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A Cross-Country Study of the Effects of Corporate Governance Mechanisms on Risk-Taking, Credit Rating and Cost of Capital

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**A CROSS-COUNTRY STUDY OF THE EFFECTS OF CORPORATE  
GOVERNANCE MECHANISMS ON RISK-TAKING, CREDIT  
RATING AND COST OF CAPITAL**

Aws Mousa AlHares

A thesis submitted to the University of Huddersfield in partial fulfilment of  
the requirements for the degree of Doctor of Philosophy

The University of Huddersfield Business School

**March 2017**

## **Abstract**

The study empirically examines three main issues. First, the study examines the relationship between corporate governance and risk-taking. Second, the study investigates the association between corporate governance and credit rating. Third, the study examines the link between corporate governance and cost of capital. Corporate governance was represented in this study by the mechanisms of corporate governance index, ownership structure and board structure, and firm performance was represented by risk-taking, credit rating and cost of capital. Using a sample of 200 companies from 10 OECD countries over the 2010 to 2014 period and relying on a multi-theoretical framework, the findings are as follows. First, the results suggest that firms with good corporate governance are shown to engage less risk-taking. Second, the findings indicate that firms with good corporate governance generally have higher credit ratings than firms with poor corporate governance. Third, the results suggest that firms with good corporate governance generally have lower cost of capital than firms with poor corporate governance. Ownership structure and board structure, as representatives of corporate governance, all demonstrated similar results. Differences among firms were seen in terms of legal and accounting traditions, as well as in terms of culture. Yet, the findings appeared to be relatively consistent across Anglo-American and Continental European traditions, despite the fact that there was different emphasis placed on some corporate governance mechanisms, and despite different cultural characteristics. The findings are robust to endogeneity problems, alternative measures and estimation techniques used such as two-stage least squares, lagged reports and fixed effects reports. Overall, the findings have major implications for regulators, academics and practitioners.

## **Dedications**

To God that has enabled me to carry through this project,

To My country Canada, that has given me the opportunity to pursue this study,

To My parents for their unconditional support to me from childhood and made me believe I can do it,

To my brother and sister,

And to my wife, for encouraging me when I most needed that support, and to my daughter Joud and son Mousa, for understanding when I had to work and not spend some valuable time with them.

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(Aws Mousa AlHares)

(Sep, 2016)

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## **Chapter 1: Introduction, Background and Motivation**

### **1.1 Introduction**

In recent years, researchers have shown great interest in the subject of corporate governance and its possible impact on firms. Consequently, several studies have examined the association between corporate governance and firm value (Yermack, 1996; Gompers et al., 2003; Beiner et al., 2006; Renders et al., 2010; Ntim et al., 2012; Kumar & Zattoni, 2013; Griffin et al., 2014); between CG and corporate social responsibility (CSR) (Alshammari, 2015; O’Riordan, Zmude & Heinemann, 2015); between CG and earnings management (Xie, Davidson & DaDalt, 2003); between CG and compensation (Kaplan, 2012), and between corporate governance and voluntary disclosure (Eng & Mak, 2003). Generally, these studies suggest that CG can impact positively on corporate performance or firm value, CSR, earnings management, compensation and voluntary disclosure. The relevance of these studies is appreciated, as they highlight the importance of corporate governance in examining different aspects of performance. However, by contrast, and despite their relevance, studies examining the extent to which CG drives risk-taking (RT), credit ratings (CRR) and cost of capital (COC) are rare. More specifically, there is a dearth of studies on how different corporate governance mechanisms used by companies influence the risk-taking, credit ratings and cost of capital of those companies (Switzer & Wang, 2013; Matthies, 2013; Tran, 2014). Consequently, this study seeks to contribute to the extant literature by addressing the limitations of previous studies via an empirical examination of three main issues as follows. First, the study will examine the relationship between corporate governance and risk-taking. Second, the study will investigate the association between corporate governance and credit rating. Third, the study will assess the link between corporate governance and cost of capital.

The remainder of this chapter is organised as follows. Section 1.2 provides the background to the study. Section 1.3 outlines the motivation, the problem and the need for the study. Section 1.4 discusses research questions. Section 1.5 outlines the research objectives and section 1.6 discusses the research contribution. Section 1.7 outlines the thesis organisation, describing what is covered in each chapter, and section 1.8 gives a brief summary of the thesis as a whole.

## **1.2 Background**

Background information is important for contextualising this thesis. Corporate governance mechanisms are important, considering that corporate governance is about how companies use their resources to resolve conflicts among their many stakeholders (Daily et al., 2003). However, a distinction must be made between governance mechanisms. On the one hand, there are internal governance mechanisms, which are under the direct control of the owners of the companies; on the other hand, there are external mechanisms, which are not under the control of the owners of the companies, but which reflect the governance characteristics that are unique to countries in which these companies operate (Radebaugh et al., 2006). These country characteristics exert a great deal of influence on the corporate governance systems under which companies operate. For example, countries have unique legal systems, and these systems influence the nature of the corporate rights that companies must recognise in doing business. Legal systems are important because of the significant external controls that they exert on the companies working within them. Other unique factors that play an important role in this study are the particular accounting practices used, the unique characteristics of the country and their cultures.

The key conceptual issues used in this thesis are intended to show how corporate governance mechanisms are highly determined by the specific countries in which firms operate, and how the specific mechanisms that are found to be useful in the particular countries are based on the legal, accounting and auditing practices as well as on the specific

ownership and debt issues that are common in those countries. Moreover, culture also influences customs, general worldview, attitudes and values, all of which are instrumental in how firms and their managers carry out their business operations. Wanting to be an active participant in the global economy, management strive to invite investors to their firms. All of these factors, namely, the legal, accounting and auditing practices, the specific ownership forms that dominate, the manner in which debt is handled, and the protection that is afforded investors in particular countries, play an important role in determining which firms are most attractive to these investors.

Countries in the OECD differ with respect to their legal, accounting and auditing practices, as well as ownership and debt issues. The two major legal systems operating among nations in the OECD provide firms with different legal rights based respectively on the common law system, as in the US and the UK, and the civil law or code law system, as in Germany and France (Radebaugh et al., 2006). While the common law system offers protection to small individual shareholders, the civil law system provides excellent protection for large institutional shareholders (Radebaugh et al., 2006). The critical differences between the two legal systems are the rights and remedies they afford shareholders. Risk-taking, credit rating and cost of capital therefore respond differently in the countries using the two major legal systems.

Risk-taking is an important concept in this thesis, because it affects performance, and how a firm deals with risk-taking through its corporate governance mechanisms also affects its shareholders and debt holders. Weak governance can lead to greater financing costs for higher debt. This necessitates shareholders and debt stakeholders being knowledgeable about the rules pertaining to governance in the firm as well as in the country in which they are invested. It is therefore in the interests of shareholders and debt stakeholders to know that the companies in which they invest have good monitoring systems that ensure that management is truly representing their interests. This is in keeping with agency theory. However, as Fitch Ratings (2004) point out, although management must be carefully

monitored to ensure that the interests of shareholders and stakeholders are protected, stakeholders must bear in mind that some elements of corporate governance favour shareholders over debt stakeholders. In some situations, shareholders have more rights than debt stakeholders (Fitch Ratings, 2004). In other words, in some OECD countries with a common law legal system, there is greater protection for shareholders, particularly minority shareholders, while in countries with civil law systems, there is less protection for shareholders, but more for debt stakeholders.

Additionally, in some OECD countries, corporate governance mechanisms are critical to whether and how shareholders can use their voting power to encourage management to undertake risky investments or engage in ownership changes that can harm bondholder interests. If shareholders consider a certain course of action to be advantageous to them, they can put pressure on management to take action. However, taking on riskier projects increases the likelihood of default, resulting in lower credit rating and higher cost of capital. This could affect bond holders, since any likelihood of default would affect the security of their debt. Even when shareholders do not encourage management to undertake risky investment, management may see it in their interest to undertake some new investment which could also be risky for bond holders.

Ashbaugh-Skaife et al. (2006) examined the governance attributes that are designed to increase the monitoring of management and discovered that shareholders, through their monitoring, were able to improve the decision-making process, prevent management from taking action that was not in the interest of shareholders, and decrease the imbalance in the information that was available to management and the information to which other stakeholders had access (Ashbaugh-Skaife et al., 2006). In short, in this study, the monitoring of management was seen as a critical factor that had to be given ongoing consideration and could not be left to chance.

Therefore, in this thesis, risk-taking is an important concept, for it can affect firm performance, but it also shows how corporate governance mechanisms can be critical in protecting shareholders and debtholders in the face of excessive risk-taking.

Credit rating is another important concept that is critical to firm performance. Understanding how corporate governance mechanisms can influence credit rating requires an understanding of how credit ratings work. A credit rating is an opinion expressed by credit rating agencies as to a company's ability to meet its financial obligations (Standard & Poor's, 2002). Credit rating is therefore based on how creditworthy the crediting rating agency thinks the firm is (Standard & Poor's, 2002). On deciding the creditworthiness of a company, credit rating agencies examine its corporate governance structure. If the governance structure is weak, then the credit rating agencies would very likely see the firm's financial position as poor and stakeholders in the company as vulnerable to possible losses (Fitch Ratings, 2004). The credit rating agencies, based on this observation, would therefore give the company a poor credit rating (Fitch Ratings, 2004). Such a credit rating would alert investors and would-be investors that a particular firm has high risk levels; while some investors or lenders would see this as an opportunity, they may demand premium rates in order to take on such risk.

In deciding the credit rating of a company, credit rating agencies will take three major categories into consideration. The first is the financial ratios and other financial data of the company. Next, credit rating agencies will examine the corporate governance mechanisms. Third, these agencies would also take into consideration the economic conditions in which the company operates. National GDP growth will influence the credit ratings of companies in the particular country (Ashbaugh-Skaife et al., 2006).

In terms of the financial ratios and other financial data of the company, credit agencies look at several, including leverage, or the total indebtedness of the company, debt to cash flow, and net worth, to determine the profitability and performance of the company

(Lundholm and Sloan, 2004). These indicate the credit risk of the company, and so are relevant for credit agencies.

Another key concept used in this thesis is cost of capital. Also related to risk-taking and credit rating, cost of capital is seen as critical to the performance of a firm. If the cost of borrowing funds is high, this will impact firm performance. This concept is also related to other country characteristics. A country with a strong and effective legal system will have rules and regulations in place to protect the rights of investors. For example, a legal system that requires companies to provide their shareholders with timely information and that has rules for enforcing contracts would be considered good for investors. Companies in countries with this type of legal system would not have to engage in as much monitoring as companies in countries where this information is missing. Therefore, the cost of capital in countries with good legal systems would be relatively low (Hail and Leuz, 2006). According to these researchers, there are generally lower costs of capital in countries with strong securities regulation, and where there are legal mechanisms for enforcing the law (Hail and Leuz, 2006). The rationale here is that there are mechanisms in place that would ensure that shareholders' rights are to some degree protected in case of default. Investors would rather invest in countries where the rights of investors are prioritised. La Porta et al. (2002) examined the equity valuation of firms with different legal systems and discovered that firms with strong and effective legal systems tend to have greater equity valuations, and more interest from investors.

When investors decide to invest in a company, they consider their required return and base this on the systematic risk of the company. Mitton (2002) found that companies with weak corporate governance performed poorly during economic downturns, and this was usually associated with a greater cost of capital. This was because investors, realising the additional risk involved in investing in companies with poor performance, required a premium on their investment. It was also the case that with poor governance, shareholders would also have to engage in more monitoring in order to protect their interests. The rationale for this

poor performance and greater cost of capital can be attributed to the fact that with poor governance, there was usually too little monitoring of management. Consequently, management was more likely to borrow more funds to support new projects (Mitton, 2002). Such action by management would often expose the company to greater risk, increasing the cost of capital.

Credit rating agencies also consider the economic conditions prevailing at the time. If a country is undergoing strong growth, then this is seen as a strong environment in which companies operate. Credit rating agencies are likely to be influenced to offer a positive opinion on a company operating in such an environment (Ashbaugh et al., 2006). Also, if a country is experiencing healthy GDP growth, companies operating in this country are likely to have more positive credit ratings than companies operating in countries with poor GDP growth.

The key concepts of risk-taking, credit rating and cost of capital have been identified as important in relation to firm performance and as critical to various forms of corporate governance practiced in different OECD countries. This is significant in light of the fact that different governance structures are stressed in different OECD countries. By identifying the different countries and the legal, accounting, auditing, ownership and debt structures supported, the specific country characteristics, such as population size, culture and cultural variables, and the individual firms and their governance structures, this study is able to suggest firms that are good investment prospects because of their firm practices and country characteristics. The country characteristics used in this study include prosperity and size of economy, level of investment, level of corruption and inflation rate, as well as Hofstede's cultural variables, which include power distance, individualism, masculinity, uncertainty avoidance and long-term orientation, all of which affect approaches to business (Hofstede, 2015).

This study therefore uses these key concepts, namely, risk-taking, credit rating and cost of capital, as measures of firm performance. Corporate governance is represented by a corporate index drawn from the OECD Principles of Corporate Governance. Independent variables used in this study include Corporate Governance Index (CGI), ownership structure and board structure; these variables are used to show what happens to other variables. Ownership is further broken down into block ownership, institutional ownership and director ownership. Board structure is further broken down into independent directors, board size, board diversity and frequency of board meetings.

These concepts are all taken into consideration, as this study shows the relationships between corporate governance and risk-taking, corporate governance and credit rating, and corporate governance and cost of capital. This study shows how these affect firm performance.

### **1.3 The motivation, problem and the need for the study**

This study is motivated by a number of things. First, while a number of studies have examined the association between general corporate governance and performance (e.g. Beasley, 1996; Hansson et al., 2011; Letza et al., 2004); the evidence relating to the impact of corporate governance on risk-taking, credit rating and cost of capital is scant (Tran, 2014). Similarly, the limited evidence on the impact of corporate governance mechanisms on corporate risk-taking, credit rating and cost of capital has mainly been conducted within a single country rather a cross-country context (Ashbaugh-Skaife et al., 2004). Arguably, this limits the generalisability of the results. Corporate governance is a worldwide subject because of the globalisation of organisations. It is recognised as playing a real part in the management of organisations in both developed and developing countries. Nevertheless, Davies and Schlitzer (2008) note that corporate governance practices are not uniform across nations. This study intends to add to the knowledge on the association between general corporate governance and performance.



Second, since OECD countries differ in the corporate governance structures they use (OECD, 1998), and since countries differ in the amount of transparency they provide to their shareholders (Ashbaugh-Skaife et al., 2004), rational investors without adequate information may consider that there would be additional costs that the company would have to undertake, which so this would effectively raise the cost of equity capital (Tran, 2014). This study intends to show investors what to look for when making decisions about investing in firms in different countries.

Third, recognising the importance of legal and financial institutions in determining governance mechanisms (Shleifer and Vishny, 1997), and the role of government regulations in influencing stock exchange rules and takeovers, this study aims to show the impact of legal, financial and other country characteristics on corporate governance and its influence on firm performance.

Fourth, the study will perform a comparative analysis of two different traditions: the first is a group of Anglo-American countries, including listed companies from the US, Canada, the UK, Australia and Ireland. The second is the Continental European or traditional countries, including listed companies from Germany, France, Italy, Spain and Japan. The purpose of this comparative study is to look at the impact of regional differences on different arrangements of corporate governance and ownership structures. Moreover, this study identifies and compares existing corporate governance codes in those ten countries. This study aims to extend the knowledge on the difference between the two traditions that are represented in the OECD, and how these are accommodated within the OECD Principles of Governance.

Fifth, there is a need for this study. To the best of the researcher's knowledge, this is the first study looking at corporate governance, credit rating, risk-taking and cost of capital. The focus is an examination of the effect of corporate governance mechanisms on dependant variables, as this study will perform data regression analysis to estimate the

effect of corporate governance mechanisms on different measures of credit rating, risk-taking and cost of capital. R&D expenditures, R&D/Assets, R&D/Sales and volatility in accounting performance measures such as ROA are the measures of risk-taking in this study. Although Tran's (2014) study extends the empirical work on corporate governance and financing costs considering multidimensional governance structure amongst German firms as a special case, this study will determine the effect of corporate governance mechanisms on firms' risk-taking, credit rating and cost of capital in ten different countries.

#### **1.4 Research questions**

The research questions and objectives of this study pertain to the relationship between corporate governance mechanisms and risk-taking, credit rating and cost of capital in various countries and under different accounting systems.

From the literature, poor governance has been identified as the major cause of recent high-profile cases of corporate fraud. The main research questions are:

- (a) What is the level of compliance with and disclosure of the OECD corporate governance rules?
- (b) What is the relationship among corporate governance and risk-taking as measured by: Research and Development Expenditure (R&D), volatility in accounting performance measured by Return on Assets?
- (c) What is the relationship among corporate governance and credit ratings?
- (d) What is the relationship among corporate governance and cost of equity or capital?

In other words, can governance explain observable differences in firm level risk-taking? Excessive risk-taking could be a symptom of bad or poor governance, and vice-versa. By contrast, well governed firms will be able to strike a fair balance between excessive and

sustainable levels of risk - optimal risk assumption level that is able to generate sufficient levels of profit, but does not jeopardise the going concern status of the firm (does not increase the firm's chance of going bankrupt). Excessive risk-taking could have direct implications for a firm's credit rating and thus overall cost of capital. Hence, and in theory, excessive risks taking will lead to lower credit ratings and, consequently, a higher cost of capital. Arguably, this is what happened in the recent (2007 - 2008/09) global banking or financial crisis.

### **1.5 Research objectives**

Therefore, the main objective of this thesis is to examine the relationship between corporate governance mechanisms and firm performance. Secondary objectives are to assess the levels of compliance with corporate governance principles of 2004 OECD on firms from two different traditions, seeks to ascertain whether corporate governance is related to risk-taking, seeks to ascertain whether corporate governance is related to credit rating, seeks to ascertain whether corporate governance is related to cost of capital and to see how these relationships are influenced by the different corporate governance mechanisms that companies use.

### **1.6 Research contributions**

It is expected that this study will make a notable contribution to this field by offering information to countries that are not realising the level of investment that they require, and could provide suggestions that would help them in making changes and implementing mechanisms that would establish good corporate governance, thereby attracting more capital based on companies' performance.

This study will highlight how good corporate governance was also seen to reduce the risk premium that investors were demanding when corporate governance was less effective (Morck et al., 1988; Anderson and Reeb, 2004). The degree to which investors are able to

make this decision is often based on the extent to which corporate governance structures are observable and the degree to which investors are able to detect non-diversifiable risk. This study makes a contribution by highlighting good corporate structures and helping investors identify risk.

This research, therefore, seeks to contribute to the extant literature by exploring the effects of corporate governance mechanisms on corporate risk-taking, credit rating and cost of capital by assessing the levels of compliance with and disclosure of CG principles contained in the 2004 OECD Corporate Governance Code in firms from two different traditions: Anglo-American and Continental European. The study will also make a contribution by employing firm-level corporate governance mechanisms (i.e., a CG index, ownership structure and board structure) by accounting for firm-level and country-level differences such as firm size, sales growth, audit committee number, corporate governance committee number, leverage, capital gain yield, stock market capitalisation, corruption index, inflation, GDP per capita, population, masculinity and power distance, and by basing the assessment on a multi-theoretical framework that incorporates insights from agency, stewardship, resource dependence, legitimacy and institutional theories.

## **1.7 Thesis organisation**

The remainder of the thesis is divided into six chapters. As explained, this thesis examines the relationship between corporate governance mechanisms and risk-taking, credit rating and cost of capital, and the financial performance of companies in various countries, with different accounting systems. Chapter Two will therefore try to give a working definition of corporate governance as it is practiced in OECD countries (OECD, 2004). The chapter will begin by giving an overview of the OECD, showing how corporate governance became an important subject. The chapter will then give a historical overview of how corporate governance came to be introduced and adapted to the stakeholding and shareholding corporate governance models, taking into consideration the unique

characteristics of these models (Krenn, 2014; Aguilera& Cuervo-Cazurra, 2009). In defining these models, Chapter Two will also examine the accounting, cultural and legal systems as well as the ownership and debt structures in these countries that have an impact on the different corporate governance mechanisms used.

Chapter Three gives a theoretical review. It shows how the various theories related to corporate governance apply to risk-taking, credit rating and cost of capital. Chapter Four discusses in detail the corporate governance mechanisms and aspects of corporate governance that influence risk-taking, credit rating and cost of capital in organisations (Ashbaugh-Skaife et al., 2004; Elbannan, 2009). Different ownership structures are also examined, namely, block ownership, institutional ownership and director ownership, and these are examined in terms of their effects on risk-taking, credit rating and cost of capital. Board structure variables as well as frequency of meetings is also examined in terms of their influence on risk-taking, credit rating and cost of capital.

