0.000

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously define

Using Tobin's Q, for non-financial Saudi listed firms, the OLS results of Table 6.8 indicate that the F-value of each model is statistically significant at a 1% level. This outcome suggests that the coefficients of governance and control variables in this study have explained significant variations in the financial performance variable as measured by Tobin's Q. The adjusted R-square for each model is between 0.021 and 0.317, suggesting that the proportion (0.021 – 0.317) of the sample differences in financial performance are explained by the corporate governance variables and control variables.

Model 1 in Table 6.8 shows that foreign ownership FORN and government ownership GOV have a significant positive effect on Tobin's Q, suggesting that the higher the foreign ownership, the higher the firm performance as measured by Tobin's Q. This result supports the agency theory that foreign ownership plays a key role in reducing the agency conflicts and improving corporate performance. In Model 2 of Table 6.8, the results show that board meeting BMEET has a positive and significant effect on Tobin's Q, indicating that those firms with frequent board meetings tend to generate a higher level of performance. This result is consistent with the results found by (Brick & Chidambaran, 2010; Vafeas, 1999). However, board size and CEO duality have a significant negative performance effect, indicating that a larger board size brings down the cost of capital. The negative effect of board size could be due to the fact that BSIZE might not play a primary role in enhancing the effectiveness of governance in non-financial Saudi listed firms.

The results of Model 3 found that both foreign ownership and audit committee meeting still have a significantly positive effect on Tobin's Q. The positive effect of foreign ownership could be due to the observation that foreign-owned firms have a relatively higher Tobin's Q. This result indicates that these investors are 'tracking' better-performing firms. In contrast, the coefficients for BSIZE and CEO duality still remain significantly negative effects. Audit committee independence ACI also appears to have a significant negative effect on Tobin's Q, suggesting that the existence of an independent audit committee has not positively contributed to improved performance measured by Tobin's Q.

Model 4 shows a significantly positive relation between government ownership GOV and performance as measured by Tobin's Q. Board meeting BMEET also revealed a positive performance effect. However, in contrast to the Tobin's Q that measured financial performance, board independence BIND has a significantly negative effect on performance, suggesting that the higher the level of the board independence the lower the Tobin's Q. This

outcome could be because of the very high block-holder ownership concentration, which can interfere with the effectiveness of corporate governance; therefore, the board independence might play a weak role in supporting the monitoring aspect of the effectiveness of the boards of non-financial Saudi listed firms. CEO duality still remains a significant negative effect on Tobin's Q. Audit committee meeting also has a significant negative effect, indicating that that firms with frequent audit committee meetings tend to generate a lower level of performance. With respect to control variables, Model 4 of Table 6.8 shows that the firm size, leverage ratio and dividends have a significant negative effect on performance; in general, these results for control variables are consistent with the literature.

To control for the possibility of serial correlation of residuals in the pooled regression, this study estimates Model 5, which includes dummy variables for year. Table 6.8 shows that government ownership and board meeting categories have a significantly positive affect, while other governance variables such as board independence and CEO duality have a negative performance effect. With respect to control variables, Model 5 Table 6.8 shows that the firm size, leverage ratio and dividends have a significant negative effect on performance measured by Tobin's Q. A log asset FSIZE is used as a size measure to control for differences in firm size, indicating that the high assets volume may decrease Tobin's Q. Financial leverage has a significant negative relationship with Tobin's Q. This result is supported by the expectation of a negative relationship between leverage ratio and performance.

Model 6, includes industry dummy variables. Table 6.8 shows that the results remain the same in Model 5, in which government ownership and board-meeting categories are still slightly statistically significant with a positive effect on performance, while other governance variables such as board size have a negative performance effect. With respect to control variables, Model 6, Table 6.8 reveals that the firm size, sales growth and dividends have a significant negative effect on performance as measured by Tobin's Q.

Model 7, includes all governance, control year and industry dummy variables. The results report adjusted R-squared value, which indicates that 32% variability is explained by the governance and control variables. Table 6.8 suggests that the result remains the same in Model 6 that government ownership and board meeting are still slightly statistically significant with positive effects on performance. A significant positive relation is found between audit committee independence and Tobin's Q, while other governance variables

such as board size still indicate the same result as Model 6, in which it has a negative performance effect. With respect to control variables, the results in Model 7, Table 6.8 confirm that the firm size, sales growth and dividends have a significant negative effect on performance as measured by Tobin's Q. Overall; the results from Table 6.8 indicate that corporate governance variables have important implications for performance as measured by Tobin's Q for non-financial Saudi listed firms. In this model, the adjusted R-squares of the model is 31.7%, indicating that 31.7% of the change in Tobin's Q is explained by changes in corporate governance variables.

Similarly, Table 6.9 also reports the results of OLS estimations of the relationship between governance variables and financial performance as measured by ROA. The result suggests that the F-value of each model is statistically significant at a 1% level except for Models 1 and 2, implying the goodness of fit of the regression. Results indicating that the coefficients of governance and control variables in this study have explained significant variations in the financial performance variable are measured by ROA. The adjusted R-square for each model is between 0.003 and 0.240, suggesting that the proportion (0.003 – 0.240) of the sample differences in financial performance have been explained by the corporate governance and control variables.

Model 1 of Table 6.9 reports that there is no significant relationship between ownership type and ROA. The regression results from Model 2 of Table 6.9 shows that CEO duality significantly negatively affects return on assets ROA as the proxy for financial performance, which implies that the higher the CEO duality, the lower is the ROA and vice-versa. The results of Model 2 also show that audit committee independence has a significant negative affect performance.

The results for Model 3 of Table 6.9 show that there is a significant and negative relationship between government ownership GOV and ROA ( $p < 0.05$ ). Similarly, there is a significant and negative relationship between ROA and CEO duality ( $p < 0.05$ ). The results for Model 4 of Table 6.9 show that GOV has a significant and positive effect on ROA ( $p < 0.01$ ); there is also a significant and positive relationship between board size BSIZE and ROA ( $p < 0.05$ ). The Board size values of the non-financial Saudi listed firms' range from 5 to 13, with 8 being the average; this suggests that most non-financial Saudi listed firms have sufficient directors. However, audit committee meeting has a significant negative impact on ROA. With respect to the control variables, the results reveal a significant positive

relationship between firm age FAGE and ROA, and between dividends DIVD and ROA, but there is a significant negative relationship between log firm size FSIZE and ROA.

When including the year dummy variables in Model 5 of Table 6.9, the results remain the same as those found in Model 4 of Table 6.9, government ownership GOV and board size BSIZE have a significant and positive effect on ROA, and audit committee meeting has a negative effect. There is also a weak but significant negative relationship between audit committee independence and ROA, the negative coefficient of ACI, indicates that this variable contributes negatively to firm performance as measured by ROA. This implies that the non-executive directors of the audit committees do not have more knowledge about their firms than the executive directors have. With respect to control variables, Model 5 of Table 6.9 shows that there is a significant positive relationship between firm age, dividends and performance, but that log firm size has a significant negative effect on performance as measured by ROA.

The results for Model 6 of Table 6.9 are similar to those found in Model 5 of Table 6.9. More specifically, there is a significant positive relationship between government ownership GOV and ROA. However, audit committee size ACS has a negative impact on ROA, the negative coefficient of ACS, indicates that this variable contributes negatively to firm performance as measured by ROA. The result also confirms that audit committee meeting ACM is significantly and negatively related to ROA. Again, the results for Model 6 and Model 5 in Table 6.9 are similar in control variables.

For Model 7 of Table 6.9, which includes all governance, control and year variables as well as the industry dummy variables, the results of the OLS regression are similar to those found in Model 6 of Table 6.9. More specifically, government ownership is significantly and positively associated with ROA ( $p < 0.05$ ). The results for Model 7 also reveal no significant relationship between the board structure such as foreign ownership, board independence, board size, board meeting, CEO duality and audit committee independence and ROA. However, a significant and negative association is discovered between audit committee size and audit committee with ROA. Regarding the control variables, a significant and negative relationship is found between log firm size and ROA, and positive relationships are found between firm age and ROA, and between dividends and ROA. The adjusted R-squared of the model is 24%, indicating that 24% of the change in ROA can be explained by the changes in the corporate governance variables.

#### **6.4.5 Fixed-effects and Random-effects Regression Results of the Relationship between Corporate Governance and Financial Performance**

The previous section presented the results of the OLS regression. This section uses a panel regression analysis, employing FE or RE regressions with robust standard errors. This analysis is undertaken to examine the relationship between corporate governance and firm performance, as measured by Tobin's Q and ROA. Again, the FE and RE models can take into account the heterogeneity across firms by allowing for variable intercepts. The choice between these models is based on the Hausman test as it was applied to test for fixed-effects model versus random-effects model. Tables 6.10 and 6.11 provide the results of OLS estimations as well as panel models (FE or RE) for the relationship between the corporate governance variables and the financial performance of non-financial Saudi listed firms. Table 6.10 reports the results of the panel models and the OLS regression using Tobin's Q to measure the performance the results are presented below.

**Table 6.10:** Panel Regression Results of the relationship between corporate governance and financial performance measured by Tobin's Q for Saudis non-financial listed firms (2006-2014)

Independent Variables	Dependent variable Tobin's Q		
	OLS Model	Fixed-effects Model	Random-effects Model
_Cons	6.367*** (10.25)	-2.855 (-0.23)	-102.460*** (-3.42)
FORN	0.111 (1.04)	0.527 (1.07)	0.219 (0.95)
GOV	<b>0.970***</b> (4.01)	.	<b>1.135*</b> (1.88)
BIND	-0.097 (-0.50)	<b>1.035***</b> (2.97)	<b>0.896***</b> (2.77)
BFSIZE	<b>-0.055*</b> (-1.90)	0.089 (1.29)	-0.001 (-0.02)
BMEET	<b>0.089***</b> (3.37)	<b>0.077*</b> (1.81)	<b>0.086**</b> (2.43)
CEO Duality	-0.061 (-0.73)	-0.045 (-0.31)	0.014 (0.11)
ACS	-0.121 (-1.56)	0.002 (0.01)	-0.115 (-0.92)
ACM	-0.013 (-0.74)	0.055 (1.28)	-0.035 (-1.04)
ACI	<b>1.128*</b> (1.73)	0.241 (0.17)	1.045 (1.00)
LOG FSIZE	<b>-0.314***</b> (-7.49)	<b>-0.267**</b> (-2.37)	<b>-0.362***</b> (-5.19)
LEVERAGE	-0.028 (-0.60)	<b>0.132*</b> (1.75)	-0.007 (-0.09)
SGROWTH	<b>-0.303**</b> (-2.14)	-0.178 (-1.46)	-0.186 (-1.46)
FAGE	-0.001 (-0.22)	0.294 (0.50)	-0.002 (-0.21)
DIVD	<b>-0.216***</b> (-2.73)	-0.055 (-0.61)	-0.173* (-1.92)
YEAR-DUMM	Yes	Yes	Yes
INDS-DUMM	Yes	Yes	Yes
Observations	756	756	756
Adjusted R-squared	0.317	0.204	0.053
Wald Chi			84.33
Hausman Test			47.99
Hausman_P-value			0.0000

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined

Table 6.11 reports the results of panel models as well as the results of OLS are included. Using ROA as measured of performance the results are presented below.