Chapter Four uses empirical literature to develop the hypotheses that form the basis of this study. In short, Chapter Four studies in detail how these various aspects of corporate governance, as evident in the corporate governance mechanisms, impact risk-taking, credit rating and cost of capital.

Chapter Five describes the research design. This chapter outlines the research paradigms and the positivist approach used. Details are provided for the sample selection, with a discussion of the criteria used for the final selection, and the reasons for selecting the final 200 stratified sample. Data and sources are provided for the selection of the sample. This chapter discusses the research methodology and the construction of the corporate governance indices used. It justifies the use of unweighted indices by showing the advantages and disadvantages of weighted and unweighted indices. Chapter Five also shows the relationships between the dependent, independent and control variables that are

used to study the impact of corporate governance mechanisms on risk-taking, credit rating and cost of capital for the chosen firms.

Chapter Six reports the empirical results and provides a discussion of the findings. It starts by giving descriptive analysis and discussion on the relationships between corporate governance and risk-taking, credit rating and cost of capital. Bivariate or correlation analysis is provided, with discussion on the relationship between corporate governance and risk-taking, credit rating and cost of capital. Multivariate regression analyses, results and discussion follow, as do robustness, sensitivity and additional analyses.

Chapter Seven provides conclusions for the study based on the analyses. A summary of the research findings is given, followed by implications of the research, the contribution that the research makes, and the limitations of the study. Research recommendations are given and avenues for future research are suggested.

## **1.8 Summary**

This chapter has laid out the plan for this study. It is the beginning of the thesis organisation which relationship between corporate governance and risk-taking, credit rating and cost of capital, and of the corporate governance mechanisms used in past research, as well as the different forms of ownership and board structure studied. Based on this literature, the following chapter develops the study hypotheses, while Chapter Five designs the empirical study based on multivariate regressions. The findings of the thesis, reported in Chapter Six, show that they confirm earlier studies for the most part, thereby showing the importance of corporate governance to the success of firms in OECD countries. The last chapter highlights the importance of the study, recognises shortcomings, points to the contributions and accomplishments, and makes recommendations for further studies.

## **Chapter 2: Corporate Governance in OECD Countries**

### **2.1 Introduction**

This chapter discusses corporate governance, and its main objective is to provide a comprehensive description of what corporate governance is, how it came into being, how it is evolving, the role the OECD has played and is playing, and the mechanisms of corporate governance that are being used for advancing corporate governance in OECD and non-OECD countries. This chapter, in order to accomplish this objective, also gives a short historical overview of the OECD, how it became involved in corporate governance, and also highlights the different corporate governance systems that are in use in the OECD countries with the aim of showing how different characteristics of these systems have an impact on how corporate governance is realised, and on the mechanisms that are used to achieve corporate governance in these systems.

Section 2.2 gives a background of corporate governance development in OECD countries. Section 2.3 provides historical overview of the OECD Section 2.4 focuses on a historical overview of corporate governance reforms within the OECD context. Section 2.5 discusses the main corporate governance systems in OECD countries, namely, the Anglo-American or Shareholding Corporate Governance model and the Continental European or Stakeholding Corporate Governance Model. Section 2.6 discusses the accounting, cultural and legal systems in OECD countries, and Section 2.7 discusses the ownership and debt structures in these countries. Section 2.8 outlines the corporate governance mechanisms provided in OECD corporate governance reports. While Section 2.9 discusses some examples of mechanisms used in some countries to establish corporate governance. A summation of this chapter is provided in Section 2.10.

## **2.2 Corporate governance developments in the OECD countries**

Before the development of the OECD Principles of Governance, a few OECD countries had seen the need for improved governance structure, and this led to the development of national governance codes. According to Krenn (2014), “the U.S. in 1978, and the U.K. in 1992, were the first major economies to issue codes of good governance” (p. 103). Ninety countries around the world had issued codes of good governance by 2008 (Krenn, 2014). International organisations were also promoting good governance; these include the World Bank, the International Monetary Fund and the European Commission. The OECD also promotes the use of good governance (Aguilera & Cuervo-Cazurra, 2009).

In 1978, the U.S. business roundtable was to issue the report, “The role and composition of the board of directors of the large publicly owned corporation”. The purpose of this report was to make American corporations more concerned about improving their corporate governance (Aguilera & Cuervo-Cazurra, 2004).

More recently, Britain was the first of these countries to be ravaged by scandal, with the failure of Maxwell Publishing Group. Britain took the initiative to establish a governance regime to deal with this. The United Kingdom had responded with the Cadbury Report (1992), which sought to lay down strict rules outlining what good governance was expected to entail. In the meantime, several other situations illustrating fraudulent behaviour or poor governance occurred; for example, the cases of Poly Beck, BCCI in the 1990s and, more recently, Marconi in Britain. Germany had its share of distress in the failures of Holzman, Berliner Bank and Babcock. Australia, with its failure of Ansett Airlines and One Tel, and Switzerland, with its failure of Swiss Air, joined the group. Korea had some distress with its banking system, and saw the collapse of chaebol in 1997 (Mallin, 2007).

Several situations took place in the global financial environment that caused serious concerns among nations. The failures of Enron, Worldcom and Tyco in the United States made headlines, and, as in with some earlier failures, caused some concern (Mallin, 2007).



The result was the passage of the Sarbanes-Oxley Act (2002), which was considered some of the most far-reaching legislation of its kind since the Great Depression (Litvak, 2007).

These two governance reports, the Cadbury Report (1992) and the Sarbanes-Oxley Act (2002), reveal their influence on the OECD Principles, a fact that the OECD acknowledges in its publication (OECD, 2004, Principles; Krenn, 2014).

The development of corporate governance has come about because of a variety of scandals in OECD countries. The response of the United Kingdom to scandals in that country was the Cadbury Report (1992). The OECD initial response to the lack of good governance that led to scandals came in 1999 with the OECD Principles of Corporate Governance (OECD, 1999). The U.S. experience with scandals led to the development of a governance system, the Sarbanes-Oxley Act in 2002, and a few years later the OECD followed this with its improvement of its governance principles with the 2004 Principles of Corporate Governance (Kirkpatrick, 2009). Other OECD countries and international organisations have also contributed to the development of this concept.

Since its 1999 Principles, the OECD has considered changes that have been introduced to corporate governance in its member countries and have incorporated most of these changes in its own 2004 Principles of Corporate Governance, thereby taking a forward-looking approach. The OECD recognised that improvements and innovations were required to keep pace with changing global situations.

Changes taking place in financial markets were characterised by a greater interest in newer forms of institutional investors, a relative decline in banking and increased savings for pensions among OECD members (OECD Survey, 2004). These represented a new state of affairs which had to be dealt with in the context of the 2004 OECD Principles. It was also recognised that as new implementation challenges occurred, new ways to maintain high-quality governance would be required. The principles were reviewed in 2002 by the OECD

Steering Group on Corporate Governance and this eventually resulted in the new Principles of Corporate Governance of 2004.

As the United Kingdom and the United States are both very strong influences with respect to the code, and as the OECD is greatly influenced in its 2004 Principles of Corporate Governance, the vast majority of codes developed within the past few years have used the Anglo-American style of good governance (Krenn, 2014). The OECD has insisted that its Principles be the minimum governance principles used, although nations can choose to have more stringent governance principles.

Commenting on the major characteristics of this governance model, Krenn (2014) identifies “best practice provisions regarding board composition, director and auditor independence, treatment of shareholders, executive compensation schemes, transparency in financial reporting and disclosure, among many other topics” (p. 103). Agency theory logic is also stressed as a characteristic of this form of governance system (Krenn, 2014). Despite the differences among various codes, what is consistent is the quality of board governance in organisations, accountability to shareholders and the maximisation of shareholder or stakeholder value (Aguilera & Cuervo-Cazurra, 2004). The OECD’s influence has been great, and has been responsible for many nations accepting many of these principles in their governance codes.

Corporate governance, therefore, became an important measure of a country’s success. It has been identified as the key mechanism for improving the confidence of investors, for increasing competitiveness and promoting economic growth (Todorovic and Todorovic, 2012). In fact, James Wolfensohn (1998) sees corporate governance as being a very important tool for international development, and is quoted as saying that “the governance of the corporation is now as important in the world economy as the government of countries.” (Todorovic & Todorovic, 2012, p. 309).

Therefore, while corporate governance in OECD countries involves following the rules and principles laid down by the OECD, many countries are finding that they have to change their legal framework, rules, regulations and standards, as having the right infrastructure is necessary for creating the right business environment to protect the rights of shareholders, especially minority shareholders, in an organisation (Todorovic & Todorovic, 2012).

### **2.3 Historical overview of the OECD**

The OECD, formed on December 14, 1960, started operations on September 30, 1961, taking up the mantle left by the Organisation for European Economic Co-operation (OEEC). When the OEEC was formed on April 16, 1948, with 18 European nations, it was in response to the Marshall Plan, a plan to rehabilitate the European economies that were badly ravaged through Europe's involvement in the war effort. This organisation was formed on the recommendation of George C. Marshall, U.S. Secretary of State, who maintained that if the American government was to move forward with helping the rehabilitation of European economies, there had to be "some agreement among the countries of Europe as to the requirements of the situation and the part those countries themselves will take" (OECD, 2014, Marshall Speech).

Encountering many difficulties, the countries making up the OEEC saw their organisation as important but recognised that "broader co-operation will make a vital contribution to peaceful and harmonious relations among the people of the world", and that expansion of trade was necessary for "economic development of countries and the improvement of international relations". They agreed to be reconstituted under the banner of the Organisation of Economic Co-operation and Development (OECD, 2014, History). It was with this mission that the OECD was formed, consisting of the 18 members of the OEEC, as well as the United States and Canada.

The OECD provided the means whereby countries could work together on matters of common interest, and on issues that arose in their domestic economies that had the potential

to influence their relations with other nations. As nations engaged in trade and investment, it was expected that they would need common understanding for smooth relations. As the OECD (2014) explains, the organisation “provides a forum in which governments can work together to share experiences and seek solutions to common problems” (OECD, 2014, Our Mission).

In the 1980s and 1990s, many OECD countries were challenged by financial scandals affecting their populace. The OECD recognised this as an area of common concern for its member countries. Governments needed to restore confidence in their economies that were compromised by scandal. They also needed to establish healthy financial environments for sustainable development, and to foster renewed confidence among investors, both domestically and globally.

#### **2.4 Historical overview of corporate governance reforms within the OECD context**

In making reforms to the 1999 Principles of Corporate Governance, the OECD held consultations with OECD and non-OECD members through the work of the OECD Steering Group on Corporate Governance in the period between 2002 and 2003. It also drew heavily on the U.K. and U.S. Sarbanes-Oxley Act. Following this consultation, the OECD introduced some reforms in order to make the Principles more applicable to more groups. As Kirkpatrick (2004) points out, the Principles achieved improvements in three areas, namely, setting up the basis for an effective corporate governance framework, highlighting the importance of ownership, and calling attention to ways of dealing with conflicts of interest (Kirkpatrick, 2004).

With respect to the first of these areas, namely, making the corporate governance framework more explicit, Kirkpatrick notes that in many instances the reforms to be made to OECD countries is small, but the challenges come from actually implementing and enforcing the Principles and inputting the mechanisms to work (Kirkpatrick, 2004).

Therefore, the OECD undertook reform to make the new Principles more workable for member nations, so that they are better able to get the mechanisms to work. Kirkpatrick points out that the new approach to using the Principles is to see the corporate governance framework as promoting transparent and efficient markets, and that there should be clear divisions of responsibility, that it should be seen as having an impact on economic performance, that the governance practices that are introduced “should be consistent with the rule of law, transparent and enforceable” (Kirkpatrick, 2004, p. 3)

Reform was also introduced in the Principles with respect to ownership. Whereas the previous Principles dealt primarily with shareholders, the new Principles took into concern the fact that there can be lack of effective ownership among OECD countries. The new Principles therefore put more attention to voting rights and that more attention should be given to the role of ownership and that the importance of board and remuneration for key executives have been seen as new areas where attention needed to be focused. Another area where reform was forthcoming was in the area of conflict of interests. In recent years, as Kirkpatrick explains, it was noted that conflicts of interest were quite widespread and it was seen as having the potential to cause harm to shareholders, investors and other stakeholders. This led to the OECD looking more closely at the different shareholders, and requiring that there should be more disclosure. This reform was to have a tremendous impact on how owners are involved in corporate governance. Attention was also given to institutional investors, with the requirement that acting in a fiduciary capacity they should disclose their own corporate governance policies, and how they decide on using their voting rights (Kirkpatrick, 2004, p. 3).

After a comprehensive survey on evidence-based findings within member states, and in light of issues showing poor corporate governance, the OECD put forward a revision, its 2004 Principles of Corporate Governance (OECD, 2004, Principles). The OECD undertook its task of promoting better relations among its member countries with its Principles of Corporate Governance. (OECD, 2004, Principles).

The thirty nations that supported and endorsed the 2004 Principles of Corporate Governance were Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States (OECD, 2004, Principles).

But after the 2004 Principles, several countries continue to improve on their codes. The U.K. improved on its governance with a series of changes. In 2005, it completed the Turnbull Report examined how companies managed risks and international control (Abbas & Iqbal, 2012). The U.K. revised its 1998 Combined Code and included Turnbull, Higgs and Smith Reports, for both companies and institutional shareholders (Solomon, 2007). According to Tricker (2012), in 2006, the U.K revised its Combined Code, which made it possible for the chair person to also serve on the remuneration committee and to have the facility of voting by proxy, and two years later revised this code to extend the chair person's role to allow for sitting on the audit committee. In 2008, the Smith report was revised (Avison & Cowton, 2012). In 2010 the U.K. Corporate Governance Code was established and it was revised two years later. This Code included the role of institutional investors (Mallin & Ow-Yong, 2013). The U.K. demonstrated that there were many improvements that needed to be carried out in order to strengthen its governance regime, and it undertook it within the next few years after the revised OECD governance principles.

The World Bank considered the OECD principles important in terms of shareholder rights, actions of stakeholders, transparency and disclosure requirements and responsibilities of boards of directors. It began encouraging corporate governance practices, using the OECD principles, as it gathered information and highlighted the institutional framework about each country's corporate governance practices. The World Bank also carried out regional governance roundtables in Asia, Latin America, Russia, Southeast Europe and Eurasia (Kirkpatrick, 2004). The World Bank published its *White Papers* outlining the corporate

governance for each of these regions (Kirkpatrick, 2004). The World Bank also used this information to develop national corporate governance regulations and practices in each country by improving work plans, academic conferences and the amount of practical support provided to various countries.

The Financial Stability Forum endorsed the OECD Principles as one of the key standards necessary for financial stability, and the World Bank's Review of Observance of Standards and Codes also endorsed the Principles (Kirkpatrick, 2004).

The OECD demonstrates the importance of nations working together with the same overall goals of improving their governance structures and mechanisms, learning from each other, and cooperating on common issues. The 2004 OECD Principles of Corporate Governance are widely used and highly respected as principles that work and that provide the basis for good economic performance and global financial stability. The OECD points to the Article of its Convention, which authorises it to achieve the highest sustainable growth possible and to promote financial stability, economic expansion in world economies and multi-lateral trade based on international agreements (OECD, 2014, Principles of Corporate Governance). These are the goals that the OECD aspires to with its 2004 Principles of Corporate Governance. The OECD also has as its goal to promote democracy and employment, raise standards of living and help other countries in economic development (OECD, 2004, Principles).

## **2.5 The main corporate governance systems in the OECD countries**

With the United Kingdom and the United States being a very strong influence with respect to the corporate governance codes, and with the OECD being greatly influenced in its 2004 Principles of Corporate Governance by the United Kingdom and the United States, the vast majority of codes that have developed within the past few years have used the Anglo-American governance style of good governance (Krenn, 2014). The OECD has insisted

that its Principles be the minimum governance principles to be used, although nations could have more stringent governance principles.

However, while some OECD countries were finding it easier to follow the rules and principles laid down in the 2004 Principles of Corporate Governance, other countries were finding that they had to consider changing their rules, regulations and standards, as having the right infrastructure was necessary for creating the right business environment that would protect the rights of the shareholders (Todorovic & Todorovic, 2012).

What became apparent was that the OECD countries were different in terms of their legal framework, accounting systems, and culture. Nevertheless, they realised the importance of finding ways of promoting corporate governance. There were really two main corporate governance systems or models among OECD countries, which are commonplace and that oppose each other: the shareholding model and the stakeholder model (Sternberg, 1997; Weimer & Pape, 1999; Vinten, 2001; Letza, Sun & Kirkbride, 2004). These two models are based on shareholding and stakeholding theories. For example, the U.K., U.S., Canada, Ireland, and Australia were based on the shareholding model, while France, Germany, Spain, Italy and Japan followed the stakeholding model.

In differentiating between these two models, Letza et al. (2004) suggest four views of corporate governance that shed light on the differences between stakeholding and shareholding perspectives. By examining the various views of corporate governance, Letza et al. (2004) highlight the finance, or principal-agent, model, which adheres very closely to the shareholder model, and the stakeholder model. The finance or principal-agent model deals with “a universal agency problem and how to adopt appropriate incentive systems and/or mechanism of takeover to solve this problem” (Letza et al., 2004, p. 244). According to the 2004 Principles of Governance, there must be equitable treatment of all shareholders, with equal consideration to minority and foreign shareholders, and for the opportunity of all shareholders to have the opportunity have violation of their rights redressed (2004



Principles of Governance). This shareholder or finance model sees the directors as holding the positions of agents to the owners of the corporation. An adversarial relationship is assumed, for while the managers are seen as maximising the interests of their owners, they are also seen as having the agency-principal problem to contend with (Letza et al., 2004).

On the other hand, Letza et al. (2004) identifies the stakeholder model, which focuses maximising the wealth of stakeholders, and unlike the shareholder model, does not involve the stakeholders in governance (Letza et al., 2004, p. 246). The stakeholder model of corporate governance takes the position that the company includes more than the shareholders, and sees the role of directors and managers as being responsible for looking after the interests of all members of the corporation, including not only shareholders, but debt holders, bankers and others (Letza et al., 2004). However, the classification of stakeholders may be broken down even more, with direct stakeholders being those with whom the corporation has formal and contractual agreements, such as creditors, employees, customers and suppliers, and with indirect stakeholders including government, local communities, and environmental and citizen groups (Gibson, 2000). In the stakeholder model, managers are assumed to be trustworthy and on this basis ought to be empowered to serve as worthy stewards of the corporation (Letza et al., 2004). The stakeholder approach is therefore represented by stewardship theory.

In criticising the stakeholder model, Sternberg (1997) explains that the concept of the stakeholder has grown dramatically. While ‘stakeholder’ was previously used as a term to describe one who had a stake in an organisation, it has undergone a “radical shift, from those who affect the organisation, to those who are affected by it” (p. 3). Therefore, there has been the shift from the stakeholder model, with the promotion of the shareholder model as being the workable model (Sternberg, 1997). But Vinten (2001) criticises Sternberg’s (1997) “pie-in-the sky universalism” in showing the shareholder model as the universal model (p. 39). According to Vinten (2001), besides having responsibility to its stakeholders, an organisation must recognise its “responsibilities to those indirectly

affected by its activities and decisions, past, present and future, and including the natural world, with a measured balance achieved” (p. 39).

According to the OECD Principles of Corporate Governance, “The corporate governance framework should recognise the rights of stakeholders established by law or through mutual agreements and encourage active co-operation between corporations and stakeholders in creating wealth, jobs, and the sustainability of financially sound enterprises” (2004, p. 21).

### **2.5.1 Continental European or stakeholding corporate governance model - Characteristics**

The stakeholding perspective was a model used since the 19<sup>th</sup> century, and which can be found in some European countries in recent times. A characteristic of the stakeholder position is the emphasis on maximisation of stakeholder interest, which includes employees and other stakeholders, where investment is carried out on a long-term basis, as opposed the short-termism that characterises investment in the United States and the U.K. (Aguilera & Jackson, 2010). In fact, according to Aguilera and Jackson (2010), the stakeholder approach is seen at work in the case of Germany and in Japan, where it is characterised by “patient capital” or where capital is invested for the long term. This is to be contrasted with the shareholder approach, where capital is invested on a short term basis, as seen in the United States and the U.K. (Aguilera & Jackson, 2010).

Another characteristic of the European, or Continental, stakeholding model is the “team production” model as an alternative to the principal-agent approach, which suggests that the corporation consists of many stakeholders who jointly give control over their resources to a board of directors (Aguilera & Jackson, 2010, p. 553). The stakeholding model also gives greater voice of stakeholders. For example, as noted, “control based on ownership cannot act as a substitute for cooperation or (for) employee voice in decisions” (Aguilera & Jackson, 2010, p. 489). In stakeholding models, unlike in the Anglo-American

shareholder model, where there is a one-tier board, there are supervisory and management boards, as in the case of Germany (Schilling, 2001). As Schilling (2001) points out, in the German two-tiered board structure, the supervisory board functions for making appointments and for removing members of the management board. The shareholders in the European system are for the most part passive, hold ineffective annual meetings, and with most stocks owned by other companies, become part of an interlocking ownership system (Schilling, 2001). There is little transparency in the selection process of supervisory boards. Many of these characteristics are missing in the Anglo-American system.

### **2.5.2 Anglo-American or shareholding corporate governance model - Characteristics**

The Anglo-American model takes the shareholding perspective, or the belief that directors of companies have as their fiduciary responsibility the maximisation of shareholder value. The general thinking is that the major shareholders are to be seen as the privileged group in a company, because they are the ones that take the greatest risks, and so must be seen as the major owners of the companies (Gamble & Kelly, 2001). The rationale underlying the shareholder model of corporate governance is that in the event of organisation failure, creditors and the Internal Revenue have the first claim against the assets of the company. It is only after these claims against the fixed assets of the corporation are made that the shareholders can make a claim against the returns of the corporation (Gamble & Kelly, 2001). It is on this basis that it is argued that basing corporate governance on shareholder values makes sense, since the operation of the corporation is seen as serving the interests of the shareholders.

In the Anglo-American model, which is represented largely by the U.K., the United States, Canada, Ireland and Australia, the characteristics in place include managerial directors who operate the organisation on behalf of the shareholders, a law that “strongly protects shareholders”, security markets where shareholders can buy and sell shares, and a one-tier

board of directors, consisting of “executive and supervisory responsibilities” (Weimer & Pape, 1999, p. 154). An important characteristic of the Anglo-American, or shareholding, model, is the idea that these countries have limited liability, which, according to Gamble and Kelly (2001), is thought to provide security to smaller investors and to identify the organisation as a legal entity.

Another characteristic of the Anglo-American model is the more important role played by stock markets, in comparison to other governance models. In the Anglo-American model, stock markets are used “more intensively” to raise capital for domestic companies (Weimer & Paper, 1999, p. 155). Besides, institutions own equity on behalf of a variety of shareholders, including present and future retirees and purchasers of mutual funds, thereby characterising this aspect of the Anglo-American model as “fiduciary capitalism” (Hawley & Williams, 1997, p. 206). But perhaps the best known characteristic of the Anglo-American corporate governance system model is “an active external market for corporate control, often referred to as the takeover market” (Weimer & Paper, 1999, p. 155). In other words, if a company does not achieve maximisation of corporate yield, other firms could see an opportunity for take-over. Because of the Anglo-American model’s concern with corporate control, another characteristic of the Anglo-American system is the short-term nature of investments (Gamble & Kelly, 2001). But, as noted, the market for corporate control underwent some change with the installation of anti-take-over measures by corporations at the end of the 1980s (Hawley & Williams, 997). This gave rise to other characteristics, including giving owners more influence on boards and providing initiatives for agencies like the Securities and Exchange Commission and the Department of Labour to take aggressive action as owners or to allow owners to take action against companies that are not aggressive (Hawley & Williams, 1997).

## **2.6 Accounting, legal, and cultural systems in the OECD countries**

The origins of the accounting systems in use today can be traced back to several centuries B.C. from the Roman period, through the Dark Ages and into modern times. The Industrial Revolution had a tremendous impact on business and commercial activities, and greatly influenced the development of modern accounting. However, with the rise in globalisation, businesses are realising the importance of reaching out to foreign companies, and are encountering differences based on economic, educational, sociocultural, legal and political factors. As Radebaugh, Gray and Black (2006) point out, the nature of the accounting systems used by different nations depend to a large extent on the influence of these factors, for “such systems will, in turn, tend to reinforce established patterns of behaviour” (p. 15).

### **2.6.1 Accounting systems**

An understanding of accounting systems involves examining the modern corporation, with its separation of ownership from control, and the establishment of limited liability, where the public owns shares in the corporation (Hawley & Williams, 1997; Gamble & Kelly, 2001). Accounting systems in OECD countries are based on professional management, security markets, and countries listing on foreign securities markets. The accounting systems in OECD countries are based on the need for creditors and investors to have accountability and disclosure, but they differ based on who these corporations believe they are accountable to, and to whom they need to make disclosures (Radebaugh et al., 2006). Shareholder protection is an important consideration, for large and small, as well as domestic and foreign, shareholders. (La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2002). Disclosure was important so that shareholders could have access to information about the corporation on a regular basis (Radebaugh et al., 2006).

In OECD countries, there are several different kinds of accounting systems, namely, the Anglo-American system, represented by the United States, the U.K. and Australia; the Nordic accounting system, represented by the Netherlands and Sweden; the Germanic

accounting system, represented by Germany and Switzerland; the accounting systems in Latin countries, represented by France, Italy and Spain; and the accounting systems in Asian countries, represented by Japan (Radebaugh et al., 2006). Weimer and Pape (1999) identify four types of corporate systems, namely, Anglo-Saxon, Germanic, Latin and Japanese. While these systems all serve a basic function of reporting on the operations of various corporations, they differ in that they are influenced by various factors that characterise their societies.

Characteristics of the Anglo-American accounting system include emphasis on the importance of information to meet the needs of investors, transparency, and a similar language and legal system, adapted from the U.K. accounting system (Radebaugh et al., 2006). Among the countries that use this accounting system, accounting standards have been established through the establishment of accounting boards; for example, the Financial Accounting Standards Board in the United States, the International Financial Reporting Standards in the U.K. and the Australian Accounting Standards Board in Australia (Radebaugh et al., 2006). But even so, as Radebaugh et al. (2006) point out, there are differences among countries using the same accounting system. For example, though using the same Anglo-American accounting system, the United States accounting caters to large corporations, and is more closely influenced by the Securities and Exchange Commission (SEC) than the U.K. while in Australia, the Public Sector accounting Standards is replaced by the Urgent Issues Group (Radebaugh et al., 2006).

The Nordic accounting system is similar to the Anglo-American system in that emphasis is placed on information for investors, but in the Nordic accounting system, information must also voluntarily be provided to other stakeholders. Emphasis is also placed on social reporting, with disclosure of employment and personnel policies. The Nordic accounting system puts special significance on taxation; this is not the case in the Anglo-American system. The Nordic accounting system is less transparent than the Anglo-American system,

but more so than the Germanic and Latin accounting systems. Some small differences remain among countries using the Nordic accounting system (Radebaugh et al., 2006).

The Germanic accounting system differs markedly from the Anglo-American system in that company law and taxation are the most important considerations. Germanic accounting tends to be relatively conservative and secretive, which contrasts largely with the Anglo-American accounting system (Radebaugh et al., 2006). Switzerland tends to have more secrecy built into its accounting system than Germany, although both are based on the Germanic accounting system (Radebaugh et al., 2006).

The Latin accounting system is similar to the Germanic system in that it gives preference to information for creditors and tax authorities in Germany. Company law influences accounting practices (Radebaugh et al., 2006). In France, for example, the accounting profession is small and does not hold the status it does in Anglo-American countries. As in the Germanic system, the stock market does not influence the accounting profession as it does in the Anglo-American system. Like the Germanic accounting system, the Latin accounting system is based on corporations receiving “finance from banks, the government, and family interests (Radebaugh et al., 2006).

Asian accounting practice has a tradition distinct from Anglo-American, Nordic, Germanic and Latin accounting, as a result of Asia having for the most part a colonial history. However, Japan’s accounting practice is greatly influenced by Germany and the United States (Radebaugh, 2006)

In the global economic system, investors pay attention to the different accounting systems used, as this has ramifications for their investment. Accounting practices in Anglo-American accounting differ from those in continental European accounting, and in Asia, Latin America and other countries. Financial Accounting Standards Boards (FASB) are commonly used in Anglo-American countries, such as the U.K., the United States and former U.K. colonies (Radebaugh et al., 2006). These standards are similar and provide

investors with a standard way of treating different practices. Accounting practices in the different accounting systems differ among themselves and differ from those in the Anglo-American accounting system. Many developing countries also face difficulties obtaining investment because their accounting practices are not transparent or their accounting systems are not completely established. Many countries do not have the means of developing their own standards. The creation of an international standard, the International Financial Reporting System (IFRS), provides common practices that many developing countries can understand and apply (Radebaugh et al., 2006).

### **2.6.2 Legal systems**

Understanding the legal systems that operate within OECD countries is important to appreciate the level of protection afforded to investors. This information also determines why investors are more willing to invest in some countries than others (La Porta et al., 2002). Legal system also determines the effectiveness of its corporate governance (La Porta et al., 2002). The importance of the legal system and the protection it affords investors was clearly demonstrated with the recent failures of the corporate system in the U.K. and the United States, and the legal responses of these countries to these failures (Daniel, Cieslewicz, and Pourjalali, 2012).

Among the countries that make up the global economy, there are two different legal systems, namely, the Anglo-Saxon common law system and the continental civil law system. The Anglo-Saxon, or Anglo-American, common law system is considered the superior legal system for accommodating corporate governance (La Porta et al., 2002).

Common law has been described as uncodified law, based on English law that emerged after the Norman Conquest in 1066 (University of California, Berkeley, p. 1). It is law that was based on courts of law and courts of equity, where case law and precedent were used. These principles still dominate the common law system.



The common law system is most often found in Anglo-American countries (Aguilera & Cuervo-Cazurra, 2004; La Porta et al., 2002). This system is based on several characteristics that are considered important for protecting investors' interests. According to Zattoni and Cuomo (2008), common law is based on equity finance, strong legal protection of shareholders, strong regulations in the courts for dealing with bankruptcy, dispersed ownership, and shareholders being provided with disclosure on what is happening in the corporation. The reason that the common law system is seen as superior to the civil law legal system is that the former is an outsider system, meaning that it is based on rules and operates on an arm's-length basis (Zattoni & Cuomo, 2008). The common law legal system is based on laws that "are protective of outside investors and well enforced", and so "investors are willing to finance firms, and financial markets are both broader and more valuable" (La Porta et al., 2002, p. 1147). It is mostly in countries whose legal systems are based on the common law legal tradition that corporate governance is promoted through corporate governance codes (Aguilera & Cuervo-Cazurra, 2004). The common law system is seen at work in the U.K., U.S., Canada, Ireland and Australia.

Civil law is generally associated with European countries, and was a system of law that was codified and based on Roman law. This system was practiced throughout Europe, where "the role of local custom as a source of law became increasingly important" (University of California, Berkeley, p. 2). In the 18<sup>th</sup> century, many European countries pulled together the various laws existing within their traditions and codified them. For example, the codification of France's laws became known as France's Civil Code, or the Napoleonic Code (University of California, Berkeley, p. 2).

Civil law was therefore classified as an "insider model" and had unique characteristics, such as heavy bank financing, little legal protection for minority shareholders, concentrated ownership, weak disclosure, stakeholders playing a central role in owning and managing corporations, and corporations having very little freedom to carry out mergers or acquisitions (Djankov, Lopez, La Porta & Shleifer, 2008). As Aguilera and Cuervo-

Cazurra (2008) point out, the difference between these two legal systems in terms of corporate governance is that while civil law uses statutes and codes to make legal rulings, common law uses precedents and case law to seek out equity. Besides, as Zattoni and Cuomo (2008) explain, civil law rulings tend to be lenient and ambiguous, and not designed to improve governance. It is on this basis that La Porta et al. (2002) point out that the common law tradition is superior to the civil law tradition, which does not protect investors and where financial markets are not well developed. This is the legal system that is used in France, Germany, Spain, Italy and Japan.

### **2.6.3 Cultural practices**

Culture plays an important part in the business operations of a company and in its corporate governance. Organisations and their management are heavily dependent on the cultural practices that take place in a country. This explains why the concept of Western culture and its universal modern management methods are no longer considered a reality. As Hofstede (1984) points out, this is because although France, Germany, Sweden and the U.K. are all seen as “Western”, their types of management differ because of cultural factors (p. 81).

The rationale for taking this position is that it is the specific cultural practices and values that determine the goals of a country and the economic and technical resources that would be used to achieve the goals (Hofstede, 1984, p. 81). Culture is based on how people behave in their particular settings. This being the case, it can be clearly seen that the activities that take place in different countries must therefore be determined by the culture of the country.

Some of the cultural values that influence how people behave, and which seriously impact how management works in different countries, are individualism versus collectivism, large versus small power distance, strong versus weak uncertainty avoidance, and masculinity versus femininity (Hofstede, 1984). Individualism shows a preference of individuals for taking care of themselves and their families, while collectivism shows a preference “for a

tightly knit social framework in which individuals can expect their relatives, clan, or other in-group to look after them in exchange for unquestioning loyalty” (Hofstede, 1984, p. 83). The Anglo-American model is best described as holding on to individualism, which is found to be characteristic in the U.K., U.S., Canada, Australia and Ireland, while the collectivism is more marked in the Continental model, particularly in France, Germany, Spain, Italy and Japan.

Power distance refers to how people accept the unequal distribution of power in their society, while uncertainty avoidance describes “the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity” (Hofstede, 1984, p. 83). Power distance is more marked in the Continental model, and is seen in France, Germany, Spain, Italy and Japan. While masculinity describes a preference for “achievement, heroism, assertiveness, and material success,” femininity describes a preference for “relationships, modesty, caring for the weak, and the quality of life” (Hofstede, 1984, p. 84). Masculinity is a cultural value that is more marked in the Anglo-American than in the Continental model, and therefore has implications for corporate governance, and for risk-taking in corporate performance more so in U.K., U.S., Canada, Australia and Ireland than in France, Germany, Spain, Italy and Japan.

Hofstede and Bond (1988) demonstrate the importance of cultural practices for economic growth by illustrating how Confucian values have greatly influenced the economic growth of Asian countries. The authors point to the relative importance of persistence, ordering of relationships by status, thrift and having a sense of shame as values making up ‘Confucian Dynamism.’ Other values of secondary importance in Asian society are respect for tradition, saving face, and personal steadiness and stability (Hofstede & Bond, 1988, p. 17). These are cultural values that are seen as important in Japan and that therefore play a role in the behaviour of firms in this country.

**Table 1: Accounting, Cultural and Legal Systems in OECD Countries**

<b>Accounting for Anglo American</b>	<b>Accounting for Continental</b>
Shareholding	Stakeholding
Principal- agent approach	Team production model
Short-term basis of investment	Long term basis of investment
One-tier board system	Supervisory and management boards
Owners have more influence on board	Shareholder pressure on board
Protects shareholder, including minority	Protects stakeholders- little protection for shareholders
Widely diverse ownership	Interlocking ownership
Transparency in selecting board members	Little transparency in selecting board members
Use stock market to raise capital	Raise capital from family, banks and government
<b>Culture for Anglo American</b>	<b>Culture for Continental</b>
Individualism	Collectivism
Small power distance	Large power distance
Weak uncertainty avoidance	Strong uncertainty avoidance
Masculinity	Femininity
More risk-taking	Less risk-taking
<b>Legal System for Anglo American</b>	<b>Legal System for Continental</b>
Common Law	Civil Law
Outsider System	Insider System
Diverse Ownership	Concentrated Ownership
Use precedents and case law to achieve equity	Use codes and statutes
Use of corporate governance codes	Little use of corporate governance codes
Investors finance firms	Finance by family and banks
Strong legal protection for shareholders	Weak protection for shareholders
Wide disclosure	Weak disclosure

## **2.7 Ownership and debt structures in the OECD countries**

Examining ownership and debt structures in OECD countries is important in showing the differences between shareholding and stake-holding governance structures and between the various the countries that are identified as Anglo American, namely, U.K., U.S., Canada, Australia and Ireland or with shareholding governance structures, and those that are identified as Continental, namely, France, Germany, Spain, Italy and Japan, with stakeholding governance structures.

### **2.7.1 Ownership structures – Characteristics**

The ownership structures among OECD countries using the Anglo-American corporate governance model are different from those using the Continental European corporate

governance model. In differentiating between the Anglo-American and Continental European governance models, one must pay attention as to who the owners are, how much power these owners possess, and more specifically, to how the shareholders, particularly minority shareholders, are protected from majority shareholders. A common idea is that where there is poor shareholder protection, ownership tends to be rather concentrated, with minority shareholder rights not protected. Besides, the legal tradition of the countries play a major role in determining the ownership structures (La Porta, Lopez-de-Silanes, & Shleifer, 1999). These authors contend that “the quality of investor protection, as measured either by the shareholder rights score or by legal origin, is a robust determinant of the incidence of widely held firms” (La Porta et al., 1999, p. 511).

Early work on ownership and control of firms was carried out by Berle and Means in 1932, and La Porta et al. (1999) set out to look at an updated picture of this topic. Their findings reveal different types of ownership and control in the world’s largest firms. The results of La Porta et al.’s (1999) study reveal that countries outside the United States that are based on civil law generally have poor shareholder protection, as the largest firms also have controlling shareholders. These controlling shareholders can be the state, a founding family or the descendants of the founder (La Porta et al., 1999). This control may extend beyond cash flow rights, and may be held through “pyramid structures” resulting from the owners being the managers of the firms (La Porta et al., 1999).

In their study of global firms, La Porta et al. (1999) noted that “[u]sing the 20% definition of control”, 36% of firms were widely held, 30% were family-owned, 18% were state-owned, and 15% were distributed among miscellaneous types of ownership (491). This finding contradicts Berle and Means’ contention that corporations are the dominant ownership structure (La Porta et al., 1999). It was shown that all 20 firms from the U.K, 18 out of the 20 from Japan, and 16 out of the 20 from the United States fell into the category of widely held firms, but there were some countries, such as Argentina, Greece, Austria, Hong Kong, Portugal, Israel and Belgium, with no widely held firms (La Porta et

al., 1999). It was further shown that the state owned some of the very large companies in some countries, with 70% of the largest traded firms in Austria, 45% in Singapore, and 40% in Italy and in Israel being “state-owned” (La Porta et al., 1999, p.496). The conclusion was that family-controlled firms were the dominant form of ownership structure, not corporations or financial institutions (La Porta et al., 1999). Therefore, family control is very common. However, countries with common law legal traditions were found to have mostly widely held ownership, and provided greater protection for shareholders (La Porta et al., 1999).

### **2.7.2 Debt structures - Characteristics**

It was shown that the dominant form of ownership in the world’s largest firms is family ownership. In these firms, ownership of equity is by families, with banks playing a very minor role in financing. It was also shown that only 5% of large banks and insurance companies owned equity in most countries. However, it was shown that in Belgium, Portugal and Sweden, the largest firms were owned by banks. In other words, banks owned the equity in these firms (La Porta et al., 1999).

La Porta et al. (1999) distinguish between bank-centred financial systems and market-centred systems (p. 508). In bank-centred systems, there could be great reliance on debt finance, and this makes it unnecessary for large shareholders to have to sell their shares so that firms can raise funds. Examples of these are found in countries with the Continental system in place. In these situations, there is also a greater likelihood that in countries with poor investor protection there might also be greater reliance on debt rather than equity financing (La Porta et al., 1999, p. 508).

On the other hand, market-centred systems, which are also the countries in which there is widely held ownership and common law legal traditions, are more likely to have better developed debt markets. Examples of these are in countries with the Anglo-American system in place (La Porta et al., 1999). Unlike the ownership concentration in countries

with civil law legal systems, and where there is poor shareholder protection, in the United States and other common law countries, where there is more diverse ownership, there is more likely to be good shareholder protection, making these countries good for investment.

**Table 2: Ownership and Debt Structures**

<b>Anglo American</b>	<b>Continental</b>
Shareholding	Stakeholding
Strong Investor Protection	Poor investor protection
Few controlling shareholders	Strong controlling shareholders
Owners – Protection for shareholders	Little or no protection
Owners and managers separate	Pyramid structures, where owners are managers
Diverse ownership of shares	Largest firms family-owned
Widely traded shares	Few sales of shares
Great for Investors	Not very good for investors

## **2.8 Corporate governance mechanisms contained in the OECD corporate governance reports**

In examining the corporate governance mechanisms that are presented in the governance reports, one must consider what constitutes corporate governance. According to the 2004 OECD Principles of Corporate Governance, “there is no single model of good corporate governance”, but based on “work carried out in both OECD and non-OECD countries and within the Organisation . . . some common elements that underlie good corporate governance” have been identified (OECD, 2004). The Principles are non-binding for a purpose, and that is because of the vast differences among countries. Therefore, the Principles serve as a “reference point” that countries should use in order to develop their own good corporate governance regimes. In addition, the Principles are evolutionary and thus will continue to evolve to suit the needs of users. While the Principles are adopted by countries, corporations have also put them to use.