**Table 6.11:** Panel Regression Results of the relationship between corporate governance and financial performance measured by ROA for Saudis non-financial listed firms (2006-2014)

Independent Variables	Dependent variable ROA		
	OLS Model	Fixed-effects Model	Random-effects Model
_Cons	0.257*** (5.96)	0.052 (0.06)	3.503* (1.68)
FORN	-0.007 (-0.85)	0.041 (1.14)	-0.005 (-0.30)
GOV	<b>0.051**</b> (2.42)	.	0.057 (1.30)
BIND	-0.003 (-0.15)	0.021 (0.83)	0.017 (0.74)
BFSIZE	0.002 (0.96)	-0.006 (-1.11)	0.000 (0.02)
BMEET	0.002 (1.27)	<b>0.005*</b> (1.74)	<b>0.005**</b> (2.01)
CEO Duality	-0.001 (-0.09)	-0.005 (-0.51)	-0.003 (-0.36)
ACS	<b>-0.010**</b> (-1.97)	0.010 (0.88)	-0.003 (-0.31)
ACM	<b>-0.003*</b> (-1.91)	0.003 (0.94)	-0.001 (-0.59)
ACI	0.022 (0.49)	0.125 (1.22)	0.076 (1.03)
LOG FSIZE	<b>-0.011***</b> (-3.31)	<b>-0.037***</b> (-4.48)	<b>-0.019***</b> (-3.93)
LEVERAGE	-0.007 (-1.30)	0.007 (1.36)	0.000 (0.05)
SGROWTH	-0.015 (-1.10)	<b>-0.017*</b> (-1.90)	<b>-0.014*</b> (-1.65)
FAGE	<b>0.001**</b> (2.41)	0.023 (0.54)	0.001 (1.16)
DIVD	<b>0.014**</b> (2.43)	<b>0.013*</b> (1.95)	<b>0.012**</b> (1.98)
YEAR-DUMM	Yes	Yes	Yes
INDS-DUMM	Yes	Yes	Yes
Observations	756	756	756
Adjusted R-squared	0.240	0.072	0.048
Wald Chi			73.95***
Hausman Test			19.74
Hausman_P-value			0.102

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined



Table 6.10 provides the findings of the panel models for the relationship between corporate governance and performance as measured by Tobin's Q. The second column presents the pooled finding for the OLS model, and the third and fourth columns report the panel models' results. The choice between these two models is based on the Hausman test: the results of this test are 47.99 with P-value = 0.000 significant at the 1% level, indicate that the FE model is more efficient than the RE model.

The results of the FE model are provided in Column 3 of Table 6.6 they show that board independence has a significant positive effect on Tobin's Q, indicating that the board independence is one of the important factors in corporate governance and that it can affect monitoring functions, thus improving corporate performance. This, finding is in line with agency theory. Board meeting also has a significant positive effect on performance as measured by Tobin's Q, suggesting that firms with frequent board meetings tend to generate higher performance. With respect to control variables, the results reveal that firm size has a significant negative relationship with Tobin's Q, indicating that an increase in firm size significantly decreases the performance. However, the leverage ratio has a positive and significant effect on Tobin's Q. None of the other governance variables have a significant relationship with Tobin's Q.

Similarly, Table 6.11 reports the panel models results for the relationship between corporate governance and performance as measured by ROA. The second column presents the pooled findings of the OLS model, and the third and fourth columns report the panel models' results. The choice between these two models is based on the Hausman test: the results from this test are 19.74 with P-value = 0.102 significant at the 10% level, indicate that the FE model is more efficient than the RE model.

The results show that board meeting also has a positive and significant effect on performance as measured by ROA. This result is similar to the result found in Table 6.10. With respect to control variables, the results indicate that dividends are significantly and positively related to ROA, but the firm size and sales growth are significantly and negatively related to ROA.

#### **6.4.6 GLS Regression Results of the Relationship between Corporate Governance and Financial Performance**

Based on the literature review, this study uses two estimators pooled OLS and panel (FE & RE) models to examine the relationship between corporate governance variables and financial performance. The results are in line with those in the literature. Because, both OLS and the panel models are likely to be biased and to have heteroscedasticity and autocorrelation, this study employed the GLS model, as its estimates permit control over autocorrelation and heterogeneity. The GLS regression is applied when the variances of the observations have heteroscedasticity. The GLS model is more suitable than others are because it corrects for the omitted variable bias in the presence of autocorrelation and heteroscedasticity in pooled time series data. Tables 6.12 and 6.13 report the results are of GLS estimations for the relationship between corporate governance variables and the financial performance of non-financial Saudi listed firms for the period from 2006 through 2014.

Tables 6.12 and 6.13 indicate that the Wald test for each model is statistically significant at 1%, which in turn suggests that all the models used in those tables are valid. Table 6.12 presents the results of the GLS regression, with a robust standard error. For corporate governance's effect on financial performance as measured by Tobin's Q. Table 6.13 presents the GLS regression's results regarding the effects that all the governance and control variables have on performance as measured by ROA. Table 6.12 reports the results of the GLS regression regarding the relationship between corporate governance and financial performance as measured by Tobin's Q.

**Table 6.12:** GLS Regression Results of the relationship between corporate governance and financial performance measured by Tobin's Q for Saudis non-financial listed firms (2006-2014)

Independent Variables	Dependent variable Tobin's Q					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
_Cons	<b>1.141***</b> (27.42)	<b>1.934***</b> (11.24)	<b>4.455***</b> (13.38)	<b>4.836***</b> (14.32)	<b>5.116***</b> (15.57)	<b>5.372***</b> (15.10)
FORN	<b>0.193***</b> (3.93)	<b>0.253***</b> (4.45)	0.041 (0.68)	0.063 (1.02)	<b>0.137**</b> (2.25)	<b>0.167***</b> (2.73)
GOV	0.133 (0.76)	0.174 (0.88)	<b>1.021***</b> (5.41)	<b>1.331***</b> (7.18)	<b>0.861***</b> (4.79)	<b>0.914***</b> (5.08)
BIND		0.072 (0.50)	-0.109 (-0.83)	<b>-0.357***</b> (-2.85)	0.085 (0.68)	0.044 (0.34)
BSIZE		<b>-0.084***</b> (-5.14)	0.005 (0.29)	0.022 (1.19)	<b>-0.035**</b> (-2.09)	<b>-0.035*</b> (-1.93)
BMEET		<b>0.057***</b> (4.35)	<b>0.060***</b> (4.31)	<b>0.058***</b> (4.25)	<b>0.088***</b> (6.24)	<b>0.080***</b> (5.17)
CEO Duality		<b>-0.201***</b> (-3.62)	-0.037 (-0.70)	-0.023 (-0.43)	0.039 (0.77)	0.059 (1.13)
ACS		<b>-0.096*</b> (-1.95)	-0.010 (-0.19)	-0.069 (-1.43)	<b>-0.184***</b> (-3.67)	<b>-0.224***</b> (-4.39)
ACM		-0.004 (-0.31)	<b>-0.046***</b> (-3.88)	<b>-0.039***</b> (-3.08)	<b>-0.033***</b> (-3.22)	-0.007 (-0.59)
ACI		-0.452 (-1.35)	-0.357 (-1.09)	-0.322 (-0.96)	<b>1.379***</b> (4.09)	<b>1.460***</b> (4.16)
LOG FSIZE			<b>-0.222***</b> (-10.23)	<b>-0.228***</b> (-10.10)	<b>-0.253***</b> (-10.80)	<b>-0.258***</b> (-10.24)
LEVERAGE			<b>-0.094***</b> (-4.20)	<b>-0.072***</b> (-2.82)	-0.027 (-1.06)	-0.012 (-0.43)
SGROWTH			-0.031 (-0.38)	-0.132 (-1.49)	<b>-0.124*</b> (-1.79)	<b>-0.162**</b> (-2.28)
FAGE			0.003 (1.57)	0.002 (1.03)	0.001 (0.72)	0.000 (0.03)
DIVD			-0.055 (-1.17)	-0.034 (-0.69)	<b>-0.092**</b> (-2.13)	<b>-0.087*</b> (-1.91)
YEAR-DUMM				Yes		Yes
INDS-DUMM					Yes	Yes
Observations	756	756	756	756	756	756
Wald Chi2	18.954	98.850	317.240	462.615	675.078	718.853
P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously define

Using Tobin's Q as a measure of financial performance, the results reported in Model 1 of Table 6.12 focus on the GLS regression of ownership structure (foreign ownership FORN and government ownership GOV). Model 2 shows the findings for board structure variables (board independence BIND, board size BSIZE, board meeting BMEET, CEO Duality, audit committee size ACS, audit committee meeting ACM and audit committee independence ACI). Model 3 of Table 6.12 provides the results for both ownership and board structure variables. Model 4 of Table 6.12 reports the results for the ownership structure, board structure and control variables; Models 5 and 6 reveal the results of the GLS regression for all variables including dummy variables for Saudi listed firms.

Table 6.12 presents the GLS regression results for the relationship between corporate governance and performance as measured by Tobin's Q. Model 1 regression results show that the foreign ownership FORN has a significant positive effect on Tobin's Q. Government ownership has a positive sign, but has no statistically significant effect on Tobin's Q.

Model 2 also shows that the foreign ownership FORN remain significantly and positively related to Tobin's Q. Board meeting BMEET similarly has a significant positive effect on Tobin's Q. However, board size BSIZE has a significant negative effect on Tobin's Q. These results are consistent with those of other researchers, such as Prevost, Rao, and Hossain (2002) and Yermack (1996), who reported that larger board size values correlated with less efficiency in directors monitoring roles, which in turn leads to reduced financial performance. With respect to the effect of CEO duality, the results shown in Table 6.12 indicate a significant negative effect on performance as measured by Tobin's Q. This evidence of the negative relationship between CEO duality and financial performance supports the agency theory perspective, which states that financial performance improves when the CEO and chairman roles are separated. In terms of theory, advocates of the agency perspective argue that CEO duality is a problem, as the same person must be held responsible for both financial performance and efficiency evaluation. This finding is consistent with (Baysinger & Butler, 1985). Audit committee size ACS have also significantly and negatively related to Tobin's Q, indicating that having larger audit committee contributes negatively to performance as measured by Tobin's Q.

The results for the regression in Model 3 of Table 6.12 indicate that there is strong and significant positive relationship between board meeting BMEET and Tobin's Q, this result is remains significantly positive even after controlling for other variables. The positive

relationship between board meeting and Tobin's Q suggests that a higher frequency of board meetings could result in a higher quality of managerial monitoring, and hence a significant positive impact on firm performance. Government ownership GOV also is a significantly and positively related to Tobin's Q, suggesting that the governments usually behave more carefully than other owners do; for example, government are able to decrease unemployment while improving performance. This result is inconsistent with agency theory, which states that, when a government owns a firm, it causes more agency problems and negatively affects the firm's financial performance. In contrast, audit committee meeting a significant negative effect on performance. The results for the control variables are also reported; Firm size FSIZE and leverage ratio LR are significantly and negatively related to Tobin's Q.

As can be seen from Model 4 of Table 6.12, government ownership GOV and board meeting BMEET are significant and positively related to Tobin's Q. The GOV coefficient has the same sign in all past regression models, which suggests that higher government ownership contributes positively to performance. Board meeting has a significant positive effect on Tobin's Q, indicating that having more frequent board meetings might improve the board's ability to make decisions and thus improve the firm's financial performance. This result is consistent with those found by Zahra and Pearce (1989). However, board independence BIND is significantly and negatively related to Tobin's Q; one possible reason for this result is the impact that high concentration of block holders has on owners of Saudi non-financial firms, as this can interfere with the board's monitoring role, independent of the firm. Another possible reason is that outside directors may not have the experience, knowledge and skills related to the industrial sector that they need to support monitoring functions. Audit committee meeting ACM also as a negative and significant effect on Tobin's Q, indicates that a higher frequency of audit committee meetings correlates with lower performance. FSIZE is significantly and negatively related to Tobin's Q, implying that firms with higher assets have lower performance. Leverage ratio also is negatively related with Tobin's Q, suggesting that firms with higher leverage ratios have fewer investment opportunities.

The results for Model 5 of Table 6.12, reveal that foreign ownership FORGN and government ownership GOV have a significant positive influence on Tobin's Q. The positive impact of foreign ownership, implies that foreign investors have the ability and the incentive to intervene as monitors, perhaps enhancing the effectiveness of corporate governance, and improving performance. This result is consistent with those of Gillan and Starks (2005).

Government ownership also is positively significantly related to Tobin's Q, indicating that the Saudi government assists non-financial Saudi listed firms that have a high proportion of government ownership. Audit committee independence ACI also as a positive and significant influence on Tobin's Q, which suggests that non-executive directors of audit committees have a specific role in representing shareholders' interests.