As pointed out in the 2004 OECD Principles,

“To remain competitive in a changing world, corporations must innovate and adapt their corporate governance practice so that they can meet new demands and grasp

new opportunities. Similarly, governments have an important responsibility for shaping an effective regulatory framework that provides for sufficient flexibility to allow markets to function effectively and to respond to expectations of shareholders and other stakeholder. It is up to governments and market participants to decide how to apply these Principles in developing their own frameworks for corporate governance, taking into account the costs and benefits of regulation” (OECD, 2004).

Therefore, the OECD Principles of Corporate Governance provide a variety of mechanisms that can be used by countries and corporations in crafting corporate governance regimes that would enable them to benefit from the Principles. It is also important to point out that while corporations are stressed, the Principles are intended for all organisations.

The differences between the countries that are based on the Anglo-American system would differ from those based on the Continental system, because of accounting, cultural and legal systems that already have certain structures in place.

### **2.8.1 Ensuring the basis for an effective corporate governance framework**

First, there must be a strong basis on which to establish an effective corporate governance framework. This framework must stress the clear division of responsibilities between supervisory, regulatory and enforcement authorities, ensuring that the corporate governance framework also promotes transparent and efficient markets, all within the framework of the law. Also, there should be legal and regulatory requirements in place that are enforceable and transparent. The supervisory, regulatory and enforcement authorities should have the power to carry out their duties, and the timeliness of their rulings must also be stressed. These mechanisms are widely used in many OECD countries (OECD Survey, 2004, pp. 44-51). With the appropriate divisions of responsibilities clearly outlined, with the proper mechanisms in place for dispersing these responsibilities, and with clear



timelines in place to execute these responsibilities, an efficient mechanism for carrying out the duties of providing good governance can be established, provided that there are guidelines for ensuring transparency and efficiency in the markets, and all is done within the jurisdiction of the law (OECD, 2004, p. 17).

A look at the Anglo-American system as seen in the U.K., U.S., Canada, Australia and Ireland reveals that there are the accounting, cultural and legal systems have allowed for greater transparency in operations. Besides, the legal system allows for protection of shareholders in the Anglo-American system in a way that has not been provided for in countries with the Continental system.

### **2.8.2 Rights of shareholders**

Next, the rights of shareholders and the key ownership functions must be clearly outlined and delineated within a governance framework. The mechanism that should be used for this should clearly lay out the broad rights of shareholders, namely, their rights of ownership; their right to participate in decisions pertaining to corporate changes; their right to participate in, be informed of and vote on general shareholder matters; the rights of certain shareholders to a greater degree of control based on their disproportionate investment in the organisation; provisions to allow markets for corporate power to function efficiently and transparently; the rights of all shareholders, including constitutional investors, to be facilitated in exercising ownership; and the right of all shareholders to be able to consult with each other, except in cases where exercise of such rights can constitute abuse (OECD, 2004, p. 19).

With respect to the rights of shareholders, the 2004 Principles provide for mechanisms which stipulate that shareholders should have their ownership rights secured through registration, should have the right to transfer or convey their share, should participate and vote in shareholders' meetings, and should have the right to elect and remove members of

the board. This mechanism also provides that shareholders should share in the profits of the corporation (OECD, 2004, p. 19).

Mechanisms must be created to entitle shareholders to terminate a member or members of the board, if, in their judgment, this action will serve to maintain good governance in the corporation. Shareholders should be properly informed of changes taking place in the corporation and must be given the amendments to statutes or articles of information authorisation granted by other shareholders as to proposed changes, as well as extraordinary transactions that the corporation may have undertaken. This should include all assets that must be transferred. Shareholders should participate fully in matters pertaining to the shareholders interest, and should have the appropriate roles to guide their participation, including voting. They should be included in decision-making processes that bring about changes that affect ownership of shares in the corporation, and should have sufficient and timely information about meetings. Mechanisms should be in place to ensure that shareholders have access to the board, and can ask questions pertaining to the operation of the organisation, including matters related to audit. Shareholders should also have the opportunity, using the equity aspect, to approve remuneration for board members and key executives. Finally, shareholders should be able to vote in person or in absentia, and either vote should have the same effect (OECD, 2004, p. 19).

### **2.8.3 The equitable treatment of shareholders**

Mechanisms to secure equitable treatment of shareholders must ensure that all shareholders with the same kinds or series of shares are treated equally. The mechanisms should ensure that all shareholders of the same series also have the same rights, and that any changes affecting shareholder rights are voted on by other shareholders. Minority shareholders must be protected, and impediments to cross-border voting should be eliminated. Any official who engages in insider trading and abusive self-dealing should be prosecuted. All board members and key executives must disclose if they have any material interest in any

transaction that the organisation may be engaging in, be that material interest direct, indirect or on behalf of third parties (OECD, 2004, p. 20). These mechanisms are based on equality, equity and fairness. Mechanisms are in place for shareholders' protection. For example, in Belgium, France and Italy, there are corporate networks, voting agreements and hierarchical groups, where emphasis is placed on voting power, and not on ownership. These types of mechanisms "shield the controlling group from hostile takeovers" but expose the system to "abuse by minority shareholders" (OECD Survey, 2004, p. 31).

#### **2.8.4 The role of stakeholders in corporate governance**

Mechanisms should be provided that ensure that the rights of stakeholders are established by law and/or mutually agreed upon, and that there should be "performance-enhancing mechanisms" that permit employee participation in governance. These mechanisms should enable these employees to have relevant, adequate and timely information on a regular basis. Mechanisms should enable employees and other stakeholders to have a way of communicating with board members on practices that are both legal and illegal. The corporate governance structure should also be complemented with an "effective, efficient insolvency framework and by effective enforcement of creditor rights" (OECD, 2004, p. 20). In other words, creditor rights must also be recognised through a mechanism designed for that purpose.

#### **2.8.5 Disclosure and transparency**

The 2004 Principles of Corporate Governance pertain to both financial and non-financial matters. The mechanisms that relate to disclosure and transparency cover many areas. There are also several mechanisms in place that address these issues. One mechanism is that of auditor rotation, where auditors are restricted in the non-audit services they carry out in order to reduce the incentives. This allows for the independence of auditors in implementing auditing standards. Analysts and rating agencies that report financial information are also seen as having conflicts of interest in reporting information. This

needs greater disclosure from providing information. Mechanisms are in place for them to disclose. Non-financial information, such as HR policies, that may be important to stakeholders are also considered as needing more disclosure.

Mechanisms also ensure disclosure and transparency in the governance system as specified in the 2004 Principles of Corporate Governance with respect to financial and all other operations. Disclosure must be made with respect to objectives, foreseeable risks, financial operations of the organisation and corporate structure and policies used to implement these policies. Also, major share ownership and voting rights, remuneration of board members and key executives, related party transactions, and issues related to employees and other stakeholders must be fully disclosed (OECD Survey, 2004, p. 51).

Transparency should be stressed in the way that information is prepared and disseminated with an annual audit condition, and by auditors that are accountable to shareholders and obligated to use professional care in reporting to the company. Information must be disseminated in a careful, timely and cost-effective manner to all stakeholders, and the corporate governance structure should provide for a complementary system supported by reports and analyses of reports, and by analysts, brokers and agencies, in a way that can provide helpful information to others.

#### **2.8.6 Responsibilities of the board**

Corporations must have a mechanism in place that requires a board to exercise diligence and care and to act in the interests of shareholders as well as the company. Where different shareholders have different rights, the board is required to treat all shareholders fairly and to use high ethical standards in all areas, especially when dealing with the interests of stakeholders. The board is expected to set the strategy in place, plan, review, set performance objectives in place and monitor the implementation of plans. In short, the board is responsible for monitoring the effectiveness of the company's performance and can replace key executives (OECD, 2004, p. 24). Board members are also expected to

ensure that there are no conflicts of interests and abuses related to transactions, and must monitor this carefully. Board members must be able to use good judgement and commit themselves wholly to their responsibilities. They are also expected to have full access to all the “accurate, relevant, and timely information” of the organisation (OECD, 2004, p. 25).

Several mechanisms are at work to spell out board responsibilities. Some of these include board audit committees, with some countries introducing public oversight of the setting of accounting and auditing standards. Boards are responsible for approving disclosure, and board members are independent of management. Boards are in particular required to handle matters dealing with board and key executives’ remuneration. Other mechanisms include board independence, employee representation on the board, and board committees for nominating and electing boards (OECD Factbook, 2014).

## **2.9 Examples of mechanisms used in some countries**

A look at the codes that many countries use reveals the diversity and multiplicity of mechanisms that are in use in OECD countries to bring about corporate governance. Australia, for example, has as its codes the Stock Exchange Corporate Governance Council, Principles of Good Corporate Governance and Best Practice Recommendations (2003) and the IFSA Corporate Governance (2002). The instruments or mechanisms mentioned are ‘comply or explain’; principle balance of authority within the board, disclosure of division of responsibility, professional competence of members and the ability to exercise independent judgment; separation of chair and CEO, establishment of board committees with majority independent directors, ethics oversight, greater shareholder involvement, transparent compensation tied to corporate and individual performance, and protection for whistle blowers (OECD Survey, 2004, p. 44).

Canada has different codes and instruments. For example, there are disclosure requirements and guidelines, which included the Toronto Stock Exchange, March 2002; and General

Acceptance of the Saucier Report, except independent board leader as a listing requirement, disclosure of governance directives, and shareholder approval of option plans. Other instruments include management supervision by the board of directors, boards of directors composed of and chaired by outside (non-executive) directors, and establishment of audit committees, consisting only of outside directors (OECD Survey 2004, p. 45).

Finland has only codes, which include the Chamber of Commerce/Confederation of Finnish Industry and Employers Code and Ministry of Trade and Industry Guidelines. Germany' codes include the Berlin Initiative Code and Germany Panel rules. The instruments or mechanisms used include balance of power within and between management and supervisory boards, compensation tied to corporate performance and seniority, establishment of supervisory board committees, and facilitation of shareholder voting (OECD Survey, 2004, p. 46). Germany also makes use of company and group law considering shareholder protection, disclosure and transparency and board composition, responsibilities and remuneration.

In Korea, the code is Code of Best Practice for Corporate Governance, 2003. The instruments or mechanisms used include improvement of shareholder participation, information and vote at AGM, at least 1/4 outside directors, cumulative voting to ensure representation of minority shareholders, establishment of committees, audit committee chaired and consisting of 2/3 outside directors, and disclosure of all information material to shareholders' decisions. In 2003, Korea introduced an update consisting of the new mechanisms. These new mechanisms are 'comply or explain'; listing; different requirements for large and small firms; outside directors independent from controlling families; minimum number of such directors; fair disclosure and greater role for outside directors in audit; and instructions to exercise voting rights and disclose (OECD Survey, 2004, p. 47).

Thomsen and Conyon (2012) point out that there are many governance mechanisms, and they call attention to informal governance, which includes social norms, reputation/trust, codes, regulation by corporate laws, boards and incentive schemes. These authors also mention ownership, which can involve blockholders, shareholder activism and stakeholders, and stakeholder pressure, which could be applied through monitoring by creditors, auditors, analysts and competition (Thomsen & Conyon, 2012). From looking at Canada, Finland, Germany, and Korea, one could appreciate the diversity of available mechanisms and the creative ways in which companies can use them in order to address the variety of issues raised in the 2004 Principles of Corporate Governance.

Some of the principles that have been outlined by the OECD have been incorporated into their codes. The 2004 OECD Principles of Corporate Governance outline the importance of reforms to the system as new practices come to the fore. The U.K. has been carrying out changes that reflect the changes introduced in the OECD Principles. For example, in the OECD Principles, it is noted that there should be a separation of the chair's position from that of the CEO: "Separation of the two posts may be regarded as good practice, as it can help to achieve an appropriate balance of power, increase accountability and improve the board's capacity for decision making independent of management" (OECD, 2004, p. 63). The U.K. has adopted this policy in its UK Combined Code (2012), where the two roles of board chair person and CEO are made separate (U.K. Combined Code, 2012, p. 4).

The general values underlying corporate governance are those of "fairness, accountability and transparency" (Dion, 2005, p. 195). According to Dion (2005), every corporate governance system must have "(a) an orientation towards Justice-itself through the actualisation of the following values: fairness, integrity and objectivity; (b) an orientation towards Truth-itself through the actualisation of values of openness, trustfulness, and transparency; (c) the orientation towards harmony through attitudes of collaboration, care and diligence" (p. 195). These values are an integral part of the 2004 OECD Principles of Corporate Governance, and the OECD, through collaboration with OECD and non-OECD

countries, is able to inspire trustfulness among investors in various nations. When countries adopt the Principles, they are hoping to inspire trust in those with whom they have business relations.

## **2.10 Summary**

Section 2.2 provided a short historical overview of OECD, while Sections 2.3 and 2.4 described a historical background of corporate governance development in the OECD countries and short history of the corporate governance reforms within the OECD context. Section 2.5 discussed the two main governance systems in the OECD, namely, the Anglo-American or Shareholding Corporate governance model and the Continental European or Stakeholding Corporate Governance model, with Sections 2.5.1 and 2.5.2 describing these systems in greater detail. Section 2.6 and subsections 2.6.1, 2.6.2, and 2.6.3 describe the accounting, cultural and legal systems in these models, while Section 2.7, and subsections 2.7.1 and 2.7.2 described the ownership structures and debt structures associated with the Anglo-American and Continental models. Section 2.8 and subsections 2.8.1 to 2.8.6 describe the corporate governance mechanisms related to OECD corporate governance. Section 2.9 discusses examples of mechanisms used in some countries, and Section 2.10 summarises the chapter.

This chapter has also considered how the OECD Principles can affect corporate governance in countries with different accounting and legal systems, and in terms of cultural practices. It has distinguished between the countries that have the Anglo-American system, namely, U.K., U.S., Canada, Australia and Ireland, and those that follow the Continental system tradition. It has further shown that the Anglo American countries follow the common law, which means that its legal accounting, cultural and legal characteristics differ from the Continental system tradition and is based on civil law legal traditions and that are influenced by the accounting, cultural and legal traditions. These two systems differ in the institutions that develop and in the ownership and debt structures that exist in these



countries. What has been revealed is that these differences have an impact on existing corporate governance. The Anglo-American countries are more aggressive (masculine), tend to be individualistic, to provide greater protection for its investors, and are more amenable to risks. The continental system countries tend to be more passive (feminine) collectivist, to provide less protection for investors, and are less amenable to risks.

With these different countries utilising the Principles, the OECD has tried to be flexible in order to accommodate the different political, cultural, and economic systems that are using the Principles. However, with the request for greater guidance with respect to implementation, the OECD revised its Principles which have laid out specific mechanisms that are useful in implementation. Yet, it must be noted that because of differences in the countries, there would be different structures to accommodate these mechanisms. The result would be different manifestations of these mechanisms. It was also noted that corporate governance depends to a great extent on the relationships that exist among stakeholders, with owners increasingly demanding to have a voice in corporate governance in some countries, particularly the common law countries and with owners having too much control in the civil law countries and thereby having little protection for other shareholders. With different stakeholders, the area of developing good governance practices is an area in which the Principles would continue to evolve. It was shown that the two main discussed, the Anglo-American and the Continental, differ with respect to some of the important characteristics of corporate governance.

The following chapter will discuss how organisations carry out their operations using corporate governance functions. Considering the mechanisms that these two systems have in place, the following chapter will discuss the theories that help explain how corporate governance is achieved. What will be shown in the chapter are the different explanations provided by the theories to demonstrate how the organisations from these countries support corporate governance.

## **Chapter 3: Theoretical Literature Review**

### **3.1 Introduction**

This chapter discusses how corporate governance functions as the means for organisations to manage their operations in a responsible manner. Its main objective is to discuss the theories that have been put forward to explain how corporate governance is carried out, and to show how the various theories of corporate governance are applied to corporate performance. More specifically, the corporate governance theories, namely, agency, stewardship, resource dependence, legitimacy and institutional, will be discussed to show the relationship between corporate governance and risk-taking, credit rating and cost of capital. This chapter therefore looks at internal corporate governance structures and links these to the financial performance of organisations. In other words, this chapter examines how each particular theoretical lens sees firms being affected in terms of risk-taking, credit rating and cost of capital.

These theories of corporate governance have been drawn from several disciplines, including economics and finance (agency theory), sociology and psychology (stewardship theory), organisational theory and sociology (resource dependence theory), and management (stakeholder theory) (Letting, Wasike, Kinuu, Murgor, Ongeti, & Aosa, 2012). Legitimacy and institutional theory are seen as important because they provide the basis for organisations to institutionalise social norms and values and thereby gain legitimacy. But these theories are also shown to be related to resource dependence theory, with resource dependence being also based on the relationship between organisations and their environment, and with legitimacy providing the basis for a greater flow of resources to organisations (Chen & Roberts, 2010).

The format that is being taken to discuss these theories include a description of the theory, its assumptions and how these are used to show the relationship between corporate governance, and risk-taking, credit rating and cost of capital. Section 3.1.1 further describes agency theory, showing how it relates to corporate governance in terms of risk, credit rating and cost of capital. Section 3.1.2 deals with stewardship theory, Section 3.1.3 describes resource dependence theory, Section 3.1.4 examines legitimacy theory and Section 3.1.5 describes institutional theory. The sections are further broken down into subsections, which go into details as to how the theories relate to corporate governance in terms of risk, credit rating and cost of capital.

## **3.2 Theoretical literature review**

### **3.2.1 Agency theory – General discussion of theory**

Agency theory is based on the separation of the roles of owner and manager, or of possession and control (Kiel & Nicholson, 2003). This theory is based on the principal-agent framework. The inference here is that experts are hired as managers to manage the corporation, and are expected to look after the interests of the owners (Kiel & Nicholson, 2003). With the separation of ownership and control, the expectation is that organisations will be managed expertly, with the managers taking the place of the owners, and keeping the owners' interest as their mission (Hawley & Williams, 1997). When individuals invest in organisations, their goal is to maximise their returns, and managers, as their agents, are expected to ensure that their returns are maximised (Hawley & Williams, 1997). But this is not assumed to follow naturally, since the assumption is made that agents, as individuals, seek their own self-interest at the expense of owners' interests (Jensen & Meckling, 1976; Abdullah & Valentine, 2009).

It is on this basis that the assumption is made that agents cannot be trusted to seek the maximisation of owners' returns without having mechanisms in place to monitor the operations of the agents (Abdullah & Valentine, 2009). This concern is understandable, as

owners, or shareholders, entrust agents to invest large amounts of capital on their behalf. Having good corporate governance is considered an important aspect of the shareholders-manager or owners-agent relationship, in order to ensure that the interests of shareholders or owners are given the expected attention (Adams, 2005).

Agency theory is therefore concerned with investigating the relationship between owners and their agents. This theory examines ways to ensure that agents are responsible for their actions in looking after the interests of owners (Abdullah & Valentine, 2009). It further prescribes certain governance structures to minimise the conflicts in the relationships, reduce risks and maximise the wealth of the owners (Adams, 2005; Abdullah & Valentine, 2009).

Corporate governance can therefore be seen as a means to address agency problems. The problems that arise from the principal-agent relationship pose systemic risks (Garmaise & Liu, 2005). However, there is debate concerning whether corporate governance should focus on shareholder rather than stakeholder interests. On the one hand, some believe that the principal-agent relationship should focus on the shareholder, while others believe that agency theory must be applicable to the relationship between management and all stakeholders in an organisation (Letza, Sun, & Kirkbride, 2004).

#### 3.2.1.1 Application of agency theory to CG and risk-taking

First, stakeholders that have a strong influence on the resources of the organisation would necessarily be shown to be more positively affected when there is good corporate governance in the organisation (Lai & Chen, 2014; Gamble & Kelly, 2001). Studies done using agency theory to measure the performance of organisations provide different results. While some studies of corporate governance using the agency lens show that well-governed organisations have a positive impact on the performance of organisations, others refute this, while others are neutral in their findings (Lai & Chen, 2014). But Lai and Chen point out that the likely reason for this discrepancy in finding could be because distinction

is not being made with respect to the stakeholders that are being considered. Lai and Chen (2014) point out that there is a necessity to make distinction because of the different influences that stakeholders have on the firm.

Second, as Lai and Chen (2014) point out, major stakeholders or shareholders have been seen as more likely to desire little risk and more growth and that stakeholder gains in the organisation tended to favour the major shareholders more with better returns than other stakeholders. As Gamble and Kelly (2001) point out, shareholders are seen as privileged, since the company focuses on protecting the interests of shareholders. Having alliance partners as one of the stakeholders in an organisation leads to tough competition in the global environment. This competitiveness is seen as making the organisation more efficient, very different from firms that face competition as they develop their own know-how (Lai & Chen, 2014).

Third, in the context of corporate governance, with strong board independence, it can be argued that agency theory sees directors as looking after the interests of the main shareholders, and therefore taking fewer risks with the investments of primary stakeholders or shareholders (Sternberg, 1997). On the other hand, secondary stakeholders do not have the same assurances, and it is likely that they would face greater risks than alliance partners or major partners (Lai & Chen, 2014). The rationale for major shareholders having greater wealth and less risk stems from the fact that boards of directors are thought to have greater fiduciary obligations to major shareholders than to any other stakeholders (Lai & Chen, 2012).

Fourth, Garmaise and Liu point to the fact that managers of organisations, under agency theory, are prone to investment, even when there is an indication that conditions may not be ideal. Dishonest managers would expose the organisation to systemic risks by taking chances and investing when there are indications that it may not be the best decision. In

these instances, dishonest or corrupt managers are generally looking out for their own self-interest.

Fifth, another risk to the agency theory comes from the stakeholder perspective, which sees risk as associated with the failure of corporate governance to take into consideration the interests of all stakeholders (Letza et al., 2004). The risks for other stakeholders would be greater if corporate governance did not insist on all stakeholders and not just shareholders.

Therefore, if corporate governance is well established, it is expected that there would be little risk-taking with agency theory, as boards and directors would be working to protect the interests of the shareholders, as they represent the principal with the managers as their agents.

#### 3.2.1.2 Application of agency theory to CG and credit ratings

First, it is expected that when agency theory is applied to corporate governance and credit rating, credit rating would be positive in the presence of strong governance. Would-be lenders are impressed with good corporate governance systems, as agency problems which arise between ownership and control, from conflicts of interest between controlling and non-controlling shareholders, and from self-interested managers, would be greatly reduced or eliminated.

Second, investors are also concerned with maximising their investments, and they choose companies with a good credit rating. A good credit rating is based to a great degree on the absence of risk, and, as noted above, where there is much conflict in the principal-agent relationship, there is much systemic risk (Garmaise & Liu, 2005). It would follow that a company with a good corporate governance structure and with appropriate mechanisms for reducing this conflict, would also be a company that would have good credit rating. Governments, investors, banks, and brokers all use credit ratings to determine creditworthiness. The corporate governance structure of an organisation can therefore

indicate to an investor whether a company would make a good investment choice (Ahmad, Rashmi, Bakshi, & Saha, 2009).

Third, it was noted that where there is good corporate governance and a separation of the roles of CEO and chair of the board, organisations are more likely to be viewed more positively, as the detrimental effect of this duality is removed. In many organisations, the removal of this duality brings about better corporate governance. It is expected that credit ratings are more positive than where there is better corporate governance (Elbannan, 2009; Jiraporn, Kim, Kim, Kitsabunnarat, 2012).

Fourth, credit ratings are said to affect the ability of an organisation to borrow and so organisations that have poor governance and that are highly leveraged would very likely have low credit rating. As Elbannan (2009) points out, organisations that have poor governance are more likely to have poor credit ratings. According to agency theory, if there is good corporate governance, then there is likely to be good credit ratings for the firm.

#### 3.2.1.3 Application of agency theory to CG and cost of capital

First, according to Jensen & Meckling (1976), agency costs that are associated with the separation of ownership and management involve the expenditures that the principal would incur to monitor the operation, the bonding expenditures that the agent would incur, and the residual loss that the principal would incur as a result of the agent not looking after the interests of the principal. In the context of an organisation with corporate governance mechanisms, including a strong board, the board is seen as the monitoring mechanism that helps to minimise the problems associated with the principal agency relationship between shareholders and managers (Letting et al., 2012). This is why the OECD Principles of Corporate Governance call for outside independent boards and propose the separation of the roles of board chair and CEO (OECD 2004).

Second, in applying agency theory, Garmaise and Liu (2005) point out that agents or managers are more likely to engage in investments. When corporate governance is in the hands of managers, managers representing shareholders are more likely to invest heavily, sometimes even more heavily than the shareholders would have wanted. If managers are dishonest, they can use their knowledge of the situation to hide a weak signal, and in the process reduce shareholder wealth (Garmaise & Liu, 2005). Dishonest managers could demonstrate ineffective corporate governance and, through corrupt means, increase the firm's exposure to systemic risk and reduced organisational capital.

Third, another way in which corporate governance in order to overcome agency problems could affect firm value is that it could lead to reduce expectation of return on equity, and this could lead to lower cost associated with monitoring of shareholders' equity (Ammann et al., 2011). The lower costs could lead to high valuation of the firm, but the costs that are associated with implementing the stronger governance mechanisms could be greater than the benefits that accrue because of the benefits derived from the lower costs of capital (Ammann et al., 2011). In short, it is held that stronger corporate governance mechanisms are associated with higher valuation of the firm and lower costs of capital, and so corporate governance should be seen as "an opportunity rather than an obligation and pure cost factor" (Ammann et al., 2011, p. 54).

Fourth, better governance is seen as associated with less agency conflict (Jiraporn, Kim, Kim, Kitsabunnarat, 2012), better performance, and better valuation, which is further associated with greater creditworthiness and so cost of capital is less (Elbannan, 2009).

### **3.2.2 Stewardship theory – General discussion of theory**

Stewardship theory takes a different approach to agency theory in that the former sees top management and executives as stewards for shareholders. In other words, stewardship theory sees no conflict between agents and shareholders, and instead sees stewards taking a genuine interest in protecting the interests of owners and shareholders. The motivation of



top management and executives is to promote the wellbeing of the organisation, identifying with it more on the basis of duty than personal self-interest. Stewards see the success of the organisation as conferring independence on them, as shareholders come to trust them more. Managers and executives, according to stewardship theory, look after shareholders' interests and effectively control the organisation, which empowers them to maximise the profits of the organisation (Abdullah and Valentine, 2009).

Whereas agency theory holds that outside and independent directors provide the best security for organisations and better corporate performance, stewardship theory sees corporate performance being superior when there is a dominance of inside directors (Letting et al., 2012). The rationale for this position is that inside-dominated boards provide greater depth of knowledge, greater access to current information that could benefit the operation of the firm, more technical expertise and greater commitment to the organisation (Letting et al, 2012).

The major distinction between agency theory and stewardship theory is that the former sees the separation of management (CEO) from chairman of the board as important for maximising the interests of the shareholder, while stewardship theory sees the maximisation of the shareholder as incumbent about the duality of the role of CEO and chairman of the board (Donaldson and Davis, 1991). The evidence that Donaldson and Davis provide for seeing stewardship theory as advantageous is that their study showed that shareholder returns or organisational performance were greater with CEO duality, which supports stewardship theory. But they also point to the study by Rechner and Dalton (1991), which also took a stewardship approach, but found the opposite, thereby supporting the agency theory (Donaldson & Davis, 1991). To Donaldson and Davis (1991), these contradictions in findings only serve to highlight the dangers of using agency theory with the assumptions of self-interested managers and conflict of interests, as the CEO duality could work well.

#### 3.2.2.1 Application of stewardship theory to CG and risk-taking

First, in stewardship theory, where the role of the good steward is that of looking out for the well-being of the shareholders and owners, there is no place for the dishonest manager as found in agency theory, for the role of the manager in stewardship theory would be to increase the shareholder wealth. Consequently, there would be less systemic risk in stewardship theory than in agency theory. As Aguilera, Gospel and Jackson (2007) point out, stewardship theory has removed the assumption of the behaviour of managers, showing the managers as good stewards with very few situations involving conflict of interests arising.

Second, application of stewardship theory to risk-taking will show the directors of the organisation as identifying with the organisation, and seeing the success of the organisation as the same as their success (Clarke, 2007). This behaviour demonstrates that there is little risk associated with directors who see themselves as stewards of their organisation. Therefore, in this setting, shareholders would see their wealth as very likely to be maximised, since the problem that is often encountered in the principal-agency relationship is missing in stewardship theory (Abdullah & Valentine, 2009).

#### 3.2.2.2 Application of stewardship theory to CG and credit ratings

First, in terms of credit ratings, one would expect that since shareholders have great trust in a manager, and since the manager, according to this theory, is working to improve corporate wealth, then it is likely that credit ratings would also be high. This would be supported by the fact that shareholders are pleased with the organisation's performance and with the wealth they are accruing from their investment. Good performance is associated with higher credit ratings (Elbannan, 2009).

Second, it was shown that stronger internal control was also associated with higher credit ratings. Firms that have greater internal control would be able to make good decisions about

managing their operations (Elbannan, 2009). These firms would be different from firms that have speculative-grade rating, that are smaller size, and that have lower profitability (Elbannan, 2009). As noted, firms that have weak internal control also have “lower cash flows from operating activities, net losses in the current and prior fiscal year, higher income variability and higher leverage than firms compared to firm with high-quality controls” (Elbannan, 2009, p. 127).

Third, there would be less cost and therefore higher credit ratings associated with a firm, where managers take the stewardship approach, because there would be less need for the same stringent corporate governance mechanisms that would be required from firms viewed under agency theory.

#### 3.2.2.3 Application of stewardship theory to CG and cost of capital

First, one would expect that under stewardship theory the cost of capital may be relatively low. This may be the case since the manager in stewardship theory, unlike the manager in agency theory, would not be highly prone to investment, but would ensure that all the information indicates that it is the right time to invest. Therefore, there would very likely be a more conservative approach to investment under stewardship theory, and could lead to lower costs of capital and be a higher valuation of the organisation.

Second, shareholders would also not incur additional costs associated with monitoring the organisation, if it is recognised that the organisation is based on a stewardship model. With greater trust in their leaders and directors, and realising that the purely selfish aims of the agent are missing from the leaders operating under stewardship theory, shareholders would not incur as many costs, and directors would see collaborating with the shareholders as being useful to achieve lower costs and greater shareholder wealth (Davis, Schoorman, & Donaldson, 1997).

### **3.2.3 Resource dependence theory – General discussion of theory**

Resource dependence theory is also based on the relationship between an organisation and society. It starts from the assumption that an organisation is not a self-sufficient entity, but one that is dependent on resources from the larger societal environment. The organisation therefore needs to gain access to these resources through exchanges and transactions with other entities that possess these resources. Resource dependence theories take the position that while organisations are constrained both by situations and their environment, they are able to negotiate to gain access to resources (Chen & Roberts, 2010).

Resource dependence theory holds that boards of directors are important to the functioning and performance of an organisation because the expertise and connections with others in the outside environment that individual board members have helps the organisation to secure resources (Letting et al., 2012; Abdullah & Valentine, 2009). The corporate board and outside directors are therefore seen as important for the organisation's performance. Board member diversity and external networks among board members and other organisations are important factors in resource dependence theory (Letting et al., 2012).

Resource dependence theory also shows that boards of directors with “broad and deep levels of knowledge” are in an advantageous position to make use of this knowledge in the wider external environment. (Judge et al., 2014).

#### **3.2.3.1 Application of resource dependence theory to CG and risk-taking**

First, from a resource dependency theory perspective, organisations face risks associated with obtaining the needed resources, when they lack the skills and knowledge necessary to carry out their operations. This theory holds that organisations are constrained by the environment especially by their situations, but that they could engage in exchanges and transactions that would allow them to overcome these constraints (Chen & Roberts, 2010). Organisations obtain these much needed resources in their acquisitions of directors.

Second, when organisations fail to acquire knowledgeable directors, their risk-taking increases as they lack contact with others in the external environment who have the resources or access to needed resources (Aguilera et al. 2004).

Third, risk-taking is reduced when organisations are able to attract directors from different fields and disciplines would find that they are well protected against many of the risks that could affect them negatively (Aguilera et al., 2004).

#### 3.2.3.2 Application of resource dependence theory to CG and credit ratings

First, based on having a greater pool of knowledge about different aspects of an organisation's operations, boards of directors are better able to steer an organisation in a positive direction for better performance. A firm that has this knowledge base would be a firm that is able to attract investors and would have a positive credit rating.

Second, as Elbannan (2009) points out, "Credit ratings are extensively used in financing and investment decision-making, and therefore affect resource allocation in an economy. Ratings impact the firm cost of debt through influencing bond pricing and yield" (p. 128). Therefore, using the resource dependency theory allows for determining the ability of a firm to be able to access the resources that are necessary to improve the firm's performance. A good firm performance, which would lead to its creditworthiness being expressed in positive credit ratings (Elbannan, 2009).

#### 3.2.3.3 Application of resource dependence theory to CG and cost of capital

First, organisations that have access to needed resources are better able to carry out their operations because they have the knowledge and resources to do so. It can be argued that these organisations would very likely have good performance. Good performance would be reflected in meeting expectations and being creditworthy.

Firms that are creditworthy, i.e. have good credit ratings, would have little difficulty attracting investors, and even less difficulty finding sources of capital. The costs for accessing those sources of capital would be lower and thus more attractive than for a firm with a poor credit rating.

Second, it is expected that under resource dependence theory good corporate governance would contribute to lower costs of capital. Having access to resources means that it would cost less than if one did not have access and had to either do without the resources or pay a premium for them.

Third, resource dependence theory could also mean that an organisation could have directors as resources that could be called upon to provide assistance when needed. A reciprocal relationship could be developed. As Casciaro and Piskorski (2005) point out, one of the goals of applying resource dependence theory is to remove uncertainty: “The theory’s central proposition is that organisational survival hinges on the ability to produce critical resources from the external environment” (p. 167). It is highly practical for organisations to form selective relationships where “they bypass the source of constraint by reducing the interest in valued resources, cultivating alternative sources of supply, or forming coalitions” (Casciaro & Piskorski, 2005, p. 167). Using this and other strategies would reduce the cost of capital.

### **3.2.4 Legitimacy theory – General discussion of theory**

Legitimacy theory is based on examining whether the organisation meets the expectations of society. In other words, organisations declare their value systems, and legitimacy theory examines whether the values espoused by the organisation are congruent with the values of society. However, as pointed out, this theory does not outline specific means for bringing about congruency between an organisation’s value system and that of the society in which it operates (Chen & Roberts, 2010). Deegan and Bloomquist (2006) explain that organisations strive to show that there is congruence between the social values that they

hold or try to display and the social values that are established in their society, using the Australian mineral industry and the World Wide Fund to illustrate this. Organisations try to legitimise themselves by showing that they are socially responsible.

In describing legitimacy theory, Chen and Roberts (2010) identify institutional legitimacy and strategy legitimacy. The former, which also takes in institutional theory, is based on the organisation conforming “to the established patterns of other similar social institutions” (p. 653). That is, the organisation gains legitimacy because it acts like similar organisations. But strategic legitimacy is achieved in terms of resource dependency theory and stakeholder theory. In terms of resource dependency theory, legitimacy is achieved in how the organisation is able to gain “access to relevant resources” (Chen & Roberts, 2010, p. 653). In terms of stakeholder theory, legitimacy is achieved when an organisation is able to “balance the conflicting demands of various stakeholders” (Chen & Roberts, 2010, p. 653).

#### 3.2.4.1 Application of legitimacy theory to CG and risk-taking

First, corporate governance is therefore concerned with removing the risk of loss of legitimacy. In terms of corporate governance, legitimacy must be maintained in the three areas mentioned above. The organisation must be able to access needed resources, and legitimacy comes when it is able to do so. This means that the organisation must behave in a manner that allows it to attract directors and other relations in the larger external environment that would ensure that it is able to carry out necessary exchanges and transactions. Risk involves behaving in ways that prevent this. Similarly, the organisation must be perceived to represent the interests of all of its stakeholders. Failure to do this causes the organisation to risk losing its legitimacy.

Second, organisations recognise that there are certain general ideas that society considers appropriate and expects. When organisations do otherwise, they run the risk of alienating members of society. For example, corporations are expected to be good corporate citizens,

and so they try to promote that image. This is why corporate social responsibility is such an important concept. As pointed out, “Board members and managers may clearly consider multiple constituents when making decisions, so acting to promote the wellbeing of society is consistent with the dictates of good corporate governance in these countries” (Devinney, Schwalbach, & Williams, 2013, p. 414).

Third, companies that do not live up to social expectations run the risk of losing the favour and support of members of society, many of whom are their customers, suppliers, employees and other stakeholders. Deegan and Bloomquist (2006) explain that organisations strive to show that they hold the same values as the society in which they operate, and these authors illustrate this by pointing to the Australian mineral industry and the World Wide Fund to show how both of these have demonstrated their interest in protecting the environment.

In these ways, organisations strive to be socially responsible, so as to legitimise themselves, hold on to customers, not alienate the society, but gain the support of the society, if they are to reduce their risk-taking.

#### 3.2.4.2 Application of legitimacy theory to CG and credit ratings

First, an organisation that loses its legitimacy runs the risk of having lower credit ratings. This would happen because it would not behave in socially expected ways, would be unable to attract necessary resources and so would be unable to carry out its operations in a manner that allows it to achieve expected levels of performance. If an organisation is seen as not meeting and balancing the needs of its stakeholders, it would earn a reputation for having weak internal control. As mentioned before, “corporate governance strength is positively related to internal control quality” (Elbannan, 2009, p. 127), but corporate governance is also associated with better credit ratings (Elbannan, 2009).



Second, good corporate governance is seen as important to maintaining good credit ratings. Organisations that show themselves as having legitimacy behave as expected, are good corporate citizens and have a reputation for meeting the needs of all their stakeholders. As mentioned above, these organisations can balance stakeholders' needs, showing that they are considered legitimate not only by shareholders, but also by employees, customers and other stakeholders. For example, this type of organisation is not likely to have labour disputes which could present a major operational risk.

These considerations make legitimacy theory important in considering credit ratings; an organisation that is able to gain the support of its stakeholders and that can live up to its reputation of being a good corporate citizen will face fewer risks and enjoy good ratings from investors, credit agencies and other users of the organisation.

#### 3.2.4.3 Application of legitimacy theory to CG and cost of capital

First, legitimacy theory applied to corporate governance would lead to lower cost of capital, and this is based on the application of corporate governance to stakeholder theory, resource dependence theory and institutional theory. The factors that have led to lower costs of capital in all of these theories also apply to legitimacy theory, since all of these theories contribute to legitimacy theory. With corporate governance, when organisations behave in ways that are socially accepted, when organisations are able to attract resources, and when they are able to meet the needs of all of their stakeholders and not just some, then they are seen as gaining legitimacy, which translate into higher valuation and lower costs of capital (Elbannan, 2009).

Second, an organisation that has legitimacy would be able to attract skilled workers and well-connected managers and directors, and would be respected. It would follow that the cost of this legitimacy would be low, because the company would have the reputation of behaving in socially expected ways.

Third, in some cases, gaining legitimacy would mean that an organisation has to incur costs for programmes. For example, an organisation may want to gain legitimacy by showing concern for the environment, and so would undertake some programmes that suggest it is environmentally friendly. However, in the long run, the cost to build that legitimacy would be more than repaid through the goodwill that would emerge as a result of the organisation's legitimacy in this area. Shareholders can play an important role in supporting the corporate social responsibility programmes that their organisations are involved in (Devinney et al., 2013).

### **3.2.5 Institutional theory– General discussion of theory**

Institutional theory also looks at the relationship between organisations and the societal environment in which they exist. More specifically, institutional theory examines the stability and survival of the organisation, and highlights institutional norms and rules that the organisation can incorporate in order to promote its longevity (Chen & Roberts, 2010). The link between legitimacy theory and institutional theory can be appreciated by recognising that when an organisation adopts institutional norms and rules and experiences longevity, it is seen as gaining legitimacy within its society.

Westphal and Zajac (2014) point to macro and micro levels of analysis, and show how these are linked through the behaviour of individual organisation elites, which occur “not in a social vacuum, but rather in a socially situated context and by individuals whose interpretation of the context is itself socially constructed or constituted” (p. 608). In other words, organisation leaders are influenced by the social relationships, networks and institutions in which they operate, and their behaviour is influenced by their experience and socialisation. Therefore, leaders of elite organisations tend to be influenced by their social interaction. For example, these authors point out that through ingratiation, social influence is wielded. Also, managers and directors can engage in ingratiation behaviour towards their peers, and this could cause their peers to support the recommendations made

by these managers and directors. But this is seen as weakening corporate governance, for as these authors maintain, for this could weaken board independence and compensation paid to directors (Westphal & Zajac, 2014, p. 611). It was also shown that leaders may distance themselves from other leaders that violate existing norms of corporate governance; for example, supporting measures to increase the independence of the board from management, or dismissing the CEO (Westphal & Zajac, 2014). Leaders that are distanced are often excluded from informal gatherings, while their advice is solicited less frequently, and they may be actually ostracised (Westphal & Zajac, 2014).