On the contrary, board size BSIZE, audit committee size ACS and audit committee meetings ACM appear to all have a negative and significant effect on Tobin's Q. Board size a negatively related to performance, which implies that increasing board size is unlikely to improve effectiveness. Audit committee size has a significant negative coefficient, indicating that ACS contributes negatively to performance as measured by Tobin's Q. With respect to control variables, firm size FSIZE, sales growth SGROWTH and dividends are all negatively related to Tobin's Q. Models 3,4,5 and 6 all indicate a negative relationship between firm size and Tobin's Q, suggesting that large firms are typically less efficient than smaller firms because large firms have less control and are more diversified. This result is consistent with the other and it was found by Farooque et al., 2007; Kiel & Nicholson, 2003; Kowalewski, Stetsyuk, & Talavera, 2008; Majumdar, 1997.

Model 6 of Table 6.12 is a main model, with all governance, control and dummy variables included. The results indicate that ownership factors such as the foreign FORN and government GOV ownership are significantly and positively related to Tobin's Q; thus both foreign and government ownership play a primary role in improving financial performance. Foreign ownership has a significant positive impact on Tobin's Q, which may imply that foreign investors can provide an important monitoring role in management by enhancing the effectiveness of governance and by improving performance. Government ownership also is significantly and positively related to Tobin's Q, suggesting that it might provide a control device for restricting management's self-interested behaviour to bring it more in line with the firm's goals, hence improving Tobin's Q. The results also indicate a significant and positive relationship between board meeting BMEET and Tobin's Q. This study notes that there is clear evidence of a positive linear relationship between board meeting and Tobin's Q, which implies that Saudi boards that meet more frequently tend to have better financial performance. This finding is consistent with agency theory, which indicates that firms whose boards meet more frequently have enhanced capacity to effectively monitor management, thus improving performance. Audit committee independence ACI also is significantly and

positively related to Tobin's Q, indicating that, when an audit committee has more outside directors, it is able to monitor the management and thus ensure better performance.

However, Board size BSIZE, audit committee size ACS and audit committee meeting ACM are all significantly and negatively related to Tobin's Q. The results from the GLS regression show that for board size, the result is similar to that of the Model 5 regression: a consistent negative relationship with Tobin's Q. This implies that larger boards have worse the performance. This result is similar to those found in past studies (Haniffa & Hudaib, 2006b; Jensen, 1993; Yermack, 1996), in which researchers concluded that firms with large boards are less effective. Moreover, the result revealed a negative and significant relation between audit committee size and Tobin's Q, which may be explained by the fact that audit committees in non-financial Saudi listed firms are not considered to be important; in addition, increasing committee's size decreases its efficiency. Along that same lines, the results indicate a significant negative relationship between audit committee meeting and Tobin's Q, suggesting that such meetings are not useful, and that they decrease the committee's effectiveness. Finally, the regression results show that firm size FSIZE, sales growth SGROWTH and dividends DIVD all have significant negative relationships with Tobin's Q. These results are similar those found in Model 5.

Similarly, Table 6.13 reports the GLS regression results for the relationship between corporate governance and financial performance as measured by ROA.

**Table 6.13:** GLS Regression Results of the relationship between corporate governance and financial performance measured by ROA for Saudis non-financial listed firms (2006-2014)

<b>Dependent variable ROA</b>						
<b>Independent Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
_Cons	0.098*** (28.93)	0.132*** (12.76)	0.254*** (10.37)	0.237*** (9.26)	0.228*** (9.89)	0.224*** (9.62)
FORN	<b>-0.007*</b> (-1.86)	<b>-0.008**</b> (-2.16)	0.000 (0.02)	0.002 (0.45)	<b>-0.009*</b> (-1.91)	-0.008 (-1.54)
GOV	-0.002 (-0.16)	0.000 (0.01)	<b>0.085***</b> (5.39)	<b>0.079***</b> (4.84)	0.017 (1.23)	0.020 (1.39)
BIND		-0.014 (-1.19)	<b>-0.029**</b> (-2.44)	<b>-0.028**</b> (-2.37)	0.002 (0.15)	-0.004 (-0.35)
BFSIZE		0.000 (0.11)	<b>0.006***</b> (3.58)	<b>0.005***</b> (3.25)	0.002 (1.33)	0.002 (1.39)
BMEET		<b>-0.002*</b> (-1.94)	<b>-0.003**</b> (-2.27)	<b>-0.003**</b> (-2.40)	0.001 (0.79)	0.000 (0.48)
CEO Duality		<b>-0.017***</b> (-3.43)	-0.006 (-1.38)	-0.007 (-1.57)	-0.002 (-0.38)	-0.002 (-0.36)
ACS		<b>-0.007**</b> (-2.06)	0.003 (0.76)	0.003 (0.92)	<b>-0.005*</b> (-1.67)	<b>-0.006*</b> (-1.68)
ACM		-0.000 (-0.21)	<b>-0.004***</b> (-3.86)	<b>-0.003***</b> (-3.24)	<b>-0.002***</b> (-2.76)	<b>-0.002**</b> (-2.42)
ACI		0.028 (0.98)	<b>-0.053*</b> (-1.88)	<b>-0.077***</b> (-2.73)	<b>0.040*</b> (1.66)	<b>0.042*</b> (1.69)
LOG FSIZE			<b>-0.014***</b> (-7.58)	<b>-0.012***</b> (-6.19)	<b>-0.011***</b> (-6.54)	<b>-0.010***</b> (-6.18)
LEVERAGE			<b>-0.012***</b> (-5.00)	<b>-0.012***</b> (-4.97)	<b>-0.008***</b> (-3.91)	<b>-0.008***</b> (-3.51)
SGROWTH			0.005 (0.62)	0.001 (0.13)	-0.005 (-0.68)	-0.007 (-1.08)
FAGE			<b>0.001***</b> (3.82)	<b>0.001***</b> (4.80)	<b>0.001***</b> (4.08)	<b>0.001***</b> (4.46)
DIVD			<b>0.025***</b> (6.35)	<b>0.028***</b> (6.70)	<b>0.013***</b> (3.53)	<b>0.014***</b> (3.77)
YEAR-DUMM				Yes		Yes
INDS-DUMM					Yes	Yes
Observations	756	756	756	756	756	756
Wald Chi2	5.961	74.711	278.518	313.096	1332.574	1284.664
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: \*\*\*, \*\*, \* represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined

Using ROA to measure performance, GLS regression findings regarding the relationships among control variables corporate governance and financial performance are presented in Table 6.13. More specifically, most of the corporate governance variables do not have a



significant effect on performance as measured by ROA. The results from Model 1 show that the foreign ownership FORN has a significant negative effect on ROA. This result is inconsistent with the results found with Tobin's Q.

Model 2 shows, that foreign ownership FORN is significantly and negatively related to ROA. This implies that foreign owners have a weak monitoring role. The results also reveal a significant and negative relationship between board meeting BMEET and ROA suggesting that the frequency of board meetings tends to decrease a board's activity and the effectiveness of its monitoring. A negative and significant impact of CEO duality on ROA is also indicated, as shown in Table 6.13. This implies that CEO duality impacts the board's monitoring function, thus decreasing performance. The evidence regarding the negative relationship between CEO duality and ROA supports agency theory, which states that CEO duality is problematic because the same person is held responsible for the firm's efficiency and its financial performance. As shown in Table 6.13, audit committee size ACS also has a negative and significant effect on performance as measured by ROA. This indicates that audit committee size does not influence the ROA of the non-financial Saudi listed firms. Thus, increasing the number of non-executive directors would not improve the efficiency of the audit committee, and thus would not add value to the firm.

The results for Model 3 in Table 6.13, indicate that government ownership GOV and board size BSIZE are significantly and positively correlated with ROA. This positive relationship between government ownership and ROA, indicates that firms with higher levels of government ownership have easier access to government financing and enjoy other benefits such as effective monitoring and relatively low agency costs; thus higher levels of GOV improve performance. This result is consistent with the results of Alfaraih, Alanezi, and Almujaed (2007), and of Najid and Abdul-Rahman (2011). The positive relationship between board size and ROA implies that many boards enhance their companies' financial performance because they provide business experience, skills and professional networks that add considerable resources. In contrast, a negative and significant relationship is found between board independence BIND and ROA, suggesting higher the board independence values correlate with lower ROA. This could be because of very high concentrations of block-holders among a firm's owners, which can impact the effectiveness of governance. Another possible reason is that outside directors may have not experience, knowledge or skills related to industrial firms, which can reduce the effectiveness of their monitoring. The results also show that board meeting has a significant negative effect on ROA. This result is

similar to the result found in Model 2. Audit committee meeting ACM and audit committee independence ACI are significantly and negatively related to ROA. The negative relationship between audit committee meeting and ROA indicates, that this variable does not contribute positively to ROA. The results of this study also indicate that having an audit committee dominated by outside directors negatively affects ROA, suggesting that non-executive directors of audit committees still have weak monitoring roles because most committee members are independent directors; this is the case for 18% of all non-financial Saudi listed firms. The results show that control variables are consistent with the literature review. Similarly, the results in Model 4 and Model 3 of Table 6.13 are similar.

The results for Model 5 of Table 6.13, reveal that audit committee independence ACI is significantly and positively related to ROA. This implies that non-executive members contribute positively to ROA. However, the results also show that foreign ownership FORGN is significantly and negatively related to ROA. This result is similar to the results found in Models 1 and 2. Audit committee size ACS also is significantly and negatively associated with ROA as it is in Model 2. Audit committee meeting is also negatively related to ROA, confirming the results from Models 3 and 4. In addition, no other governance variables have a significant relationship with ROA. Regarding the control variables, the results confirmed those found in Models 3 and 4. Significant positive relationships are found between firm age FAGE and ROA, and between dividends DIVD and ROA. However, firm size FSZIE and leverage ratio LR are significantly and negatively related to ROA.

Table 6.13 shows Model 6 which is a main model that includes all governance, control and dummy variables. The results of this model indicate that the Audit committee size ACS and Audit committee meeting ACM are both a significantly and negatively related to ROA. This illustrates that firm performance is better when both the audit committee size and the number of audit committee meetings are small. Audit committee independence ACI is significantly and positively related to ROA, which indicates that Audit committee independence plays a primary role in improving financial performance. Finally, the regression results show that firm age FAGE and dividends DIVD both have significant positive relationships with ROA. Firm size FSZIE and leverage ratio LR are also significantly and negatively related to ROA. These results are similar to those found in Model 5.

## 6.5 Conclusion

This chapter presents the empirical results of the pooled OLS regression and the GLS regression for the effects of corporate governance variables on the cost of capital (measured by WACC) and on financial performance (measured by ROA and Tobin'Q) for non-financial Saudi listed firms in the period 2006 to 2014. The results regarding the effects that the corporate governance variables have on the cost of capital shows that there is a significant positive relationship between block ownership and the cost of capital (as estimated using OLS regression). When the relationship between the corporate governance variables and the cost of capital is estimated using GLS regression, the results indicate significant positive relationships between block ownership and the cost of capital and between board size and the cost of capital. However, there is a significant negative relationship between board independence and the cost of capital.

Furthermore, the results regarding the relationship between the corporate governance variables and firm performance (measured by ROA) show that there is a significant positive relationship between government ownership and firm performance as estimated using OLS. However, both audit committee size and audit committee meeting have significant negative relationships with firm performance. When the relationship between the corporate governance variables and firm performance (measured by ROA) is estimated using GLS regression, the results indicate a significant positive relationship between firm performance and audit committee independence but significant negative relationships between firm performance and each of audit committee size and audit committee meeting. Moreover, the results regarding the corporate governance variables and firm performance (as measured by Tobin's Q) reveal significant positive relationship between firm performance and each of government ownership, board meeting, and audit committee independence (as estimated using OLS). However, there is a significant negative relationship between board size and firm performance as estimated using OLS. When the relationship between the corporate governance variables and firm performance (as measured by Tobin's Q) is estimated using GLS regression, the results indicate significant positive relationships between firm performance and each of foreign ownership, government ownership, board meetings, and audit committee independence. However, there are also significant negative relationships between firm performance and each of board size and audit committee size. Chapter 7 discussion of this study's empirical results.

## **Chapter Seven: Discussion**

### **7.1 Introduction**

The variables affecting corporate governance were assessed in the previous chapter, with results presented for both cost of capital and financial performance (drawn from each of OLS, RE and GLS). The objectives of this thesis require that these variables be investigated specifically with regard to non-financial firms in Saudi Arabia. Thus, the results from the previous chapter regarding cost of capital and financial performance are now being discussed in relation to firms in Saudi Arabia. The model that is discussed in Section 7.2 is an associative model of corporate governance mechanisms' effects on the cost of capital. The model that is discussed in Section 7.3, concerns corporate governance mechanisms' effects on financial performance. Section 7.4 contains the conclusions.