In this way, one can see that values, norms and rules of an organisation and institutional changes that are carried out are greatly influenced by leaders and directors of an organisation. Through their socially situated and socially constituted behaviour, they have the means to influence changes in an organisation. Westphal and Zajac (2014) point out that normative views about corporate governance in the financial community, that is, the institutional norms and rules governing organisations, are based on “agency logic of governance” (p. 634).

#### 3.2.5.1 Application of institutional theory to CG and risk-taking

First, institutional theory shows how managers and directors exert influence on their subordinates, peers and even journalists, and this could expose institutional weaknesses. Using the “agency logic of governance”, these managers and directors would take measures that would reduce their agency cost and promote their self-interest instead of the interests of shareholders (Westphal & Zajac, 2014). For example, as these authors point out, if there was a negative appraisal of a company’s performance by security analysts, management would appear to follow agency prescriptions of formally increasing the independence of the board from management, but in effect “without increasing the board’s social independence” (Westphal & Zajac, 2014, p. 635). Another example would be appointing board directors that were friends of the CEO (Westphal & Zajac, 2014). In such a situation,

the risk-taking on the part of shareholders would be great, if corporate governance was co-opted through the use of social influence.

Second, great risk could result when professionals accept each other's ideas without questioning them, because of peer influence. For example, Westphal and Zajac (2014) highlight the risk-taking that is involved by pointing to the Parmalat scandal in which members of the financial community accepted reports, presentations and press releases because of "institutional ascription" or because these professionals who were interconnected probably through boards, simply accepted each other's words as truth (p. 638).

Third, there is risk-taking that could lead to shareholder wealth being compromised. For example, if certain norms and rules continued in an institution because certain directors or leaders benefited from them, it is unlikely that they would want to change things. The wealth portfolios of some leaders and directors could influence risk-taking (Wright, Ferris, Sarin & Awasthi, 1996). Those that dare to go against these rules could be ostracised.

Fourth, but even as some executives and directors are striving to bring about changes that would genuinely improve institutional norms and rules, they are faced with "conformity pressures in rendering judgements about the effects of organisational policy adoptions, and their judgements are vulnerable to social psychological biases" (Westphal & Zajac, 2014, p. 649). These executives and directors are also still influenced by how other analysts feel about the possible changes. Therefore, there is great risk-taking in applying institutional theory.

#### 3.2.5.2 Application of institutional theory to CG and credit ratings

First, institutional theory can be seen as related to corporate governance and credit ratings in that the norms that exist in particular countries have an impact on the ability of organisations to obtain credit. As Elbannan (2009) notes, credit rating determines to a great

extent the “cost of debt capital, capital structure, and hence the range of acceptable investment opportunities” (p. 127). Some researchers believe that “credit ratings may be affected by internal governance mechanisms instituted by firms and that the quality of internal controls is a potential driver of cost of equity capital” (Elbannan, 2009, p. 127).

Second, it is on this basis that it has been argued that firms with low-quality internal controls generally have low credit ratings. It can be argued that many firms in emerging markets are more likely to have low credit ratings because they operate in an environment where it is common practice not to have many of these internal controls. But it is also possible that some firms may try to improve their credit ratings by undertaking measures that are not part of their country’s law or code (Klapper, Laeven & Love, 2006).

Third, some countries operate without strict corporate governance mechanisms, and it is unlikely that firms operating in these countries would have these mechanisms. This would contribute to firms having low credit worthiness and therefore low credit rating.

Fourth, macro institutional framework must be present to support the corporate governance measures that a firm could institute. When countries have the proper institutional framework, firms must focus on having strong internal controls, for these controls can cause greater attraction to investors (Elbannan, 2009). Where countries have good institutional framework, firms are likely to have good credit ratings.

#### 3.2.5.3 Application of institutional theory to CG and cost of capital

First, the institutions that exist in different countries, and the norms and rules that are socially accepted, play a role in determining the actions organisations will take to conform to the norm. In the case of some emerging markets, such as Brazil, the nature of corporate governance that is used and that positively affects firm performance is different from corporate governance that is often held as bringing results in the many developed countries. For example, in their findings, Black et al. (2012) find that board independence is

negatively associated with market value in Brazil and Turkey. With the level of self-dealing seen as a common practice in Brazil, for example, outside shareholders may be seen as calling for more outside directors to cut down on this practice (Black et al., 2012, p. 22). This will contribute to higher cost of capital in this environment.

Second, where there is strong corporate governance that is widely accepted, for example, independence of directors, there would be greater valuation attributed to capital that is invested in these countries. Also, the cost of getting capital would be greater because of the perception that there is risk associated with the investment, but also because certain governance mechanisms that are associated with good performance may not be in place. Borrowing funds would also be more expensive for these same reasons. Therefore, the cost of capital would be greater for these countries that do not have certain institutions that are commonly associated by global investors with strong corporate governance.

### **3.3 Summary**

This chapter has discussed agency theory, considering both shareholder and stakeholder perspectives; stewardship theory; resource dependence theory; legitimacy theory; and institutional theory. These theories define the relationships between the different stakeholders within organisations, as well as the relations between organisations and the societies in which they operate. Ultimately, these theories aim to show how corporate governance mechanisms are connected to organisational performance.

Section 3.2.1 describes agency theory and this description is further broken down to show how it relates to corporate governance in terms of risk, credit rating and cost of capital in subsections 3.2.1.1, 3.2.1.2, and 3.2.1.3. Similarly, Section 3.2.2 deals with stewardship theory, showing how it relates to corporate governance in terms of risk, credit rating and cost of capital in similar subsections. Section 3.2.3 and its subsections describe resource dependence theory and how these relate to risk, credit rating and cost of capital. Section 3.2.4 examines legitimacy theory and Section 3.2.5 describes institutional theory. Both of

these sections are further broken down into subsections, which go into detail as to how these relate to corporate governance in terms of risk, credit rating and cost of capital.

This chapter also discussed these theories in terms of risk-taking, credit rating and cost of capital. While corporate governance has been associated with good firm or organisational performance using agency theory, it has been shown that not all organisations demonstrate good performance based on agency theory. Agency theory from the shareholding perspective is associated with less risk, higher credit rating and lower cost of capital. Agency theory from the stakeholding perspective shows more risk, lower credit rating and higher cost of capital. Stewardship theory, which has different assumptions from agency theory, was also seen to work in some settings. For the most part, stewardship theory is associated with less risk-taking, higher credit rating and lower cost of capital. Resource dependency theory is seen to work for the most part where organisations are able to have good relations with its external environment, with institutional and legitimacy theories also showing the importance of organisations interacting well with their environment. Lower risk-taking, higher credit rating and lower cost of capital is associated with firms that take advantage of this perspective. Legitimacy theory is associated with less risk-taking, higher credit rating and lower cost of capital. On the other hand, institutional theory was associated for the most part with more risk-taking, lower credit rating, and higher cost of capital, although this was dependent on the both country and firm norms.

All of these theories are shown to be highly related, and using one approach may not yield the depth of knowledge necessary. It is for this reason that Chen and Roberts (2010) point out that their discussion of the theories may be seen as “demonstrating the possibility of incorporating several theories to obtain a more coherent and complete understanding of an organisation’s relationship to society,” but their discussion may also reveal “the usefulness of investigating a particular social occurrence through more than one theoretical point of view” (p. 662).

It is important to recognise that all organisations cannot be viewed through the same lens, and therefore cannot use the same approach to introducing corporate governance. The rationale for this thinking is supplied by “substantial evidence that one size does not always fit all firms in all countries” (Black, Carvalho, & Gorga, 2010, p. 2).

Several factors must be considered with respect to organisations. Country characteristics, firm size and ownership structure, and corporate governance characteristics, including board structure, all come into play in explaining the particular theory or theories that may be used. Also to be considered are the nature of social relations among managers and directors, and the influence this has on the behaviour of these individuals. In short, several factors come into play in determining the performance of a firm. Consequently, it is clear that no single corporate governance theory can be used to give a complete picture of the performance of an organisation. The following chapters show the applicability of these different theories to explain the corporate governance mechanisms on risk-taking, credit rating and cost of capital across different countries.



## **Chapter 4: Corporate Governance Mechanisms on Risk-Taking, Credit Ratings and Cost of Capital: Empirical Literature Review and Hypotheses Development**

### **4.1 Introduction**

Corporate governance, or the rules and practices that a firm uses to direct its operations, is important as it indicates to its stakeholders the responsibility and legitimacy of the firm. Individuals, organisations, investors and other stakeholders, choosing to do business with a firm, can tell from the firm's corporate governance structure how well management is committed to keeping their investments and other interests safe over time. This chapter outlines and discusses the corporate governance mechanisms, which are important measures that can be used to determine how well a company is being managed, and can serve as indicators to individuals, organisations, investors and other stakeholders whether their involvement in the firm is sound. From the perspective of the firm, corporate governance is therefore seen as the means to inspire investor confidence, as well as promote growth and from the perspective of the stakeholder, as a means of identifying good management. This chapter identifies the corporate governance mechanisms that will be used in this study, namely, corporate governance index, ownership structure and board structure. Each of these corporate governance mechanisms would be assessed in terms of how they have an impact on firm performance.

Section 4.2 discusses Corporate Governance Index (CGI) and its impact on risk-taking, credit ratings and cost of capital. Section 4.3 discusses ownership structure variables, including block ownership, institutional ownership, and director ownership, and their impact on risk-taking, credit ratings and cost of capital. Section 4.4 deals with board structure variables, including board size, independent directors, board diversity and frequency of board meetings, and their impact on risk-taking, credit ratings and cost of

capital, while Section 4.5 provides a chapter summary. The objective of this study is to show how corporate governance as represented in these different variables have an impact on risk-taking, credit ratings, and cost of capital.

## **4.2 The corporate governance index and risk-taking, credit ratings and cost of capital**

### **4.2.1 CGI and risk-taking**

Corporate governance, both internal and external, is therefore important to the success of organisations, as investors and other stakeholders consider the quality of management that a firm has in securing stakeholder interest (World Bank, 1999). According to the World Bank (1999), the board of directors could achieve good internal governance and could safeguard the interests of shareholders by monitoring the behaviour of management. Accountants, investment bankers, suppliers of credit, suppliers of materials, and other stakeholders, could also provide effective external governance by monitoring what the management of an organisation is doing, and thereby influencing the behaviour of management (World Bank, 1999). Therefore, careful attention to corporate governance is a high priority for firms that want to attract more investors, as corporate governance mechanisms are the indicators to stakeholders that their interests are being given the required attention by management.

Risk-taking, credit ratings and cost of borrowing money are all issues that are important to management. Management behaviour would therefore be influenced by actions taken by external organisations which might impact the organisation's risk, credit and ability to borrow money at attractive rates. Management behaviour would also be influenced by how the actions of these external organisations would affect management's well-being and position in the organisation. Therefore, management would be concerned with both internal and external governance, as its agency role is being scrutinised both internally and externally. Therefore, management would consider what characteristics its organisation

should have in order to elicit favourable actions in terms of risk-taking, credit ratings and cost of borrowing money.

Elbannan's (2009) research suggests that organisations that receive investment ratings are generally organisations with good external corporate governance. This research also suggests that when an organisation has poor internal governance, it is also likely not to receive an investment ratings, which would lead to higher costs for capital (Elbannan, 2009). These are facts that management takes seriously, as it reflects how it manages the organisation. Elbannan (2009) discovered that organisations with a speculative ratings were generally smaller organisations, with low productivity, lower income and higher leverage. They were not attractive to capital investors (Elbannan, 2009). This would mean that organisations with poor external and internal governance would be seen as having higher risk, lower credit ratings and higher costs of borrowing, if they were able to attract some capital.

Management, in its agency role, would strive to improve its external corporate governance, so as to receive a higher credit ratings. The rationale for this would be to increase the organisation's credit ratings and so be more likely to have doing this would be more desirable to capital investment.

The theoretical underpinning to hypothesis H1a is based on agency theory that shows that corporate governance is essential to promoting the interests of the shareholders, and when this governance is missing, it can be expected that there is greater risk to the shareholders and to the long term success of the company. According to Sternberg (1997), strong monitoring on the part of the board is the result of strong independence. Strong independence of the board, a characteristic of agency theory, shows that management cannot have its way and pursue its own interest to the detriment of shareholders. Therefore, a strong board looks after the interests of the shareholders, and controls risk-taking on the part of management. Stewardship theory also applies here because it shows that managers

serve an important function, namely, that of protecting the interests of the employees and other stakeholders. Therefore, these two theories can be seen as underlying the relationship between CGI and risk taking.

Ashbaugh-Skaife et al.'s (2004) research shows that organisations that were able to improve their governance structure over the period studied were also able to lower their cost of borrowing. According to Shleifer and Vishny (1997), Easterbrook and Romano (1993) and Jensen (1993), studying the corporate governance mechanisms, arrived at divergent opinions on the subject.

The structure and mechanisms of corporate governance have attracted the attention of researchers. Ntim et al. (2013) examine how corporate governance is implicated in corporate risk disclosure and find there was no significant difference in risk disclosure behaviour by corporations during the 2007-2008 period that was noticeably different from their behaviour before and after this period. In other words, there was disagreement as to whether improving corporate governance really impacted corporate performance.

The OECD (1999), in its Principles of Corporate Governance, was guided by the experiences of national initiatives of member countries. The outstanding work of the Cadbury Report, developed in the U.K., contributed principles that became reference points and international benchmarks that other OECD members could emulate. The typical approach used to promote corporate governance involved analysing each corporate governance mechanism to see what contribution it made to the achievement of governance.

Then, it was thought that the use of a corporate governance index would be an improvement over the previous format of looking at each corporate governance mechanism used. A corporate governance index (CGI) suggests that a better approach to measuring corporate governance is not to use individual corporate mechanisms, but rather to use a comprehensive structure of provisions of corporate governance codes. The rationale for using these codes is to determine how viable corporate governance is with respect to risk-

taking, credit ratings and cost of capital. The effectiveness of a corporate governance code depends on political, legal and cultural factors. This is the case because countries like the U.S. and the U.K. differ on many of these dimensions (Scheifer and Vishny, 1997; Batten, 2001; Licht, 2001; Roe, 2003; Licht, 2004; Prentice and Spence, 2006; Holm, and Zaman, 2012).

In their comprehensive study of corporate governance, Gompers et al. (2003) construct a Governance Index (G-Index) covering the level of shareholder rights for 1,500 U.S. firms during the 1990s. This G-Index was constructed with 24 provisions related to takeover defences and share shareholder rights. The findings reveal that organisations considered more democratic were evident from their stronger shareholder rights and higher firm value (Gompers et al., 2003). These firms were also more likely to have lower expenditures and fewer acquisitions (Gompers et al., 2003). Additionally, Gompers et al. (2004) reveal that these firms showed a positive and statistically significant relationship between Corporate Governance Index (G-Index) scores and stock returns. Gompers et al. (2003) posit that where shareholders' rights are weak and where democracy is lacking, agency conflicts occur, and these conflicts in turn lead over time to weak firm value. The G-Index is therefore viable to measure the quality of corporate governance of U.S. firms. The G-Index is widely accepted as a good way of measuring the quality of corporate governance in U.S. organisations. Various studies have been carried out using the G-Index.

However, corporate governance mechanisms and structure have been found to differ from country to country (Aguilera and Cuervo Cazorra, 2009; Filatotchev and Boyd, 2009). As well, country-specific factors were seen to determine corporate governance mechanisms to a great extent (Renders and Gaeremynck, 2006). Bauer et al. (2004) have been criticised for not considering corporate governance mechanisms in this light (Renders and Gaeremynck, 2006).

Consequently, it was found that standard corporate governance ratings, such as the ratings of Deminor were deficient in that they did not accurately represent legal systems, regulations or cultural and other differences in the corporate governance mechanisms used in different countries. The suggestion to be taken into consideration is that standard ratings are incapable of showing how provisions of corporate governance codes impact on corporate governance in different countries.

Botosan (1997) discovered that cross-country studies generally had a simple bias, as the companies used were generally ranked by analysts. (Botosan, 1997) This usually provides a bias in favour of larger companies. This means that smaller companies were often excluded from cross-country studies on corporate governance.

However, given the corporate governance index evidence, both the null and alternate hypotheses are tested. Therefore, the respective null hypothesis to be tested in this study is:

**H1a:** There is no statistically significant relationship between corporate governance index and risk-taking.

#### **4.2.2 CGI and credit ratings**

Basically, the objective here is to determine whether a firm's corporate governance has any bearing on its credit ratings, and whether a firm can achieve investment-grade ratings by improving its corporate governance. It was precisely this task that Alali et al. (2012) undertook in their study on corporate governance in organisations in the United States. Researchers maintained that a firm's credit rating is affected by the level of corporate governance that the firm displays (Ashbaugh-Skaife et al., 2006; Alali et al., 2012). When firms improved their corporate governance, this led to improvement in their investment grading (Alali et al., 2012). This study also revealed that when corporate governance

improved in smaller firms, the improvement in investment was greater than in larger firms (Alali et al., 2012).

The theories that are relevant to hypothesis H1b are legitimacy theory, institutional theory and agency theory. In looking at the relationship between corporate governance and credit rating, or between CGI and credit rating, Chen and Roberts (2010) sees the legitimacy of the company is important as it shows the social values that the organisation supports. Legitimacy theory is also important in credit rating and corporate governance index, because it deals with the safety and welfare of the employees, environmental issues, employees' pension plans, and has to show that it affects the values of the company. But Chen and Roberts (2010) also points to a link between legitimacy theory and institutional theory, for the reason that the company is seen as legitimate is because it has adopted the institutional forms. The CGI shows that the company is legitimate and has the right institutions in place (Chen & Roberts, 2010). Agency theory applies to the relationship between the owners and shareholders, and to the fact that corporate governance index and credit rating are positively related with the interests of the shareholders being given greater protection with good corporate governance. Agency theory is also relevant in showing the relationship between CGI and credit rating as corporate insiders are seen as agents, and their interests, according to agency theory, does not align with the interests of the other shareholders.

Better corporate governance was also found to be related to higher bond ratings, which led to the conclusion that with this being the case, then it would follow that the level of corporate governance in a firm should have an impact on how the likelihood of default would be assessed (Ashbaugh-Skaife et al., 2006). This, in turn, would ultimately have a bearing on the credit ratings that a firm would be given. According to Matthies (2013), despite the fact that credit ratings agencies claim that their ratings are merely opinions and not intended to serve as recommendations for buying, selling or holding, these opinions are taken seriously, in part because credit ratings agencies consider the default probability

of a firm in pronouncing their opinions (Matthies, 2013). According to Bo, Lensink and Murinde (2009), credit rating agencies look at the overall creditworthiness or default risk of a firm. Consequently, credit ratings are found to correlate negatively with future default rates. It follows that a firm with a higher credit rating is less likely to default than a firm with a lower credit rating (Matthies, 2013; Bo et al., 2009). Therefore, external lenders are more attracted to firms with high credit ratings.

In assessing the impact of corporate governance on credit ratings, Ashbaugh-Skaife et al. (2006) use four elements to represent corporate governance. These elements are the G-Index; the type of ownership structure of a firm; the degree of financial transparency; and the board's structure and processes of decision-making used in the organisation (Ashbaugh-Skaife et al., 2006). They find that firms with high performance, good cash flow and board independence from management had higher credit ratings (Ashbaugh-Skaife et al., 2006). However, it was found that firms with large numbers of block holders, where CEO power was excessive and where stockholder rights were strong, tended to have lower credit ratings.

John, Litov and Yeung (2008) show that corporate insiders' power has an impact on investment risk. This was based on the premise that corporate insiders could use the resources of the corporation to promote their self-interest, thereby threatening the firm's ability to maximise value (John et al., 2008). These authors contend that any situation that presents dominant insiders demonstrates a high positive correlation between corporate risk-taking and investor protection, and the more protected investors are, the more likely a firm to receive a higher credit rating (John et al., 2008).

Given the corporate governance index evidence, both the null and alternate hypotheses are tested. Therefore, the respective null hypothesis to be tested in this study is:



**H1b:** There is no statistically significant relationship between the corporate governance index and credit ratings.

#### **4.2.3 CGI and cost of capital**

The relationship between the cost of capital and CGI is dependent on resource theory, which shows that members of the board are important for securing resources. According to Abdullah & Valentine (2009), resource theory would apply because as it shows that cost of capital would be lower because of corporate governance. The questions that are asked are whether the company gives training to directors, but also whether the relationships between the directors constitute resources that are important to the success of the company. Chen and Roberts (2010) sees the board as serving an important function as it provides for greater relationships between directors and the community, and in this way allows for resources to flow from the community to the company. In this way, cost of capital is decreased because of the availability of resources made possible through greater corporate governance.

To examine the impact of corporate governance index on cost of capital, Arcot and Bruno (2007) built a corporate governance index based on eight provisions of the corporate governance code, using a sample of 245 U.K. non-financial firms in the FTSE 350 index from 1988 to 2003. They examine corporate performance, measured in terms of return on assets, and find that firms that shifted from compliance with the combined code outperformed others. Arcot and Bruno (2007) argue that superior performance is not guaranteed by merely adhering to generally accepted compliance with good corporate governance.

Al-Malkawi, Pillai and Bhatti (2014) developed an un-weighted corporate governance index for use with non-financial firms and applied it to firms listed in the Gulf Cooperation Council (GCC) countries. The index used thirty attributes covered under governance attributes, including disclosure, board effectiveness and shareholder rights. Using listings

on the stock exchange as evidence of good performance, these researchers found that companies that adhered to at least 69% of the corporate governance attributes tended to perform best (Al-Malkawi et al., 2014). These researchers suggest adherence to corporate governance leads to superior performance (Al-Malkawi et al., 2014).

Griffin, Kwok, Guedhami, Li and Shao (2013) construct an index of governance attributes using the database Governance Metrics International (GMI), using transparent disclosure, minority shareholder protection and corporate policy as proxies for corporate governance. Using the research on 4,500 firms in 50 countries covering the period between 2006 and 2011, Griffin et al. (2013) discovered a positive relationship between adherence to corporate governance principles and firm performance.

Given the corporate governance index evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H1c:** There is no statistically significant relationship between the corporate governance index and cost of capital.

### **4.3 Ownership structure variable and risk-taking, credit ratings and cost of capital**

#### **4.3.1 Introduction**

In this section, ownership structure is discussed in terms of risk-taking, credit ratings and cost of capital. The objective is to see how different types of ownership are implicated in risk-taking, credit ratings and cost of capital. The ownership types that are discussed are block ownership, institutional ownership and director ownership. We show how much risk-taking is involved in each of these ownership types, and how credit ratings and cost of capital are affected by block and institutional ownership.

Ownership structure was another element that was used to represent governance structure. Conflicts have often occurred in large publicly owned firms between the interests of stockholders and those of professional managers (Chen et al., 2009; Tran, 2014), based on agency theory. These conflicts emerge as stockholders want to maximise the profit of the firm over the long term, while also safeguarding their investments. On the other hand, managers want to ensure that they are managing the firm's business so as to ensure job security and the prestige of the firm, but they also want to increase their personal wealth. These two goals are usually at odds, as agency theory explains, because of the separation of ownership and control in these firms. The difference between the objectives of managers and those of stockholders leads to conflicts about the strategic direction that the organisation should take (Hail and Leuz, 2006).

Decision-making in strategic direction is usually the area where these conflicts occur, with R&D as the area of primary concern (Hail and Leuz, 2006). Stock holders often find a high-risk-high-return strategy attractive, because of its potentially positive effect on firm performance, and how it allows for reduced inherent risk through diversified investment portfolios (Lee and O'Neill, 2003). However, executives are likely to oppose this approach, because there are often high failure rates with innovative programs; such failure might be attributed to them, and these projects do not yield short-term returns (Lee and O'Neill, 2003). It is also likely that managers could work on long-term projects but leave the company before reaping the rewards. Therefore, projects that yield short-term results are usually more likely to be supported by executives.

#### **4.3.2 Block ownership and risk-taking, credit ratings and cost of capital**

##### **4.3.2.1 Block ownership and risk-taking**

Investors with over 5% equity in a firm are defined by the Securities and Exchange Commission (SEC) as block holders, because they may have large blocks of stocks in their portfolios (Barclay and Holderness, 1989). Having large block ownership in a firm

provides outsiders with concentrated control over management as well as private benefits. Block holders also have the privilege of using their size and power to obtain benefits that smaller investors do not have. For example, Barclay and Holderness (1989) discovered that block holders were able to purchase shares at premium prices over subsequent purchases by smaller investors. This practice causes firms to take precautions and repurchase stock that was priced above market price through transactions carried out by a dissident block holder. Some firms use this strategy to prevent a threat of takeover or to discourage a proxy fights by block holders (Kosnik, 1990).

Distinguishing between individual block holders and institutional investors is important, as individual block holders are not accountable to any particular client group. However, individual large block holders are often directors or officers of the firm (Holderness, 2003). Although there are notable differences between individual block holders and institutional investors, empirical research often ignores the differences, despite potential ramifications (Mehran, 1995; Shleifer and Vishny, 1997). Block holders could also be enterprises when they acquire a minority share of another firm, but this is usually not an accidental occurrence. It is often a well-calculated strategy that precedes a takeover bid or that may anticipate the impending sale of a firm.

In the relationship between block ownership and risk taking, Barclay and Holderness (1989) shows that block ownership allows for a group of shareholders to have control over the company, because they would be in a position to be the majority owners and could put pressure on management to receive benefits that the small shareholders would not be able to access. This would also have a negative impact on the firm performance, since the block owners would be looking out for their own interests at the expense of others. Block ownership would also allow these owners to purchase shares at premium prices, again to their own benefit and in their interests (Barclays and Holderness, 1989). This runs counter to the interests of the shareholders as a group, and according to Mehran (1995) and Shleifer and Vishny (1997) could allow other companies to purchase shares, therefore putting them

in a position where they could take over the existing company. Therefore, agency theory could be used to show how block ownership could increase risk taking. Stewardship theory could also be invoked here, as block ownership shows that the company does not have protection for its assets.

However, while these are general principles that affect block holders' influence over firm performance, the country in which the firm is located is of great significance. A country's legal system is important in influencing the nature of firm ownership of a firm and the governance structure used (Mallin et al., 2010). As highlighted by Mallin et al. (2010), countries with common law legal frameworks provide greater protection for their minority shareholders than countries where civil law regimes exist.

Shareholders therefore consider a country's legal system when deciding whether the firm they are contemplating investing in is a good choice. Shareholders are motivated to invest in countries where there is better shareholder protection, as this results in much capital being invested in the country. Countries like Germany, with legal systems based on civil law, offer less protection for minority shareholders. This leads to large institutional investors or family ownership being the major investors in these firms (Bebchuk, 1999). The rationale for this trend in countries like Germany is that large investors are provided with adequate protection. Potential minority investors would see countries with legal systems based on civil law as unattractive, since their rights would not be adequately protected. Therefore, as Honore, Munari and de La Potterie (2015) maintain, it is in the interest of shareholders to promote corporate governance. The rationale here is that when managers are given incentives to engage in R&D, this is in the interest of shareholders, particularly minority investors who, through information asymmetry, may not know what management is doing (Honore et al., 2015). Agency theory dictates that R&D is a means of protecting minority shareholders' interests.

However, it is important to point out that ownership by block holders could have either a beneficial or a detrimental effect on the overall performance of the firm. If block holders have large equity holdings, this would motivate and empower them to monitor the behaviour of management (Jensen, 1993). This would be advantageous to the long-term performance of the firm, as these large block holders would ensure that management does not steer the company in a strategic direction that does not maximise the performance of the firm.

However, it was found that block ownership could have a negative impact on credit risk, as such ownership may imperil minority shareholders and increase the risk-taking of the firm (Switzer and Wang, 2013). But it was also found that large block holders also increased the firm's credit risk, because large block holders may have the incentive as well as the power to influence management to follow their instructions, and so could extract benefits for these block holders. It is also possible for collusion to take place between management and large block holders, which would be detrimental to minority shareholders. On these grounds, credit rating agencies would see the possible influence of large block holders as a potential risk for the firm (Switzer and Wang, 2013).

Given the evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H2a:** There is no statistically significant relationship between block ownership and risk-taking.

#### 4.3.2.2 Block ownership and credit ratings

Block holders are seen as having the potential to negatively impact a firm's credit rating, but small block holders may be thought of as not having the potential for affecting credit ratings to any great extent. However, according to Ashbaugh-Skaife et al. (2006), the number of block holders that owned at least 5% ownership in a firm was negatively

associated with the overall credit ratings of a firm. One possible reason for this is that several small block holders could easily join forces and be considered the equivalent of a large block holder group. It was also revealed that lower credit ratings were positively associated with weaker shareholder rights in terms of takeovers by block holders. The theories that can be applied here are stewardship theory and agency theory, for good governance is expected to show the shareholders being protected, and to good governance preventing the CEO and management from promoting their interests and not those of the shareholders.

The quality of working capital accruals and the timeliness of earnings were also shown to be positively associated with credit ratings. Board independence, ownership of stock by board members and board expertise were all seen to have possible associations with firm governance and credit ratings (Ashbaugh-Skaife et al., 2006). However, the level of CEO power on the board was associated with negative credit ratings. Ashbaugh-Skaife et al. (2006) found that when a firm moves up on the governance scale, it doubles its probability of receiving an investment-grade credit ratings.

Block holders also present risk based on asymmetry problems when corporate governance principles are not followed. Agency theory shows that the separation of ownership and control brings to the fore the principal-agent problem. Block holders violate this theory, as they represent their interests at the expense of minor shareholders. As Matthies et al. (2013) observe, agency risk and information risk result, thereby weakening violating governance and having a negative impact on credit rating.

Given the evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H2b:** There is no statistically significant relationship between block ownership and credit ratings.

#### 4.3.2.3 Block ownership and cost of capital

The theories that explain the relation between board diversity and cost of capital are agency and resource dependence theories. Block ownership is seen as having a negative impact on cost of capital. According to Tran (2014), blockholders are also founding families that have control over the company, for they are in the position where they could terminate management. Blockholders could also hold information and not disclose it in a timely fashion to shareholders (Ntim et al., 2014). Therefore, investors are more likely to see these companies as being risky and so are less likely to invest in these companies. This means that the cost of capital for these firms would be higher than for other companies, because investors believe that the risks are higher. According to Shleifer et al. (1997), this can have the effect of pushing agency costs up. Agency theory could apply here, since this is a case where management has control and would protect their interests rather than the interests of shareholders. Resource dependence theory is also applicable in explaining the relationship between block ownership and cost of capital, as block owners are seen as having resources that could be available to the companies.

Tran (2014) investigates the extent to which corporate governance could have an effect on the cost of debt capital, the capital that a company gets through loans, and equity capital, the money that a company invests. Studying the cost of borrowing and the cost of capital companies invest in firms listed on the German exchange, Tran (2014) discovered that when block holders within the firm are other firms' managers or founding-family members, they are less likely to invest their own capital. This may be related to the fact that block ownership is perceived as a credit risk and therefore a threat to the creditworthiness of the firm. In their study of block ownership in firms, Ntim et al. (2013) discovered that firms that had an increase in block ownership tended to reduce their voluntary disclosure of corporate governance. This may possibly be because these owners wanted more up-to-date information on the performance of their block ownership and so substituted block ownership disclosure for corporate governance disclosure. The implication from this study



is that block ownership was using this disclosure as a means of achieving greater managerial monitoring (Ntim et al., 2013).

Further studies show that shareholders of various sizes have an interest in monitoring the behaviour of management. For example, it was found that dispersed shareholders had an incentive for wanting to monitor the behaviour of management. Large investors similarly had a large enough interest and stake in the firm to be prepared to devote private funds to monitoring the behaviour of management (Berle et al., 1932). Block holders were seen to have an advantage over investors, in that block holders have the ability to coordinate their actions more easily. This ease of coordination was facilitated by the voting powers of block holders, and was not split among a highly segmented group of shareholders, as in the case of large investors (Shleifer et al., 1997). It was further discovered that if managers acted repeatedly against the interests of large investors, they would find that they would be quickly replaced (Shleifer et al., 1997). Consequently, large block holders were shown to differ from small shareholders in that the large block holders had the incentive as well as the power to decrease agency costs.

The effects that different block holders can have on a firm's performance differ because of the divergent incentives and expertise they can wield (Anderson and Reeb, 2004). U.S. block holders which were founding family members were found to have a lower cost of debt financing than block holders that were not family firms (Anderson and Reeb, 2004). According to Anderson and Reeb (2004), this could be attributed to long-term family commitment. It was further conjectured that families usually consider their firms an asset to be passed on to future generations rather than an undertaking to be consumed during one lifetime.

Creditors also consider financial institutions, including banks, as an ownership group that was a good risk (Pindado et al., 2013). The rationale for this is that financial institutions

often have mutually aligned interests, which may be considered advantageous to creditors (Pindado et al., 2013).

In contrast to the findings that see founding family firms as favourable to creditors, Shleifer and Summers (1988) and Burkart et al. (2003) did not find such favourable results with respect to family firms. These researchers found that such firms tend to act on their own behalf, adversely affecting employee productivity (Shleifer and Summers, 1988; Burkart et al., 2003). It was further shown that block holders use their power to secure private benefits that are not available to minority shareholders and creditors (Barclay and Holderness, 1989).

As pointed out, if this concentrated ownership enables block holders to obtain private benefits from these sources, then block holders can be seen to have a positive effect on the cost of capital (Burkhart et al., 2003; Matthies et al., 2013). In fact, Matthies et al. (2013) show that block holders holding more than 5% are able to exercise undue influence and therefore experience private benefits that are not available to other shareholders. Consequently, using the private benefits hypothesis, block holders, with their concentrated ownership, can be seen to have a negative impact on credit ratings (Matthies et al., 2013).

Given the evidence on block ownership, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H2c:**        There is no statistically significant relationship between block ownership and cost of capital.

### **4.3.3 Institutional ownership and risk-taking, credit ratings and cost of capital**

#### **4.3.3.1 Institutional ownership and risk-taking**

Institutional ownership exists when institutions invest in the shares of an association. Institutional investment, which includes insurance companies, pension funds and banks, which are institutions with strong fiduciary responsibilities. This explains why many institutional investors tend to equip their portfolios with stocks that are considered sound or reasonable investments (Del Guercio, 1996). It is therefore highly recommended that institutional investors forego investing in organisations that do not pay dividends, because stocks that are considered “prudent” tend to have a history of good, solid dividend payments (Grinstein and Michaely, 2005). Hutchinson, Seamer and Chapple (2015) pointed out from their study that the ability of the institutional owners to influence management determines how much the owners are able to monitor the firm-specific risk, management policy with respect to risk, and the performance of the firms. Therefore agency and stewardship theories are two theories that can be used to discuss this finding about the relationship between institutional ownership and risk taking.

Institutions with strong fiduciary responsibilities are advised to stay away from organisations that are poorly governed, because their interests would not be protected, including risk of expropriation. A hint that organisations may be poorly governed is that they may not be earning fair rates of return on their investments. This could also put invested capital at risk. Because of this, institutional investors, because of their responsibilities to their clients, have a strong motivation to choose stocks of organisations that have good governance. The rationale for this is that firms that have a good governance structure also required less monitoring of their management. Therefore, institutional investors tend to choose organisations with better governance mechanisms, rather than selecting organisations that have poor governance mechanisms.

There are several advantages to choosing organisations that have good governance structures. For example, these organisations tend to enhance transparency in terms of financial and operational matters. This has the effect of reducing the asymmetry of information between insiders and outside investors. In other words, there is greater sharing of information between insiders and other stakeholders (Chung, Elder, and Kim, 2010). In their study, these researchers found that organisations that had better corporate governance tended to show higher stock market liquidity as well as lower trading costs (Chung et al, 2010).

The existence of corporate governance is based on the premise the reason that dispersed shareholders demand that governance mechanisms be in place is so that no one shareholder needs to undertake on his own individual monitoring of management. But it follows that as a shareholder invests more heavily in a firm, that investor has greater incentives to want to monitor management. As Tran (2014) contends, institutional investors, because of their fiduciary responsibilities to their clients, reveal greater incentives to want to monitor management and policies of a firm. The reason that institutional investors want to carry out this monitoring is because of the large investment they make on behalf of their clients. It is understandable that institutional investors want to know what management is doing, because they have voting power to replace management, if they believe management is ineffective.

In this respect, institutional investors can be seen as providing effective monitoring of management. This, in turn, reduces opportunistic behaviour on the part of management and has the further effect of being of benefit to all shareholders. This benefit is realised in reduction in agency costs as well as in lower cost of equity.

Despite benefits from institutional investors being actively involved in monitoring management, institutional investors may be unwilling to put out the financial resources for monitoring, when they realise that they are not the only ones that would benefit from such

monitoring. The fact that monitoring is costly may therefore discourage institutional investors from incurring the costs for monitoring when other shareholders would also be benefitting from a service for which they did not pay.

However, given the ownership structure- institutional ownership evidence, both the null and alternate hypotheses are tested. Therefore, the respective null hypothesis to be tested in this study is that:

**H3a:** There is no statistically significant relationship between the institutional ownership and risk-taking

#### 4.3.3.2 Institutional ownership and credit ratings

Institutional owners and outside board members have been discussed in terms of their roles in corporate governance. While many research studies have shown that institutional owners and external directors monitor the actions of management and take measures to protect shareholders, other research studies have failed to show any effect of these corporate governance mechanisms on corporate performance. In terms of the relationship between institutional owners and credit ratings, previous research shows that institutional owners usually invest in companies with high bond yields, but that it is possible that they could be involved with lower ratings and higher bond yields (Bhojraj and Sengupta, 2003). The two theories that could be applied here are agency theory and legitimacy theory. But as Bhojraj and Sengupta (2003) point out, there are those who believe that institutional owners may be seen as promoting greater monitoring of management, but on the other hand, because they are institutional owners, this monitoring may not necessarily take place. Legitimacy theory may also apply, or as Elbannan (2009) shows it is thought that companies that have institutional owners may generally invest in companies that have low bond yields.

Bhojraj and Sengupta (2003) conducted a study with a sample of 1,005 industrial bond issues collected from the Warga Fixed Income Database from 1991 to 1996. They found that firms with more institutional ownership had higher bond ratings and lower bond yields (Bhojraj and Sengupta, 2003). Bhojraj and Sengupta (2003) discovered that when institutional ownership becomes concentrated, it leads to lower ratings and higher yields for firms. Further, they found that firms with more outside directors on the board showed higher ratings and lower bond yields (Bhojraj and Sengupta, 2003).

Bhojraj and Sengupta (2003) were consistent with their findings that the monitoring of management by institutional owners and outside directors contributes to a reduction in management opportunism and an improvement in firm value. Their findings are also shown to be consistent with an alternative explanation. The argument can also be made that there is a positive association between institutional ownership and bond ratings, and a negative association between institutional ownership and bond yields. This association comes from institutions' preference for investing in higher rated bonds. Controlling for the potential change that institutional owners make based on the relationship between institutional ownership and bond yields and ratings, Bhojraj and Sengupta (2003) apply a simultaneous equations approach. In this approach, they show that institutional ownership influences bond yields and ratings, but is also influenced by bond yields and ratings. Consequently, these findings also suggest that institutions invest more in companies that have higher and lower bond ratings and yields respectively. However, regardless of the explanation, institutional ownership continues to be statistically significant in determining bond ratings and yields.

Given the institutional ownership evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H3b:** There is no statistically significant relationship between institutional ownership and credit ratings.

#### 4.3.3.3 Institutional ownership and cost of capital

A review of studies on the relationship between institutional ownership and credit ratings shows that there is no statistically positive relationship. For example, it was found that companies with higher levels of institutional ownership in South Africa were more likely to disclose voluntarily as part of their corporate governance (Ntim et al., 2013). Also, in Germany, the corporate governance system was shown to be very different from other governance systems, for example the Anglo-American governance system (Elston, 2003). In fact, the governance system in German public companies consists of a two-tier board, which is made up of a management board, or Vorstand, and a supervisory board, or Aufsichtsrat (Elston, 2003). Institutional ownership was seen as not having an effect on German companies, because creditors were protected more than shareholders (Elston, 2003). This can be seen in the fact that banks have a great deal of control over firms, more than one would expect between traditional creditors and lenders. According to Elston (2003), banks therefore have control over a firm in three major ways. First, a bank has voting rights that are associated with its share in a company's stock. Second, the bank is very much involved in the supervision of the operation of the firm, since it has representatives who sit on the supervisory board, and is active in its lending and underwriting to the company. Third, through proxy voting rules, banks can vote for their depositors (Elston, 2003). The theory that can be used to explain this is the stewardship theory, where managers in the organisation are supposed to look out for the shareholders.

According to Dittman et al. (2010), banks have the power to select managers to sit on corporate boards, regardless of the amount of equity the bank has in the firm. The power of the bank relative to the company shows there is no significant relationship between institutional ownership and credit ratings. Bhojraj and Sengupta (2003) also find that costs of debt of U.S. firms are negatively associated with greater institutional ownership and stronger outside control of the board.