### **7.2 Results of the First Model: Corporate Governance and the Cost of Capital**

Research has been conducted in both developed and developing countries regarding the relationship between the cost of capital and corporate governance. Although these studies reveal a relationship between these two variables, only a small number of studies have been conducted (Ashbaugh et al., 2004; Bhojraj & Sengupta, 2003; Botosan & Plumlee, 2002; Chen et al., 2003; Claessens, 2006; Drobetz et al., 2004; Gompers et al., 2003; Hail & Leuz, 2006; Klock et al., 2005; Piot & Missonier-Piera, 2007; Pittman & Fortin, 2004; Singh & Davidson III, 2003). Thus far, there is a lack of research that evaluates the relationship between these two variables specifically in Saudi Arabia. Thus, the present study covers a large number of companies listed on the Saudi Stock Exchange over a long time period (from 2006 through 2014). Additionally, the business environment in Saudi Arabia has high levels of ownership concentration, coupled with a strong preponderance of family-controlled companies; families own almost all Saudi firms. Hence, this study introduces interesting results regarding the relationship between ownership structure and the cost of capital; this relationship is different than it is in developed countries.

Therefore, this is the thesis's, main question: Do corporate governance mechanisms affect the cost of capital in non-financial firms in Saudi Arabia? The research utilises six models and two regression analyses, (OLS and GLS) to improve understanding of how cost of capital and the corporate governance mechanisms are related. The GLS with regression

values given in percentages (%) is presented in Table 6.7 in Chapter 6. The following discussion relates to this analysis.

The six models used in the regression analysis, are presented in Table 6.7. The independent study variables are all included in conjunction with the control variables, in Models 1, 2, 3, 4 and 5. The results of the GLS regression are discussed along with a review of model 6, and their contributions to the findings of this study are considered.

The relationship between cost of capital and corporate governance mechanisms is explored. Model 1, which demonstrates that there is a significant correlation between three corporate governance variables (block ownership, board independence and board size) and the cost of capital. These three variables are presented below in greater detail.

### **7.2.1 Block Ownership**

Block ownership is regularly perceived as important mechanism in successful corporate governance (Ashbaugh et al., 2004; Cremers & Nair, 2005). It is therefore incorporated into this study analysis as a variable for testing how cost of capital and corporate governance are related. This thesis hypothesises that in non-financial Saudi firms, there is a significant positive relationship between the cost of capital and block ownership. This hypothesis appears to be supported by the regression analysis, as the results indicate that in Saudi Arabia, block ownership is positively associated with WACC. Thus, it is a valid conclusion to accept hypothesis H15.

The cost of capital is significantly and positively associated with block ownership in this study. Previous researchers have found similar results (Bozec et al., 2014; Elston & Rondi, 2006). However, many others have found the inverse relationship, with a strong negative correlation between cost of capital and block ownership (Ashbaugh et al., 2004; Blom, 2008; Farooq & Derrabi, 2012; Kaspereit et al., 2015; Khan, 2016; Kiel & Nicholson, 2003; Ohlson & Juettner-Nauroth, 2005; Singhal, 2014).

Researchers have indicated that controlling shareholders are often responsible for the alleviation of agency problems. These shareholders have the motivation and capacity to ensure that managers perform in a manner that brings about benefits to all shareholders; regardless of how many shares they own (Leech & Leahy, 1991; Shleifer & Vishny, 1986; Stiglitz, 1985). Small investors can occasionally be accused of free riding as the large shareholders act to mitigate problems and subsequently increases the firm's value; this supports the monitoring hypothesis. As the amount of stock an individual owns increases, the benefits for that each individual also increase but so do the costs. Therefore, when an

individual is a large stakeholder, he or she is liable for significant costs if the company is unsuccessful but can receive large benefits if it is successful. Thus, large stakeholders typically are more active in corporate governance, as they seek to reduce their costs. This relationship can become complicated when more than one individual has a large share of stock, particularly if these individuals do not have consistent interests in the firm (Pound, 1988). Nepotism and favouritism becomes, more prevalent when there is concentrated ownership. Family controlled businesses in the Middle East commonly experience high ownership concentration and majority shareholders tend to pass them the blocks down to the next generation, thereby promoting favouritism and nepotism by ensuring that controlling shares remain in the family (Bhaumik & Gregoriou, 2010).

### **7.2.2 Board Independence**

The second corporate governance variable included in this study is board independence. This is similarly used to determine how the cost of capital related to governance mechanisms. The hypothesis is that there is a negative correlation between the cost of capital in non-finance Saudi companies, and board independence. Agency perspective theory presents the notion that board independence can greatly influenced the cost of capital. This study reveals through GLS regression that there is a significant negative effect of board independence (BIND) on capital costs, as measured using WACC. Based on these findings, hypothesis H3 should be accepted as the result supports the proposition of agency theory. Previous researchers have identified similar findings (Ashbaugh et al., 2004; Chen et al., 2003; Hashim & Amrah, 2016; Singhal, 2014). It is assumed that a board with greater independence is more likely to monitor more effectively and thereby contribute help decrease the cost of capital. Previous studies findings support this assumption. One research study indicates that, although there is a positive relationship between board independence and the cost of capital, this correlation is non-significant (Ali Shah & Butt, 2009). Saudi Arabia has a developing economy, and it appears that in such economies, compared to executive directors, non-executive directors have a greater and more effective monitoring role in the governance of a firm; thus, greater board independence can contribute to decreasing the overall cost of capital typically have broader knowledge than do members of other independent boards and can apply their knowledge and experience to enhance the firm's performance. The conclusions of this research are that agency theory explains the trends seen in Saudi Arabia's emerging economy and that the cost of capital is clearly influenced by board independence.

### 7.2.3 Board Size

Board size has consistently been recognised as a significant factor in organisational governance (Ashbaugh-Skaife, Collins, & Lafond, 2009; Chen et al., 2003; Jensen, 1993; Lipton & Lorsch, 1992). Therefore, this study analyses board size (i.e. the total number of board directors), as a corporate governance variable. It is hypothesised that there is a negative relationship between board size and the cost of capital in non-financial Saudi firms. Following the completion of the GLS regression analysis, it is clear that board size (BSIZE) has a significant positive impact on the cost of capital. Agency theory perspective is congruent with these findings, as it states that board size can significantly influencing influence the cost of capital. Therefore, hypothesis H1 is rejected, as board size is capable of influencing capital costs in a positive manner, as measured by WACC.

Previous researchers have, however, reported results that contrast with those presented in this study (Eisenberg et al., 1998; Elbannan & Elbannan, 2014; Hashim & Amrah, 2016; Khan, 2016; Koerniadi & Tourani-Rad, 2014; Mak & Kusnadi, 2005; Mazzotta & Veltri, 2014; Teti et al., 2016; Yermack, 1996). The board sizes that these researchers used were significantly larger than the average board size in Saudi Arabia. Saudi companies had, on average, only 8 board members, which is far lower than the averages presented in other studies. Moreover, Saudi firms have large block holders, which means that family members own large proportions of firms. The board members, therefore, are more likely to be selected as representatives of the block holders in accordance with favouritism, rather than based on their credentials. These favoured individuals often manipulate the firm's Management, so monitoring is less effective in these firms than in independent firms, and the effect on cost capital can be negative. One study from India demonstrated results similar to those in this study (Singhal, 2014).

The other corporate governance variables in this study are insider ownership, number of board meetings, CEO duality and audit committee structure. None of these variables as a significant correlation with the cost capital of non-financial firms in Saudi Arabia.

Although WACC shows a negative correlation between insider ownership and cost of capital, this relationship is insignificant. This implies that there is a trend towards higher inside ownership and smaller cost of capital. It was anticipated that insider ownership would be consistent with the agents' interests; however, this finding implies that this assumption is incorrect. Thereby we must fail to reject hypothesis H16. Ashbaugh et al. (2004) also noted

this negative relationship. This finding indicates that when there is a high level of insider ownership, managerial entrenchment risks decrease, subsequently reducing the cost of capital.

Board meeting frequency does not correlate significantly with cost of capital. Although it is clear that frequent board meetings help an organisation to work towards positive board monitoring, there is no correlation with cost of capital in non-financial Saudi firms. Corporate governance codes in Saudi Arabia tend to stipulate that board meetings should be regular so that board members correctly adhere to their roles, however this actually produced an insignificant negative relationship. Thereby there is no support for hypothesis H5 and we must fail to reject the null hypothesis.

The GLS regression findings do not provide any evidence to support hypothesis H7 (which states that CEO duality would influence cost of capital). It is clear that there is no significant relationship. This could again be due to the structure of corporations in Saudi Arabia, which are dominated by family members in high positions. The CEO and chairman are typically the same person in Saudi firms, and most likely a family member.

The audit committee variables (structure, size and number of meetings) also do not demonstrate a significant relationship with cost of capital based on the regression analysis. Therefore, hypotheses H9, H11 and H13 are all unsupported and we must fail to reject the null hypothesis. The conceptual framework, however, presents inconsistent expectations. The framework stipulates that audit committee structure should aid in reducing information asymmetry problems, which should help to increase the cost of capital in Saudi firms. Table 7.1 present a summary of the hypotheses and the findings from the regression analysis regarding the relationship between corporate governance and the cost of capital.

Three control variables are incorporated in this research; the size of the firm, its leverage and its sales growth. Cost of capital is significantly explained by these three control variables in non-financial Saudi firms. Cost of capital is negatively affected as firm size increases, with larger firms having lower cost of capital. Monitoring is likely to be easier to execute in larger firms due to their enhanced transparency, therefore investors are able to determine an appropriate returns and can dispute a return that is not adequate (Suchard, Pham, & Zein, 2012). There is also a significant and negative effect of leverage on the cost of capital. Cost of capital can be reduced if a firm is large enough to absorb debt. In this instance there is a debt tax shield, that is beneficial for reducing cost of capital. The final control



variable, sales growth, shows a positive correlation with the cost of capital. If a firm has high growth, it is more likely inclined to have higher demand (Suchard et al., 2012).

**Table 7.1: Summary of hypotheses of model one on corporate governance and the cost of capital**

<b>Independent variables</b>	<b>Hypotheses</b>	<b>WACC (Finding sign)</b>	<b>Findings significance</b>	<b>Status</b>
Board Size (BSIZE)	H1: There is a significant negative relationship between board size and the cost of capital.	+	Significant at the 5% level	Rejected
Board independence (BIND)	H3: There is a significant negative relationship between board independence and the cost of capital.	-	Significant at the 1% level	Accepted
Board meeting (BMEET)	H5: There is a significant negative relationship between board meeting and the cost of capital.	-	Insignificant	Rejected
CEO duality	H7: There is a significant positive relationship between CEO duality and the cost of capital.	-	Insignificant	Rejected
Audit committee size (ACS)	H9: There is a significant negative relationship between audit committee size and the cost of capital.	-	Insignificant	Rejected
Audit committee independence (ACI)	H11: There is a significant negative relationship between audit committee independence and the cost of capital.	+	Insignificant	Rejected
Audit committee meeting (ACM)	H13: There is a significant negative relationship between audit committee meeting and the cost of capital.	+	Insignificant	Rejected
Block holder ownership (BLOCK)	H15: There is a significant positive relationship between block holder ownership and the cost of capital	+	Significant at the 1% level	Accepted
Institutional ownership (INSID)	H16: There is a significant negative relationship between institutional ownership and the cost of capital	-	Insignificant	Rejected

### **7.3 Second Model: Corporate Governance and Financial Performance**

The ways in which corporate governance can influence financial performance have been a topic of interest for many researchers, (Fallatah & Dickins, 2012; Gaur, Bathula, & Singh, 2015; Ghabayen, 2012; Tornyeva & Wereko, 2012; Vo & Nguyen, 2014), including, to a lesser extent, in Saudi Arabia (Fallatah & Dickins, 2012; Ghabayen, 2012). The aim of the current study is to broaden the perspective obtained from the previous research. The study utilises the Saudi corporate governance code, which has not been used previously, and which could be a superior way to construct the index as it has greater applications in the Saudi corporate context than previously used measures. The majority of previous researchers have elected to use panel data. The data for the past studies represent the four-year period between as in 2006 and 2009 (Fallatah & Dickins, 2012), as well as 2011 specifically (Ghabayen, 2012). These short time scales are a limitation, which we have addressed by observing a nine-year period from 2006 to 2014. This larger sample size provides greater depth and accuracy for this study. This study's findings should significantly augment the previous research and ensure that greater generalisability to firms in Saudi Arabia.

This is the second question identified in this research study: Do corporate governance mechanisms affect the financial performance of non-financial firms in Saudi Arabia? As for the previous question, we use six models in the data analysis to determine how corporate governance mechanisms affect financial performance, and we use two regression analyses (OLS and GLS) to complete the results. The results for the GLS model (%) are presented in Tables 6.12 and 6.13 in Chapter 6, and they are discussed below.

Tables 6.12 and 6.13 present Models 1,2,3,4 and 5, which combines; the independent variables with the control variables. The discussion is based on the GLS regression results, and on a further analysis of Model 6, which is also presented in Tables 6.12 and 6.13 in Chapter 6.

In relation to Model 2 which focusses on the relationship between corporate governance mechanisms and financial performance, the current study reveals significant associations between financial performance and each of foreign ownership, government ownership, audit committee independence, board size, board meeting, audit committee size, and audit committee meeting. However, there is no significant association between financial

performance and either board independence or CEO duality. These relationships are discussed in greater detail below.

### **7.3.1 Foreign Ownership**

The results indicate that foreign ownership significantly and positively influences Tobin's Q (a measure of firm performance). This result indicates that there is support for hypothesis H18. Foreign ownership refers to foreign investors ability to have a say in a firm's decision making. This finding indicates that foreign investors can influence corporate governance, and that they have sufficient incentive to monitor and control the firms, or to offer greater assistance and guidance if domestic investors are failing to monitor the firm effectively (Gillan & Starks, 2003). This finding is consistent with previous research, which concluded that foreign investors could positively influence corporate performance due to their enhanced incentives regarding monitoring and control (Hanousek, Kocenda, & Svejnar, 2004). Some researchers have also confirmed this relationship for emerging markets, such as Saudi Arabia (Le & Thi, 2016; Lin & Shiu, 2003; Mitton, 2002). The positive influence of foreign ownership has been demonstrated in a wide array of research, as foreign owners provide enhanced managerial abilities and financial resources (Ghazali, 2010; Kirkpatrick, Parker, & Zhang, 2006; Oxelheim & Randøy, 2003; Sulong & Nor, 2010; Taufil-Mohd, Md-Rus, & Musallam, 2013; Taylor, 1990). The overall value of a firm has also been shown to be greater with the presence of foreign investors, who have greater interest than domestic investors in monitoring management decisions and highlighting mismanagement. Foreign investment also brings the potential of technology transfer, which subsequently enhances a firm's performance (Djankov & Hoekman, 2000).

Foreign investors, as previously mentioned, have greater interest than domestic investors in monitoring a firm's performance, so they are more likely to highlight and remove CEO's who exhibit substandard performance (Aggarwal, Erel, Ferreira, & Matos, 2011). This study's regression analysis indicates that foreign investment has a significant positive influence on Tobin's Q but an insignificant influence on ROA, which shows that foreign investors are most interested in market returns. Likewise, researchers who conducted a study on Japanese manufacturers concluded that there was no significant relationship between foreign ownership and ROA (Gedajlovic et al., 2005). This may be due to foreign investors placing limited trust in accounting data. Foreign investors are thus more likely to focus on improving management and the transparency of the operations to promote corporate governance, and therefore improve market returns. They monitor their firms for aspects that

can be modified to reduce agency costs and thus, improve the firms' overall performance. Interestingly, some research has conflicted with this idea, instead arguing that foreign investors are less likely to positively influence their firms' performance, as their economic environments differ from those of their firms and as information asymmetry and cultural differences may impact their approach to corporate governance (Doidge, Karolyi, & Stulz, 2007; Giannetti & Simonov, 2006; Leuz, Lins, & Warnock, 2010; Yilmaz & Buyuklu, 2016).

Investors are presented with significantly greater risk when they invest in foreign markets than when they invest in domestic markets. Therefore, they have greater interest in monitoring the management of foreign firms, as they seek to minimise their risk. They therefore employ tools such as performance based incentives (e.g. remuneration) to mitigate agency problems, and encourage management that best suits their own needs. The advantage that foreign investors provide is a link to resources beyond those of the domestic country, including more advanced technology, more effective practices, and increased costs and operational efficiency; all of these help to enhance the firms' overall performance. Foreign investors have become increasingly attracted to Saudi Arabia following the legislative reforms since 2000. The Saudi corporate governance code (SCGC) which was introduced in 2006 has also attracted investors as it ensures increased firm performance in Saudi Arabia.

### **7.3.2 Government Ownership**

The result of the GLS regression demonstrated that government ownership significantly and positively influences financial performance, as measured by Tobin's Q (TQ). However, this relationship has no significance as measured by ROA. ROA is an accounting based measure, and TQ is a market based measure, this could explain the discrepancy in the findings. Government ownership of a firm is associated with the motivation to take on commercial risk, which could positively affect TQ. Previous studies have considered political and social motivations, which have a less positive effect on Saudi firms' performance. Due to the consistency between this finding and those of other researchers (Boardman & Vining, 1989; Wei et al., 2005), it is appropriate to accept hypothesis H17.

This relationship could indicate that governments are more focussed on increasing the value of company assets than on making other types of improvements, therefore, government would support proposed redundancies if they were likely to improve a firm's efficiency. A government is able to provide a firm with greater access to technology and alternative practices, which can help to increase efficiency in both cost and operations. This

subsequently helps to enhance a firm's performance. The majority of firm's government owned Saudi firms are large and highly profitable, including telecommunications and petrochemical firms. These firms are greatly focussed on performance growth, and are more likely than other firms to have highly motivated and stable directors on their boards.

### **7.3.3 Audit Committee Independence**

Another corporate governance variable assessed in this research is the independence of the audit committee, which is based on how many members of that committee are classified as independent on the firm's board. The researcher anticipated that greater audit committee independence would influence the performance of non-financial firms in Saudi Arabia. The regression analysis indicates a significant relationship between the audit committee level of independence and the firm's subsequent performance, with increased independence equating to increased performance as measured by both ROA and TQ. These findings therefore support hypothesis H12.

These findings are inconsistent with some previous studies, in which researchers reported that increased audit committee independence was not positively associated with increased performance (Al-Matari et al., 2012; Ghabayen, 2012; Kajola, 2008). The findings are, however, consistent with some studies that have shown a strong positive relationship between audit committee independence and financial performance (Chan & Li, 2008; Farouk & Hassan, 2014; Hamdan et al., 2013). It is clear from this positive relationship that the audit committee can be highly influential in ensuring a firm's financial success, and therefore in protecting the shareholders' interests.

Research have both supported the argument that audit committee independence is highly influential on a firm's performance (Al-Matari et al., 2012) and highlighted such committees' utility in reducing problems within firms. The agency theory perspective includes the idea that independence within the audit committee likely influences firm performance positively. Audit committees are most likely to be a subcommittees of firms' boards; they play significant roles in protecting the interests of the firms' shareholders and in improving firms' corporate governance mechanisms (Mallin, 2016). Such committees are responsible for providing oversight, preparing financial statements, minimising the likelihood of earnings restatements and improving the financial information that the company provides in terms of both credibility and integrity, by highlighting potentially fraudulent statements (Tornyeva & Wereko, 2012). Confidence in a firm increases in response to a positive

performance by its audit committee, as the firm's investors can be assured that their investments are being used appropriately (Ojulari, 2012). Because committee members are expected to monitor management practices, they are independent of management and seek to improve managers' performance (Erickson et al., 2005; Klein, 1998).

This study's findings support agency theory in that the independence of the audit committee is significantly associated with Saudi firms' firm performance. Information is consistently provided between principles and agents; audit committees monitor this information and help to improve its quality, thereby reducing the likelihood of issues occurring (Rouf, 2014). They ensure that all information released to shareholders is unbiased and punctual, thus improving firms' transparency (Klein, 1998). Agency costs are lower and the monitoring of management is more careful when a firm has greater audit committee independence (Fama & Jensen, 1983b). Managers occasionally perceive there to be a benefit in not open disclosing information to shareholders, but audit committees minimise the likelihood of this behaviour occurring (Mohamad & Sulong, 2010). Thereby, this study supports agency theory's proposition that audit committees are beneficial in mitigating agency problems, as these committees reduce costs and help align the interests of a company and the major shareholders (Al-Matari et al., 2012). Audit committees are therefore highly important as corporate governance mechanisms in Saudi Arabia, as is the level of independence of these committees' members. Such committees ensure that companies fulfil the Saudi corporate governance code.

#### **7.3.4 Board Independence**

In this study, board independence also assessed as a corporate governance variable; it is determined according to the number of non-executives present on the board. Based on agency theory, this study's hypothesis is that there is a significant positive relationship between a firm's performance and its board's independence. The results, however, indicate no significant relationships between board independence and firm performance measured with either TQ or ROA. Therefore, there is the number of non-executives on a firm's board has no influence on firm's performance and we must fail to reject null hypothesis H4. Previous research has drawn similar conclusions (Haniffa & Hudaib, 2006; Vafeas & Theodorou, 1998). This could imply that non-executive directors are not providing sufficient oversight to make a noticeable impact. The relationship between directors' independence and firm value was assessed in a study of using 250 firms in the UK (Vafeas & Theodorou, 1998), and the researchers concluded that board independence did not influence ROA.

Similarly, Haniffa and Hudaib (2006) failed to identify a significant relationship between the board independence of 347 Malaysian firms and those firms' performance as measured by either ROA or TQ. Despite using a range of performance proxies, including ROA, ROE, TQ and PE ratio, the researchers in study also failed to identify any significant relationship between board independence and financial performance among 93 Nigerian firms over a three year period starting in 1996 (Sanda et al., 2005). Finally, a similar result was found in the Saudi Arabian context (Ezzine, 2011), so it is safe to conclude that board independence is not likely to be influence to financial performance.

### **7.3.5 CEO Duality**

For this research, the researcher hypothesise that CEO duality has a significant negative relationship with financial performance (measured by both ROA and TQ). The regression analysis, however, indicates that there is no significant relationship between CEO duality and subsequent financial performance in terms of either ROA or TQ. The researcher must therefore reject hypothesis H8. Previous research has also concluded that CEO duality has no significant effect on financial performance. In the US the CEO and board chairperson combination had little on stock market returns, and in South Africa, CEO duality had no effect on listed firms (Baliga, Moyer, & Rao, 1996; Mangena et al., 2012). Similar results have also been reported in Saudi Arabia (Al-Abbas, 2009). This research provides further empirical support for the work of Haniffa and Hudaib (2006), Heenetigala and Armstrong (2011) and Hsu (2007). There is a general perception that CEOs should be the most knowledgeable people within their organisations, and that they therefore are the most appropriate choices board chairpersons (Lipton & Lorsch, 1992). The SCGC does not address this issue, however.

### **7.3.6 Board Size**

The next corporate governance variable to be assessed is board size; this study expected that there would be a significant negative relationship between this variable and performance in terms of both ROA and TQ. The regression analysis, however, reflects a significant negative relationship between board size and TQ but shows no significant effect for ROA. Despite this, there is some evidence to support hypothesis H2. The significant relationship between board size and TQ aligns with results from previous research in this area (Arora & Sharma, 2016; Barnhart & Rosenstein, 1998; Cheng, Evans III, & Nagarajan, 2008; Guest, 2009; Habib, 2016; Jensen, 1993; Shakir, 2008; Singhal, 2014; Van Ees, Postma, & Sterken, 2003). For example, Yermack, (1996) assessed 252 large US firms to determine the



effect that board size had on financial performance, and concluded that there was a significant negative relationship; this implies that as board size grows, firm performance decreases. Similar findings have also been reported in the UK, France, Italy, Denmark and the Netherlands (Conyon & Peck, 1998). A large scale study of 1171 firms in the UK revealed the same negative relationship between performance and board size (Lasfer, 2004), as did an analysis of 2746 UK firms between 1981 and 2002, which showed that TQ, share returns and profitability all decreased as board size increased (Guest, 2009).

Similar results have been found in many other countries, including Malaysia (Mak & Kusnadi, 2005), Switzerland (Loderer & Peyer, 2002), Japan (Bonn, Yoshikawa, & Phan, 2004) and Canada (Bozec, 2005). A study of 318 Chinese firms demonstrated that ROE can also be negatively influenced by board size (Hui, 2012). The researcher can thus argue that interactions between board members become less focussed or useful for larger board sizes, meaning that smaller board sizes may be more effective (Jensen, 1993; Lipton & Lorsch, 1992; Yawson, 2006). This would support the SCGC's recommendation that there be no more than 11 members on a given board.

### **7.3.7 Board Meeting**

This study's regression analysis showed that the corporate governance variable of board meeting has a significant positive relationship with financial performance (TQ). This result supports hypothesis H6. This effect of board meetings also supports the agency and resource dependence theories; Lipton and Lorsch (1992), and Arora and Sharma (2016) reported similar findings. When directors meet more frequently, they are likely to be in a better position to monitor how their firm's performance, and to determine whether that performance is in line with the expectations of both shareholders and stakeholders (Solomon, 2007). A relatively active board is more likely to generate a positive reaction from the stock market, as such boards are perceived to be more productive. In the US, Karamanou & Vafeas, (2005) assessed 275 firms to determine whether more frequent board meetings had a significant effect on earnings forecasts; they concluded that there was a positive relationship. Similar findings have been presented for India, with high frequency meetings positively influencing the TQ (Jackling & Johl, 2009). This relationship has not yet been explored in Saudi Arabia, so the appropriate number of board meetings is not specified in the SCGC or in the Saudi Companies Act. Article 16 of the SCGC, however, does state that a board shall convene whenever its chairperson stipulates that a meeting should be held, as well as in cases of unforeseen events and when two or more board members make a written request.

### **7.3.8 Audit Committee Size**

The current study also examines audit committee size as a corporate governance variable; the researcher anticipated that it would have a negative effect on the non-financial Saudi firms' performance. The regression analysis reveals a significant negative relationship between the size of the audit committee and the subsequent firm performance in terms of both ROA and TQ. Therefore the researcher conclude that the findings support both hypothesis H10 and the previous research, which has indicated audit committee characteristics can affect firm performance (Haniffa, Abdul Rahman, & Haneem Mohamed Ali, 2006; Kyereboah-Coleman, 2008; Mohd Saleh, Mohd Iskandar, & Mohid Rahmat, 2007). Some research has demonstrated that firm performance is better when the audit committee is smaller, due to greater cooperation within the committee (Lin et al., 2006). Similarly, larger committees are likely to exhibit reduced cooperation and to therefore make decisions in a less timely manner and have less efficient governance due to increased expenditures from large and possibly less valuable meetings (Kalbers & Fogarty, 1996; Vafeas, 1999; Yermack, 1996). Based on the current and previous research, larger audit committees have negative impact on firm performance, which supports the SCGC's recommendation that audit committees have no more than four members.

### **7.3.9 Audit Committee Meeting**

The final corporate governance mechanism in this research is the number of audit committee meetings held. The researcher hypothesised that number of committee meetings held would positively influence firm performance in non-financial Saudi firms. The regression analysis results indicate that holding more meetings has a significant negative effect on firm performance; however, this is only true when measured using ROA. Based on this result, the researcher conclude that hypothesis H14 is empirically rejected. This finding is consistent with a wide body of previous research (Darko et al., 2016; Evans, Evans, & Loh, 2002; Haniffa et al., 2006; Menon & Williams, 1994; Sharma et al., 2009). Furthermore, this finding was confirmed for the developed economy of Australia (Evans et al., 2002), for which a study showed larger numbers of audit committee meetings negatively affecting firm performance. More meetings result in greater costs to the firm but also create cognitive dissonance, whereby previous decisions may be modified; therefore, the process takes longer (Haniffa et al., 2006). The SCGC recommends that no more than three audit committee meetings be held each year, which is consistent with the conclusions of both previous and

current research. Table 7.2 presents a summary of the hypotheses and the regression analysis findings regarding the relationship between corporate governance and financial performance.

As there is a risk of the variables omitted from the analysis influencing the results (Ntim et al., 2012). The researcher incorporated, control variables into this study based on those included in previous research regarding firm performance (Chalevas, 2011; Haniffa & Hudaib, 2006; Jayachandran, Kalaiganam, & Eilert, 2013; Mangena et al., 2012; Munisi & Randøy, 2013; Ntim, Lindop, Osei, & Thomas, 2015; Upadhyay, Bhargava, & Faircloth, 2014). Therefore, the variables are firm size, leverage, firm age, sales growth, and dividends. The GLS regression analysis indicates that there is a significant negative association between firm size and both TQ and ROA. Leverage and firm age have similar significant negative associations with ROA but no associations with TQ. The inverse is found for sales growth and dividends, which have significant negative associations with TQ but no associations with ROA. Firm size is calculated based on the natural log of total assets. Previous research also indicated a significant negative effect of firm size on TQ and ROA (Jackling & Johl, 2009). This study observes the effect that firm size has on Q-ratio, revealing the same significant negative relationship that, Agrawal and Knoeber (1996) reported using ROA. This result was also found for firms listed in South Africa (Mangena et al., 2012). When a firm is larger, it has a greater number of inspections and is generally under greater scrutiny, which reduces the ability of family members on the board to acquire an inappropriate level of profit. The relationship between leverage and firm performance, as measured by ROA, is not highly significant, with a probability level of 0.1.

Previous researchers have, however, identified this relationship in firms listed in Malaysia (Haniffa & Hudaib, 2006), Greece (Chalevas, 2011) and South Africa (Mangena et al., 2012). The negative effect of leverage on ROA, which is reflected in the majority of the research, is the product of conflict. Creditors and equity holders each evaluate which levels of risk and return they are comfortable with; when these are not harmonious, conflict occurs (Haniffa & Hudaib, 2006). Unlike greater firm size, greater sales growth has a significant negative effect on performance as measured by TQ. Researchers have indicated that, as a firm grows, its Q-ratio declines; this has been observed in the UK (Weir, Laing, & McKnight, 2002), Malaysia (Haniffa & Hudaib, 2006) and Canada (Gupta & Fields, 2009). In this study, a firm's age is also indicated to have a significant positive affect on its performance as measured by ROA. A Firm's age (in years) is calculated as of 2014. Younger firms typically have greater business risk, and mature firms are likely to have greater financial performance.

Although the result is not strong, the results indicate that more mature firms tend to perform better than younger firms. Dividends have a significant negative relationship with TQ, but it is only significant at the  $p < 0.1$  level, which is not a strong relationship. However, some research has indicated that firms announce greater dividend returns when they have low TQ (Officer, 2011). The year in which the results were obtained from was also a significant control variable, as was the firm's industry. Previous researchers also indicated that both the financial year and the industry type can affect a firm's value (Millstein & MacAvoy, 1998). Due to the large time period and the many industries incorporated in this research, these control variables are not individually presented with their coefficients in Tables 6.12 and 6.13.

**Table 7.2: Summary of hypotheses of model two on corporate governance and financial performance**

Independent variables	Hypotheses	Finding sign		Findings significance	Hypothesis Status
		ROA	TQ		
Board Size (BSIZE)	H2: There is a significant negative relationship between board size and financial performance.	+	-	Significant at the 10% level with TQ	Accepted
Board independence (BIND)	H4: There is a significant positive relationship between board independence and financial performance.	-	+	Insignificant	Rejected
Board meeting (BMEET)	H6: There is a significant positive relationship between board meeting and financial performance	+	+	Significant at the 1% level with TQ	Accepted
CEO duality	H8: There is a significant negative relationship between CEO duality and financial performance.	-	+	Insignificant	Rejected
Audit committee size (ACS)	H10: There is a significant negative relationship between audit committee size and financial performance.	-	-	Significant at the 1% level with TQ and 10% level with ROA	Accepted
Audit committee independence (ACI)	H12: There is a significant positive relationship between audit committee independence and financial performance.	+	+	Significant at the 1% level with TQ and 10% level with ROA	Accepted
Audit committee meeting (ACM)	H14: There is a significant positive relationship between audit committee meeting and financial performance.	-	-	Significant at the 5% level with ROA	Rejected
Government ownership (GOV)	H17: There is a significant positive relationship between government ownership and financial performance	+	+	Significant at the 1% level with TQ	Accepted
Foreign ownership (FORN)	H18: There is a significant positive relationship between foreign ownership and financial performance	-	+	Significant at the 1% level with TQ	Accepted

## 7.4 Conclusions

The purpose of this chapter is to provide an in depth discussion of the results obtained from the GLS regression analysis. This analysis is concerned with the relationship between corporate governance mechanisms (block ownership, institutional ownership, board size and independence, audit committee size, audit committee meeting, independence of audit committee and CEO duality) and the cost of capital as measured using WACC. Furthermore, the GLS regression analysis examined the relationship between corporate governance mechanisms (government ownership, foreign ownership, board meeting, board size, board independence, audit committee size, audit committee meeting, audit committee independence and CEO duality) and firm performance as measured by ROA and Tobin's Q. The results are discussed in terms of both theory and the evidence from the literature. The results are also specifically associated with the GLS regression analysis. A detailed overview of the control variables used in this study is also presented in this chapter, along with the corporate governance variables regarding the board, audit committee, and ownership structures. Due to this study's large number of hypotheses, they are presented in a table along with the analysis results. In the following chapter, the study's results are summarized, its limitations are highlighted and recommendations for future research are offered.

## **Chapter 8: Conclusion**

### **8.1 Introduction**

The purpose of this research is to investigate the relationship between corporate governance mechanisms and both the cost of capital and financial performance in Saudi Arabia in the period from 2006 through 2014. The empirical analyses of this research are presented in this chapter, which is organised in such a way as to highlight the restrictions of the current research and the recommendations for further research. The sections can be summarised as follows: Section 8.2 presents the study's important results based on the empirical analyses in Chapter 6; Section 8.3 discusses the role that this study plays in the overall body of research on corporate governance; Section 8.4 elaborates on this study's impact on the sector in terms of policy and practical recommendations; Section 8.5 review's the study's limitations. Finally, Section 8.6 presents suggestions for future research.

### **8.2 Summary of Research Findings**

The purpose of this research is to examine the impact that corporate governance mechanisms have on both firm performance and the cost of capital in Saudi Arabia. This study's corporate governance mechanisms board size, board independence, board meetings, audit committee size, audit committee independence, audit committee meeting, the duality of the Chief Executive, block ownership, foreign ownership, government ownership and institutional ownership. This study examines the effects that these corporate governance mechanisms have on the cost of capital in Saudi Arabia using the Weighted Average Cost of Capital (WACC) as the mechanism. Furthermore, return on Assets (ROA) and Tobin's Q are used to gauge how corporate governance affects the financial achievements of firms in Saudi Arabia. A range of sources and frameworks are used to carry out this research, including the agency, resource dependency and stewardship theories. Based on these theories and the findings of the literature review, a set of hypotheses are generated. This study's data are taken from the reports of 84 non-financial businesses listed on the Saudi Stock Exchange (TADAWUL) from 2006-2014, for a total of 756 business year data sets. The pooled OLS, the random-effects models (RF) and the Generalized Least Squares models (GLS) are the statistical methods used to test the study's hypotheses. Because endogeneity and unobserved heterogeneity affect the pooled OLS and RE estimates across the businesses, the GLS results

are the most accurate. A business's effects vary based on the actual events of a particular year within a particular industry sector, so to counteract this, a number of sensitivity analyses are performed to guarantee that the results are sound.

### **8.2.1 Corporate Governance Mechanisms and the Cost of Capital in Saudi Arabia**

The parameters that affect corporate governance and the cost of capital in Saudi are reviewed in the first empirical study (presented in Chapter 6), the results of which indicate a positive correlation between corporate governance and the cost of capital. This provides evidence that in developing countries, the process of corporate governance is quite important. It is interesting to note that when using pooled OLS to investigate the relationship between corporate governance and the cost of capital, block ownership has a substantial impact; the other variables however, have no significant relationship.

Using the GLS model to investigate the relationship hypotheses showed that block ownership and board size have substantial positive impacts on the cost of capital but that board independence has a negative impact on it. All of the other corporate governance parameters described earlier have no effect on the cost of capital; from this it can be deduced that when resolving agency disputes board size and block ownership plays key parts in Saudi businesses. Although many researchers (Ashbaugh et al., 2004; Blom, 2008; Eisenberg et al., 1998; Kiel & Nicholson, 2003; Koerniadi & Tourani-Rad, 2014; Mak & Kusnadi, 2005; Ohlson & Juettner-Nauroth, 2005; Yermack, 1996) have expressed opinions that differ from those presented in this research paper, the board size in these papers are much larger than those in Saudi Arabia, where there are, on average, only eight members. In addition, Saudi firms in many cases have significant block ownership due to the fact that many board members are also family members of the business owners; these family members exhibit significant bias in selecting management staff leading to managers who are less independent and financial monitoring that is less stringent. This has a negative effect on the cost of capital and confirms the effects of board size and block ownership from the GLS results.

The results of this research also show that board independence has a statistically significant impact on the cost of capital in developing economies based on WACC. As Saudi Arabia is an emerging economy it seems evident that non-executive directors play important roles in decision making and in monitoring of governance, thus helping to reduce the cost of capital. The independent board members' extensive knowledge and experience can augment a business's performance. This research leads to the conclusion that using agency theory there



is a clear correlation between board independence and the cost of capital, which can be seen as a trend in the emerging Saudi economy.

### **8.2.2 Corporate Governance mechanisms and Financial Performance in Saudi Arabia**

Chapter 6 describes, the second empirical study, which investigates the links between the firm performance of non-financial businesses in Saudi Arabia and the parameters of corporate governance. The results show a substantial association between financial performance and corporate governance, which is essential for emerging economies such as Saudi Arabia's.

Using pooled OLS to analyse this association and Tobin's Q as the performance measure, there is evidence of positive correlations between financial performance and each of government ownership, board meetings, audit committee independence. On the other hand, there is a substantial negative correlation between board size and financial success. When ROA was used to measure the success of a business, OLS shows a substantial positive correlation between government ownership and financial performance; however, it also shows a substantial negative correlation between firm performance and both the number of audit committee meetings and the number of audit committee members. In terms of both Tobin's Q and ROA, no other corporate governance parameters had any influence on firm performance.

Using the GLS technique to gauge the association between firm performance and corporate governance parameters and using Tobin's Q as the measure for success, the researcher find that government ownership, number of board meetings, foreign ownership, and audit committee independence have substantial positive impacts on firm performance; however, the number of audit committee members has a negative effect. The other corporate governance parameters have no impact on firm performance.

In ROA the GLS approach, then it is found an independent audit committee has a substantial positive impact on firm performance using ROA, but the number audit committee members and the audit committee meeting both have substantial negative effects on firm performance. The ownership structure and board structure variables have no effect on firm performance.

It is evident from the current research that the number of board meetings has a significant influence on the success of emerging economies such as Saudi Arabia. Jackling and Johl (2009), and Karamanou and Vafeas (2005) both reported substantial positive impacts using the agency and resource dependence theories; this is similar to the findings of

this study. This research has also found that, in Saudi Arabia the independence of the audit committee is important in ensuring financial success in terms of the Tobin's Q and ROA performance measures. Using agency theory, the independence of the audit committee is also beneficial to firm performance. As indicated by Mallin, (2016) the audit committee is usually formed as a subcommittee comprising the members of the full board who have skills and expertise in that area; this committee provides proper probity and stewardship and protect the shareholders' interests through proper governance processes. A number of researchers have provided further evidence of the positive association between the audit committee independence and financial success (Bouaziz & Triki, 2012; Chan & Li, 2008; Hamdan et al., 2013). Thus the audit committee plays an integral role in safeguarding the shareholders' interests and in guaranteeing the company's financial success.

The outputs of this research also show that government ownership and foreign ownership each have a statistically positive effect on financial success and on Tobin's Q. Hanousek et al. (2004), Mitton (2002), and Lin and Shiu (2003) all came to similar conclusions; the involvement of foreign investors actually improved company performance because these investors had a high level of control over monitoring procedures. It is also evident that government ownership is beneficial as it is in a government's best interest for its businesses to profitable so that it can facilitate access to the latest technology and expertise; as a result, operational efficiency and profitability can be greatly enhanced in companies with government investment. Boardman and Vining (1989), and Wei et al. (2005) confirmed all of these conclusions.

When Tobin's Q is used as the performance measure, board size has a substantial negative effect with performance reducing as the size of the board gets larger. Lipton and Lorsch (1992), Jensen (1993), and Yawson (2006) all proposed that smaller boards facilitate more effective discussions and hence, more agreement than do larger boards where the focus on the business may be diluted. Similarly, Jensen (1993), Barnhart and Roseinstein (1998), Van et al. (2003), Cheng et al. (2008), Shakir (2008), and Guest (2009) seemed to concur with this hypothesis. When using either Tobin's Q or ROA as the performance measure the size of the audit committee has a negative impact, which provides evidence that it is better to have a smaller audit committee; the SCGC endorses this, advising that there should be no more than four members of any audit committee. As indicated by Lin et al. (2006), this is also in agreement with agency theory. Using ROA, it is also evident that statistically significant negative effects result from having more audit committee meetings as extra meetings mean

increased costs. Haniffa et al. (2006) noted that this process creates ambiguity and uncertainty thus delaying important decisions and potentially affecting financial success. Academics such as Menon and Williams (1994), Evans et al. (2002), and Sharma et al. (2009) have confirmed this.

### **8.3 Contributions of the Study**

The concept of corporate governance has become increasingly important in companies' functioning and management; it has been the subject of a significant amount of substantial research that investigated how the various corporate governance parameters highlighted in this study can ensure the most efficient control of a business, thus maximising profits and growing the wealth of the owners or shareholders. Jensen and Meckling (1976) highlighted the conflict of interest between shareholders and managers, Denis and McConnell (2003) noted that the effective implementation of corporate governance practices ensure that resources are utilised appropriately to benefit the company and improve the investors' confidence. Thus improved financial success and reduced cost of capital result from establishing an efficient and effective corporate governance structure within a business. Based on the literature review, it is evident that much of the work on corporate governance structures, particularly regarding how they affect cost of capital and financial success has been focussed on developed countries such as the UK, other European nations and the United States. Very little is known, however about the situation in developing countries such as those in the Middle East (including Saudi Arabia), which have distinct cultures with regard to financial management procedures including issues concerning Sharia law. This is one of the first studies to investigate the effects that corporate governance structures have on the cost of capital and on financial performance among non-financial based firms listed on the Saudi Stock Exchange between 2006 and 2014. In addition, Saudi businesses are characterized by high ownership concentrations, with family members often controlling and managing firms. Thus, the results of this study regarding the relationships between corporate governance and both the cost of capital and firm performance are differing from the results for studies conducted in developed countries. Hence, the results of the present study will clarify how agency theory can be used to deduce the effects of corporate governance in emerging economies such as Saudi Arabia's.

This research has a number of innovative characteristics and contributions; for instance, it is the first, as far as the researcher can ascertain, to investigate the association

between corporate governance and the cost of capital in a developing country such as Saudi Arabia. In carrying out the study, the researcher revealed a number of factors regarding how effective corporate governance mechanisms are in improving the efficiency and profitability of Saudi businesses. Furthermore, this research can improve the efficiency of board structure, audit committee structure, and ownership structure in governance through its examination of board size, independence, meetings, audit committee independence, frequency of audit committee meetings, audit committee size, government ownership and foreign ownership. These topics are investigated particularly with the goal of enhancing and improving the performance and profitability of Saudi businesses.

Finally, this study uses the GLS regression to analyse information from the Tadawul, revealing evidence of dynamic endogeneity, as board size and block ownership substantially impact the cost of capital even after imposing controls on endogeneity. This is a new discovery for businesses in Saudi Arabia and it is reinforced by the suitability of the robust GLS approach taken in analysing the Saudi data. This research is one of the first to use the GLS approach to investigate the association between corporate governance parameters and the cost of capital in the Middle East.

## **8.4 Implications of the Study**

The results of this research lead to some inferences regarding corporate governance, cost of capital and financial performance in Saudi Arabia the first of which involves the development and delivery of policies that increase performance and reduce the cost of capital. This research demonstrates that economic benefits can be derived from the implementation of good corporate governance mechanisms and that, in Saudi Arabia the administrators who are developing policies are aware of the importance of good corporate governance regarding protection for investors.

This research looks at how corporate governance affects Saudi businesses' financial performance and the cost of capital, so the results have some implications for the development of theoretical concepts regarding this topic. Most prior research has focussed on developed countries' markets, which have been in operation for a long time and which therefore are more attractive for investors than less mature markets are. Agency theory, which is used here, demonstrates the importance of internal corporate governance

mechanisms such as board structure, audit committee structure and ownership structure, which alleviate agency conflicts and disparities between managers and shareholders.

This research demonstrates that there are positive relationships between the cost of capital as measured by WACC and both board size and block ownership. This result suggests that reducing the number of board members and the number of block holders in Saudi listed firms lowers the cost of capital. Similar findings have been reported in India another developing country (Singhal, 2014). However, the large majority of the available evidence from the literature indicated an inverse relationship between board size and the cost of capital (Elbannan & Elbannan, 2014; Hashim & Amrah, 2016; Khan, 2016; Koerniadi & Tourani-Rad, 2014; Mazzotta & Veltri, 2014; Teti et al., 2016). However, a few researchers have also reported a positive relationship between block ownership and the cost of capital (Bozec et al., 2014; Elston & Rondi, 2006). In Saudi Arabia, the business environment is characterised by large blocks of family members who together own a large proportion of their firm; this can lead prejudice and inequality in the selection of board members. Hence, the board members' monitoring role might be less effective in Saudi Arabia than in other nations, thus negatively affecting the cost of capital.

This study also illustrates a negative relationship between board independence and the cost of capital as measured by WACC. Researchers have reported similar findings (Hashim & Amrah, 2016; Singhal, 2014). This result implies that the non-executive directors in Saudi listed companies means provide their companies with better corporate governance mechanisms and lower cost of capital, when compared to companies without such directors. Because Saudi Arabia is a developing economy, these non-executive directors, who are usually highly knowledgeable and experienced, can, play an important role in the governance and management of their firms, thus decreasing the overall cost of capital. Thus, in light of agency theory and, Saudi Arabia's status as a developing economy, the cost of capital can be effectively decreased by increasing the number of non-executive directors and decreasing the board size and block ownership.

The outcomes of this research involved both practices and procedures as the association between corporate governance and the cost of capital in Saudi Arabia affects both businesses and investors. The current research, as mentioned previously, shows that boards with greater independence are more effective in exerting monitoring and control processes as a result, more independent boards are more likely to improve the cost of capital. In addition,

in an emerging and developing economy such as Saudi Arabia's, non-executive directors play an important function in the business's management, monitoring and governance, which has a positive impact by ensuring that the cost of capital remains as low as possible. Furthermore, within Saudi businesses this research has demonstrated that block ownership and board size have positive correlations with the cost of capital. As explained previously, the businesses in Saudi Arabia differ from other international companies in that they had fewer board members (eight on average) and had family members who held large blocks of shares. As a result, the board members in Saudi companies tend to be selected not based on skills and experience but based on nepotism. These selected board members can have substantial influence on the company's management, causing the governance and monitoring to be less effective; this has a correspondingly negative effect on the cost of capital.

Moreover, government ownership, foreign ownership, board meeting and audit committee independence all have a positive impact on financial performance, and board size and audit committee size have a negative relationship with firm performance. These results have consequences for both investors and businesses because investors need to seriously consider the facilitation of government and foreign ownership; after all, the evidence shows, and agency theory agrees, that these ownership types have a positive effect on firms' financial performance and on the alignment of interests. Therefore, the implication for policymakers is that they should promote and improve corporate governance mechanisms, thus leading to increasing the number of foreign investors. It is also evident that Saudi businesses need to consider the management and frequency of board meetings. This is because holding more meetings makes the monitoring process easier, because the shareholders' and other stakeholders' interests are better considered and because the positive affect of an effective audit committee is recognised. Saudi businesses need to understand the benefits of a sound audit committee and agency theory suggests that an independent audit committee, comprising appropriate members of the board, has a positive financial impact on the financial performance of the business's. The audit committee has a specific role within a business structure in that it provides a level of protection for investors and shareholders through an appropriate set of corporate governance mechanisms.

The evidence from this research indicates that there is a negative association between financial performance and the size of both the board and the audit committee; smaller boards are more effective because they waste less time on inappropriate interactions and are more focussed. Similarly, when audit committees have more members, the time spent in their

meetings is less productive and their governance is less efficient. In conclusion, reducing the size of boards and audit committees can make positive contributions to Saudi businesses' financial performance and success.

## **8.5 Limitations of the study**

A number of limitations affect these study findings. The first is that the current research does not consider the influence that the global financial crisis had on the results reported in Chapter 6; however, Saudi Arabia has not been dramatically affected by that crisis. Furthermore, the study's scope does not necessitate the inclusion of such analyses. The second factor is that a number of other corporate governance parameters are not taken into consideration, including the specific skills, experience and qualifications of individual board members, which are not included in the research due to the difficulty of accessing the relevant information. The third factor is the relatively small sample size, which comprises 84 non-financial Saudi listed companies and 756 observations. The exclusion of the financial businesses was due to substantial differences caused by various accounting rules and regulations and by the regulatory issues related to accounting appraisal, liquidity valuation and profitability in the financial business sector. Although this study's sample size is relatively small, it meets the study's requirement by addressing the set objectives, as the country is relatively small in terms of the breadth and width of its, business sector. Furthermore, the study sample is still larger than those of several recent empirical studies in this context. Hussainey and Al-Nodel (2008) used a sample of 64 businesses from a single year, and 2005, Al-Nodel and Hussainey (2010) used a sample of 37 businesses from the same year. Al-Abbas (2009) used 106 observations from three years between 2005 and 2007, Alzharaniet al. (2011) used 392 observations over four years, and Soliman (2013) used 64 observations over three years.

The time period of the study (2006 through 2014) may also be regarded as a minor limitation. The reason for selecting this time frame is that Saudi Arabia only introduced its corporate governance code in 2006, so that year was the logical start point for the analyses. Finally, only firms listed in the *Tadawul Stock Exchange* database were chosen as they had records of accomplishment of governance initiatives and of shareholder rights protections. Hence, excluding the non-listed firms does not pose a high risk to the validity or relevance of this study. Many important and influential family businesses are not listed on the Saudi Stock Exchange; these firms play an important role in the Saudi economy and could have

contributed substantially to this research. However, they could not be included, as the relevant data for this study were not available.

This research investigates the relationships between corporate governance mechanisms and the cost of capital and both financial performance within Saudi Arabia. As researchers have recognised that external governance control is insufficient, this study focussed on internal governance mechanisms. Thus, this study is expected to benefit the Saudi business sector by placing more emphasis on internal mechanisms in Saudi firms. The literature review provides some valuable insights and some evidence that corporate governance mechanisms are best when assimilated into the business's culture and not independent of it. These insights could have substantial bearing on the associations between corporate governance and both financial performance and cost of capital, and the empirical analyses provided in this study substantiate this with evidence.

## **8.6 Suggestions for Future Research**

There are a number of possibilities with regard to future research on this topic, the first of which is to use both balanced and unbalanced panel data. This would assist in analysing whether the research methodology affects the findings in any way and will allow for greater generalisation of the outputs. The second recommendation concerns the facts that according to Rwegasira (2000) several theories are associated with corporate governance and that the rules and regulations apply across a range of disciplines. To date, as indicated by Ntim et al. (2015) the current research on the link between governance and financial performance focusses, on governance theories such as those regarding agency, stakeholders, shareholders, resource dependence, managerial signalling and stewardship. Thus, future researchers should investigate alternative theories. These include legitimacy theory, political theories and transaction cost theories; using such theories would allow for the development new theoretical frameworks for investigating the associations between corporate governance and both financial success and cost of capital. This integration could also lead to a more profound comprehension of corporate governance practices and a closer incorporation of theory and practice. This third recommendation is that factors such as social responsibility could be investigated in terms of governance, as these factors are important parts of a business's ongoing positive development, as noted by Ntim and Soobaroyen (2013). Although, has been studied in the context of developed countries, it has not been investigated to any extent in developing economies. Focusing on social responsibility for companies in



Saudi Arabia would be interesting because of the Islamic principles and social norms that drive most affairs in this society.

As stated earlier, the investigating both internal and external parameters is important. Internal investigations are more prevalent in Saudi Arabia, so it would be very useful to conduct future research using a combination of internal and external parameters to see what effects this has on the associations between governance, performance and cost of capital in Saudi Arabia and other developing countries. Finally, it would be useful to look at the effects that the global financial crisis had on business's financial performance and cost of capital and at how corporate governance influenced these effects. To accomplish this, it would be advisable to analyse more firms being over a longer time period, thus generating more data and making the results more robust and generalizable.

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## Appendix

### A list of names and sectors of the 84 sampled firms

No.	Full Company Name	Symbol in Tadawul	Symbol in Thomson Reuters	Short name
<b>Petrochemicals sector</b>				
1	Advanced Petrochemical Co	2330	SA:APP	Advanced
2	Alujain Corp	2170	SA:ALC	Alujain
3	Nama Chemicals Co	2210	SA:NAC	Nama Chemicals
4	National Industrialization Co.	2060	SA:NIC	TASNEE
5	Sahara Petrochemical Co	2260	SA:SPL	Sahara
6	Saudi Arabia Fertilizers Co	2020	SA:SAF	SAFCO
7	Saudi Basic Industries Corp	2010	SA:BIC	SABIC
8	Saudi Industrial Investment Group	2250	SA:SII	SIIG
9	Saudi International Petrochemical Co	2310	SA:SIP	Sipchem
10	Yanbu National Petrochemical Co	2290	SA:YNP	YANSAB
<b>Cement sector</b>				
11	Arabian Cement Co	3010	SA;ARC	ACC
12	Eastern Province Cement Co	3080	SA:EPC	EPCCO
13	Qassim Cement Co	3040	SA:QCT	QACCO
14	Saudi Cement Co	3030	SA:SCT	SCC
15	Southern Province Cement Co	3050	SA;SPC	spcc
16	Tabuk Cement Co	3090	SA:TCC	TCC
17	Yamama Cement Co	3020	SA:YSC	YSCC
18	Yanbu Cement Co	3060	SA:YAC	YCC
<b>Retail sector</b>				

19	Aldrees Petroleum and Transport Services Co	4200	SA:APT	Aldrees
20	Alkhaleej Training and Education Co	4290	SA:ALK	Alkhaleej Trng Co
21	Fawaz Abdulaziz Alhokair Co	4240	SA:ALH	AlHokair
22	Fitaihi Holding Group	4180	SA:AHF	Fitaihi Group
23	Jarir Marketing Co	4190	SA:JMC	Jarir
24	Saudi Automotive Services Co	4050	SA:SAS	SASCO
25	Saudi Marketing Co	4006	SA:NAM	Farm Superstores
<b>Energy and utilities</b>				
26	National Gas and Industrialization Co	2080	SA:NGI	GASCO
27	Saudi Electricity Co	5110	SA:SEC	Saudi Electric.
<b>Agriculture and food sector</b>				
28	Al-Jouf Agricultural Development Co	6070	SA:JAD	ALJOUF
29	Almarai Co	2280	SA:ALM	Almarai
30	Anaam International Holding Group	4061	SA:ANA	Anaam Holding
31	Ash-Sharqiyah Development Co	6060	SA:AGD	Sharqiya Dev Co
32	Halwani Bros. Co	6001	SA:HLB	H B
33	Jazan Development Co	6090	SA:JAZ	JAZADCO
34	National Agricultural Development Co	6010	SA:NAD	NADEC
35	Qassim Agricultural Co	6020	SA:QAC	GACO
36	Saudi Fisheries Co	6050	SA:SFI	SFICO
37	Saudia Dairy and Foodstuff Co	2270	SA:SAC	SADAFCO



38	Savola Group	2050	SA:SAG	Savola Group
39	Tabuk Agricultural Development Co	6040	SA:TAD	TADCO
40	Wafrah for Industry and Development Co	2100	SA:FPC	WAFRAH

#### **Telecommunication and information technology**

41	Etihad Etisalat Co	7020	SA:EEC	Etihad Etisalat
42	Saudi Telecom Co	7010	SA:STC	STC

#### **Multi-investment**

43	Al-Ahsa Development Co	2140	SA:AAD	ADC
44	Aseer Trading, Tourism and Manufacturing Co	4080	SA:ASE	Aseer
45	Kingdom Holding Co	4280	SA:KIN	Kingdom
46	Saudi Advanced Industries Co	2120	SA:SAD	SAIC
47	Saudi Arabia Refineries Co	2030	SA:SAR	SARCO

48	Saudi Industrial Services Co	2190	SA:SIS	SISCO
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#### **Industrial investment**

49	Al Abdullatif Industrial Investment Co	2340	SA:ALU	AlAbdullatif
50	Astra Industrial Group	1212	SA:AST	Astra Indust
51	Basic Chemical Industries Co	1210	SA:BCI	BCI
52	Filing and Packing Materials Manufacturing Co	2180	SA:FPM	FIPCO
53	National Metal Manufacturing and Casting Co	2220	SA:NMC	Maadaniyah
54	Saudi Arabian Mining Co	1211	SA:SAM	MAADEN
55	Saudi Chemical Co	2230	SA:CCC	Chemical
56	Saudi Industrial Export Co	4140	SA:SIE	SIECO

57	Saudi Paper Manufacturing Co	2300	SA:SPM	SPM
58	Saudi Pharmaceutical Industries and Medical Appliances Corp.	2070	SA:SPI	SPIMACO
59	The National Company for Glass Industries	2150	SA:NGA	Zoujaj

### Building and construction

60	Al-Babtain Power and Telecommunication Co	2320	SA:ALA	AL-BABTAIN
61	Arabian Pipes Co	2200	SA:APC	APC
62	Middle East Specialized Cables Co	2370	SA:MES	MESC
63	National Gypsum Co	2090	SA:NGC	NGC
64	Saudi Arabian Amiantit Co	2160	SA:SAA	Amiantit
65	Saudi Cable Co	2110	SA:SCC	SCC
66	Saudi Ceramic Co	2040	SA:SRC	Saudi Ceramics
67	Saudi Industrial Development Co	2130	SA:SID	SIDC
68	Saudi Steel Pipe Co	1320	SA:SSP	SSP
69	Saudi Vitriified Clay Pipes Co	2360	SA:SAU	SVCP
70	Zamil Industrial Investment Co	2240	SA:ZII	Zamil Indust

### Real Estate Development

71	Arriyadh Development Co	4150	SA:ARR	ARDCO
72	Dar Alarkan Real Estate Development Co	4300	SA:DAR	Dar Al Arkan
73	Emaar The Economic City	4220	SA:EMA	Emaar EC
74	Jabal Omar Development Co	4250	SA:JAB	Jabal Omar
75	Makkah Construction and Development Co	4100	SA:MRD	MCDC
76	Saudi Real Estate Co	4020	SA:SES	SRECO
77	Taiba Holding Co	4090	SA:TAI	Taiba

### Transport

<b>78</b>	National Shipping Company of Saudi Arabia	4030	SA:NSC	Bahri
<b>79</b>	Saudi Public Transport Co	4040	SA:SPT	SAPTCO
<b>80</b>	Saudi Transport and Investment Co	4110	SA:SLT	mubarrad

#### **Media and publishing**

<b>81</b>	Saudi Research and Marketing Group	4210	SA:SRM	SRMG
<b>82</b>	Tihama Advertising and Public Relations Co	4070	SA:TFA	TAPRCO

#### **Hotel and Tourism**

<b>83</b>	Dur Hospitality Co	4010	SA:SHR	Dur
<b>84</b>	Tourism Enterprise Co	4170	SA:TEC	TECO