A firm's level of risk was seen to affect the firm's cost of credit. This was likely to reveal yearly changes taking place in the firm's governance, while showing that there was not much interference from outside factors that would affect the future profitability of the firm. To support this, Ashbaugh-Skaife et al. (2004) show a significant association between a firm's governance and the cost of equity capital that firms experience. These researchers found that concentrated ownership, measured by the number of shares that held by institutions, as well as the number of block holders with 5% or more of stock in the firm, influence the cost of equity for a firm (Ashbaugh-Skaife et al., 2004).

Further, Pham et al. (2012) analyse the relationship between governance and the cost of capital. In examining a panel data set consisting of data for Australian firms on governance and cost of capital for a ten-year period, Pham et al. (2012) discovered that when firms show that they have stronger governance features, for example board independence, some institutional block holders, and some insider ownership, this contributes to a decline in the cost of capital, as well as in higher value for the firm. They also find that cost of capital decreases with higher insider ownership, but this was only observed up to a certain level of ownership (Pham et al., 2012).

Several studies emphasise the fact that strong governance has the effect of limiting divergence of cash flows. In contrast, Pham et al. (2012) argue that strong governance characteristics lead to a reduction in the cost of capital. The explanation for this is that investors recognise that their firm's level of risk influences its cost of capital (Pham et al., 2012). It was shown that several potential risks exist when a firm does not put enough emphasis on strengthening its corporate governance. For example, it is possible that insiders may decide not to pursue value maximising strategies, as external monitoring may become more difficult. Instead, insiders may opt for strategies that further entrench their positions. Also, insiders may engage in excessive borrowing and expansion aimed at empire building, which are typically self-serving and which may expose the firm to risks in the marketplace. All of these factors contribute to higher costs of capital.



Given the institutional ownership evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H3c:** There is no statistically significant relationship between institutional ownership and cost of capital.

#### **4.3.4 Director ownership and risk-taking, credit ratings and cost of capital**

##### **4.3.4.1 Director ownership and risk-taking**

According to agency theory, boards of directors have the responsibility to monitor the activities of management. However, La Porta et al. (1999) point out that ownership structure in many countries outside of the U.S. consists of directors owning the majority of stock. It was confirmed that this is largely the case in Hong Kong, where members of founding families are directors and executives of their firms and own the majority of the stock (Ho and Wong, 2001; Chen and Jaggi, 2000).

Theoretically, when managers own most of the firm's stocks, this can accentuate the free rider issue, in that there is less monitoring of management, and a risk of takeover by management (Shleifer and Vishny, 1997). It is also possible that the interests of management and shareholders would coincide (Jensen and Meckling, 1976). When the interests of management and shareholders are more closely aligned, the need for motivating plans in director-controlled firms is greatly decreased.

Several studies offer an explanation for the role of directors and management entrenchment (Morck et al., 1988; McConnell and Servaes, 1990; Short et al., 1999). For example, the concept of management entrenchment is evident when management has gained a great deal of power that makes it possible for managers to promote their own interests. Management entrenchment assumes that when directors hold a small percentage of shares in their firm, outside and inside factors serve to align the interests of managers with the best interests of

shareholders. However, when directors hold a large percentage of shares, they can make decisions to protect their interests against those of their shareholders. In such situations, directors find it in their interest not to maximise the wealth of shareholders. This is because directors can ensure they obtain higher salaries, compensation and bonuses (Morck et al., 1988; McConnell and Servaes, 1990). With director entrenchment it can be shown that director shareholding, or with directors owning a large part of the firm's shares could be detrimental to corporate value. Also, it was shown that putting the assumptions of the alignment of interests between directors and shareholders and director entrenchment together does not lead show a positive relationship between director shareholdings and corporate value (Morck et al., 1988; McConnell and Servaes, 1990). It would follow that low ownership of stock by directors is positively related to good corporate value.

In examining the relationship between director shareholdings and Tobin's Q for U.S. firms between 1976 and 1986, McConnell and Servaes (1990) discovered that the relationship was curvilinear. According to these researchers, the relationship between these two groups continued to be positive until the level of director shareholdings reached between 40% and 50%. The relationship became negative after this level of director shareholding was reached (McConnell and Servaes, 1990). Similar evidence was found among U.K. firms to support the curvilinear relationships of direct shareholdings (Hermalin and Weisbach, 1991). Further studies attest to this.

Between 1988 and 1992, Short and Keasey (1999) examined the relationship between director shareholdings and Tobin's Q in 225 U.K. firms, the fair market value for the stocks. Their findings reveal that it took a much higher level of director ownership for management to become entrenched in the U.K. than in the U.S. Using return on assets as a proxy for corporate governance, Weir and Laing (2000) show a positive relationship between director ownership and return on assets.

Hillier, linn and McColgan (2005) also reveal a curvilinear relationship between director ownership and firm value. Their findings reveal that at director ownership of 7%, Tobin's Q increases, but then decreases when director ownership reaches 26%. In contrast to this finding, looking at mandatory disclosure as an aspect of corporate governance, Owusu-Ansah (1998) shows no curvilinear relationship, as seen in some studies in the U.S. and U.K. Instead, this researcher shows that in Zimbabwean listed firms in 1994, there was a positive relationship between director shareholdings and mandatory disclosure at all levels (Owusu-Ansah, 1998).

Further, Fama and Jensen (1983) show that insider or management ownership can give rise to two behaviours. On the one hand, there could be convergence or alignment of interests of insider ownership with shareholders; on the other hand, there could be an entrenchment effect (Fama and Jensen, 1983). Earlier studies assert that when there is an increase in ownership among directors or managers, owners tend to use company resources less, thereby showing a convergence or alignment of their interests with the interests of shareholders. In these situations, owners and managers agree on how the firm is managed, supporting the hypothesis of alignment of interests between these two groups (Fama and Jensen, 1983).

However, these researchers also argue that managers have a natural tendency to use company resources for their own interests, as suggested by agency theory, thereby leading to conflicts of interest with external shareholders (Fama and Jensen, 1983). But according to Fama and Jensen (1983), when insider ownership increases, conflicts decrease, due to the tendency to convergence of their interests.

Fama and Jensen (1983) also argue that when there are major increases in insider ownership, this tends to increase costs. According to this argument, even at low levels of insider ownership, managers are induced by market discipline to seek to maximise value, even when there are few personal incentives to do so (Fama and Jensen, 1983). Conversely,

Fama and Jensen (1983) also argue that when insiders hold a large part of the capital in a firm, they have the advantage of greater voting rights, which means they can look after their interests and still not maximise value. They can achieve this without compromising their jobs or their remuneration (Fama and Jensen, 1983).

Given the director ownership evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H4a:** There is no statistically significant relationship between director ownership and risk-taking.

#### 4.3.4.2 Director ownership and credit ratings

The relationship between director owner and credit ratings for as Ho and Wong (2001) point out some director also serve as owners, because they own a large part of the stock of the companies that they direct, as is commonplace in Japan. This is a situation where these companies face severe threats of take over from the directors (Ho & Wong, 2001). The effect of this is to have a negative impact on credit ratings. This shows that agency theory is an appropriate theory to discuss the relationship between director owner and credit ratings. Researchers have considered the possible impact of agency conflicts on credit ratings. Ashbaugh-Skaife et al. (2006) investigate the relationship between governance mechanisms to address agency conflict and credit ratings. They examine how potential conflicts between shareholders and other stakeholders could be heightened or lessened through governance structures (Ashbaugh-Skaife et al., 2006). It was shown that the interests of shareholders and stakeholders often diverge on issues related to firm performance and the investment policies of management (Fitch Rating, 2004). Ashbaugh-Skaife et al. (2006) show that firms with more shareholder rights usually have lower credit ratings, leading to higher costs of borrowing. Gompers et al. (2003) had different findings: they show that firms with greater shareholder rights had greater share values and lower costs of capital.

Given the director ownership evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H4b:** There is no statistically significant relationship between director ownership and credit ratings.

#### 4.3.4.3 Director ownership and cost of capital

The cost of capital is shown to increase when a company becomes more exposed to market-wide risks. When managers undertake excessive borrowing as a means to promote empire-building expansions, the company's cost of capital has the potential to increase, as this action increases its risk. This is likely to occur when there is inadequate monitoring of insiders (Pham et al., 2012). Stewardship theory appears to be relevant in showing how director owners could influence cost of capital as they are seen or not seen as looking after the interests of shareholders.

Also, the cost of capital is shown to increase for poorly governed companies, because the lack of transparency leads to higher costs. The cost of capital is shown to decrease when insider ownership increases, but this only happens up to a certain level of ownership (Pham et al., 2012). Amihud and Lev (1981) and Belkhir (2006) take the position that, at times, managers that can control board decisions focus on reducing risks more than managers that own shares. This may occur when managers aim to maximise job security (Amihud and Lev, 1981; Belkhir, 2006). Laeven and Levine (2009) explain this by pointing out that as managers accumulate influence and control of the board, they are less likely to undertake risky projects.

Hermalin and Weisbach (1998) suggest that some boards of directors may be less likely to monitor management if management has many bargaining rights. The implication here is that with more insiders on a board, it is less likely that there will be stringent monitoring of management. This is poor governance, which could lead to managers undertaking riskier

investment, which may potentially benefit them greatly. Empirical studies have shown that the more insiders there are on a board, the more risk the firm is likely to face (Boone et al., 2007). In other words, having more insiders on a board is likely to lead to an increase in the cost of capital.

Given the director ownership evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is that:

**H4c:** There is no statistically significant relationship between director ownership and cost of capital.

#### **4.4 Board structure variables and risk-taking, credit ratings and cost of capital**

##### **4.4.1 Introduction**

This section deals with board structures and their impact on risk-taking, credit ratings and cost of capital. We deal specifically with board size, independent directors, board diversity and frequency of meetings. These variables are all examined in terms of how they affect risk-taking, credit ratings and cost of capital.

Because of agency theory, corporations need to have internal control over management in order to safeguard the interests of shareholders. This is achieved through the board of directors, which is generally made up of different committees. These committees are tasked with monitoring different aspects of management's behaviour. Since managers are agents of the owners, it is the owners that appoint board members. Board members may include members of management as well as outside members. According to best practices, there should be more outside members on the board, who are independent of the influence of management (Radebaugh et al., 2006).

The purpose of corporate governance is to reduce agency conflicts and ensure that managers focus on the best interests of shareholders (Jensen and Meckling, 1976; Netter et al., 2009). Boards of directors are considered the most important part of corporate governance, with

their major responsibilities being to monitor management's behaviour and safeguard the interests of shareholders (Lipton and Lorsch, 1992; John and Senbet, 1998; Filatotchev and Boyd, 2009). Therefore, boards of directors serve to advise and supervise managers, to help in the setting of the firm's strategic direction, and to ensure that resources are used efficiently and effectively (Demsetz and Lehn, 1985; Brennan, 2006). In order for boards of directors to effectively carry out their responsibilities, certain characteristics have been identified as important for board performance. Some of the more significant characteristics identified are independence of board directors, size of the board and the experience of board directors (Yermack, 1996; Baranchuk and Dybvig, 2009).

An examination of the independence of board directors can be appreciated by looking at how different boards attempt to achieve this. There are two main models of boards of directors: the German-Japanese model and the Anglo-American model. The German-Japanese model has two tiers, and is dominated by insiders. This model consists of a supervisory board, which is made up of non-executive board members and carries out the monitoring function, and a management board, which is made up of executive board members (Davidson, 1994). The rationale for this division is to separate the monitoring and decision-making functions of the board, thereby avoiding conflicts of interest between owners and managers (Dahya, Karbhari and Xiao, 2002). This model is used in Germany and Japan.

The Anglo-American model is a one-tier board, often referred to as dominated by outsiders (Dahya et al., 2002). The major characteristic of the Anglo-American model is that the executive and non-executive board members work together, with conflicts of interest and power clearly realised in this model (Dahya et al., 2002). This model is used in the U.K. and the United States, and in many other countries because of the importance of the U.K. and the U.S. worldwide (Davidson, 1994; Solomon and Solomon, 2004).

There has been much debate over the impact that the board model has on firm performance, with more recent debate on how the structure of the board affects performance (Jensen,

1993). Researchers have examined theoretical frameworks within which to study the roles expected of board directors and the impact that board directors have on the firm (Corbetta and Salvato, 2004). Both agency theory and stewardship theory can be used to describe the relationships between boards and management (Anderson and Reeb, 2004). However, Corbett and Salvato (2004) do not believe that an either/or theoretical framework should be used, but that an effort should be made to integrate these theories into explanations to understand the different roles that directors must play (Corbetta and Salvato, 2004).

#### **4.4.2 Board size and risk-taking, credit ratings and cost of capital**

##### **4.4.2.1 Board size and risk-taking**

Corporate governance is exemplified by having an effective board of directors as an important governance mechanism. Board effectiveness can be seen in how well the board carries out its role of ensuring that managers provide quality information to shareholders (Eisenberg et al., 1998). An effective board must therefore be able to monitor management and at the same time ensure that the company is being strategic (Davidson et al., 1998, Klein 1998).

The composition of the board is also critical, as it contributes to the capabilities of the board. According to Solomon (2007), a board should be made up of professionals drawn from diverse and complementary backgrounds and areas of expertise. However, the size of the board is also critical; a large board of directors is believed to be undesirable according to agency theory (Lipton and Lorsch, 1992; Sonnenfeld, 2002). According to these authors, a smaller board is seen as more effective and better able to motivate management (Lipton and Lorsch, 1992; Sonnenfeld, 2002). The rationale for not having a large board is that a large board requires remuneration and bonuses, thus increasing the cost of having a board. Also, the chief executive of a company can dominate a large board because of the need for coordination among many board directors (Jensen, 1993). To pre-empt this negative aspect of board size, Lipton and Lorsch (1992) recommend limiting the number of directors and



thereby preventing social loafing and free riding, as some directors would not put out the effort that they could have done in a smaller group.

In considering the relationship between board size and risk-taking, Haniffa and Hudaib (2006) sees resource theory as the basis for this relationship. The rationale is that when there is a board, it contributes by providing resources that are good for the company. On the other hand, if the board is small, it cannot be expected to provide many resources. However, a large board could be considered as providing more value to the company, as John and Senbet, and Yawson (2006) explain. Agency theory could also be used here for it can be pointed out that it is the board to monitor management and ensure that the interests of the shareholders are promoted. However, one would argue that possibly a large board would mean that there would be more people to monitor management, and prevent risk-taking on the part of management.

Being very specific, Lipton and Lorsch (1992) identify an optimal board size as no more than nine directors. These researchers also argue that a maximum number of directors should be ten (Lipton and Lorsch, 1992). The drawbacks to having more directors include slow progress in decision-making, which would not be compensated for by any increased monitoring that could result (Lipton and Lorsch, 1992). Also, it was pointed out that the ability of larger boards to effectively monitor managers is eroded because of poor communication and poor decision-making (Kajola, 2008).

Furthermore, a smaller board could make board discussions more productive, as all directors would have the opportunity to take part (Lipton and Lorsch, 1992). Yawson (2006) suggests that smaller boards are more effective in making decisions. Also, smaller boards are able to monitor performance more carefully and make decisions about personnel performance more effectively. If there are declines in performance, smaller boards would more readily observe and discuss this, and make more effective and time-sensitive decisions.

By contrast, suggestions have been made for the desirability of a large board. The argument put forward is that a large board would contribute more to a company's value (John and Senbet, 1998; Yawson, 2006). This is because a firm would benefit from having access to more skills and experience on a large board (Haniffa and Hudaib, 2006).

It was also thought that a large board would provide more contact with the business community, which could reduce business risk and reduce costs related to funds and raw materials (Pearce II and Zahra, 1992; Goodstein et al., 1994). This is in keeping with resource dependency theory, as firms are seen as benefitting from the expertise and skills of board directors (Switzer and Wang, 2013).

Also making the case for a large board, Yawson (2006) contends that a firm may find more experience in a large board that could facilitate better decision-making based on worthy advice. Finally, John and Senbet (1998) indicate that a large board could provide better monitoring of managers. The reasoning here is that a large number of directors may have the experience to carry out monitoring functions more efficiently (Kiel and Nicholson, 2003).

Board size was also seen to be effective in other areas of governance. Ntim et al. (2012) show that a large board leads to more disclosure, one aspect of good governance. But Kajola (2008) confirms that a smaller board is more effective in discharging board duties. Technical abilities would likely be increased with more board members, but there is disagreement among reports on the importance of insiders and outsiders (Kajola, 2008). On the one hand, Kajola (2008) observes that in some cases boards with more outside directors perform better, while in other cases the opposite is true.

The success of firms is dependent on risk-taking, indicating that all firms must take some degree of risk. However, some firms will fail primarily because they undertake too many risky projects. Because of agency theory and also stewardship theory, many managers will

refrain from undertaking risky projects, and some would also not take on risks for fear of jeopardising their personal welfare (Fama, 1983; Holmstrom, 1999).

In investigating the relationship between board size and risk-taking, Wang (2012) looks at how different sizes of boards affect a company's risk-taking. For example, Wang (2012) points out that smaller boards give their CEOs greater incentives to take on risk, whereas larger boards do not provide the same kinds of incentives that make CEOs take on more risk. The explanation that Wang (2012) provides is that smaller boards support CEOs to make risky investments in the hope of better-than-average returns. These companies also have low leverage and a high future risk (Wang, 2012). Nakano and Nguyen's (2012) study of Japanese companies reveals that companies with larger boards engage in lower risk-taking and consequently have fewer bankruptcies. While Japan and the U.S. are similar in the effect of board size on company risk-taking, it is not as marked in Japan as it is in the U.S. (Nakano and Nguyen, 2012). This is because Japanese firms have a low tendency to take risks (Nakano and Nguyen, 2012). These researchers also show that the effect of board size is not as important for firms with several opportunities to invest as it is for firms with very few opportunities (Nakano and Nguyen, 2012). They show that board size varies, and that a larger board would not necessarily decide on low-risk projects, especially if the firm has many opportunities for investment (Nakano and Nguyen, 2012).

Given the board size evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H5a:** There is no statistically significant relationship between board size and risk-taking.

#### 4.4.2.2 Board size and credit ratings

Ashbaugh-Skaife et al. (2006) question whether board size and composition has an effect on credit rating, specifically, whether a mix of inside, outside and affiliated directors could

impact how creditworthy companies are assessed. These researchers found support for the position that better board structure and processes contribute to boards being better able to monitor management more efficiently and thus carry out the board's responsibility of protecting the interests of all stakeholders (Ashbaugh-Skaife et al., 2006). It was found that the more boards were able to provide independent monitoring of management, the better their credit rating.

According to Lipton and Lorsch (1992), when a board is large, there could be too many people to make the discussion possible. In other words, they see board size as a factor that could hamper the board in its work. (Lipton & Lorsch, 1992). But it can also be argued that more board members mean more opportunity for monitoring management and looking after the interests of the owners, the shareholders. This is supported by agency theory. But stewardship theory could also apply, for as Lipton and Lorsch (1992) explain, the board is also seen as looking after the interests of stakeholders. The relationship between board size and credit rating will depend on whether the size of the board promotes greater benefit or disadvantage.

Bhojraj and Sengupta's (2003) findings were supported by Ashbaugh-Skaife et al. (2006). Bhojraj and Sengupta (2003) note that companies with more independent outside board directors also had better bond ratings. When boards had more knowledgeable professionals, their companies had higher credit ratings (Bhojraj and Sengupta, 2003).

According to Wang (2012), smaller boards are more willing than large boards to support risky policies that are associated with shareholder interests. This study shows that smaller boards offer managers greater incentives to invest in risky assets; however, while small boards tend to support riskier investments, they also tend to restrict aggressive debt policies (Wang, 2012). Larger boards focus on improving accountability, and showed lower bond yields; they were also seen as supporting less risky investment prospects (Wang 2012).

In terms of future risk, Wang (2012) also shows that board size has no effect on future risk. However, a matter of concern was that large firms could have large boards and many investment opportunities (Wang, 2012). Large firms may appear less risky because they have used their varying investments. But his studies show that stock volatility and cash flow volatility have a negative relation to current board size (Wang, 2012).

Given the board size evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H5b:** There is no statistically significant relationship between board size and credit ratings.

#### 4.4.2.3 Board size and cost of capital

Boards of directors serve to provide monitoring of management, in keeping with agency theory. In large firms, board committees are established to monitor different management functions. Boards usually create subcommittees to carry out specific roles. The board, in overseeing the accounting process in a large firm, would delegate this role to the audit subcommittee (Klein, 2002). This subcommittee takes on the responsibility of recommending external auditors to the full board and has the responsibility of assessing the soundness and quality of the firm's internal accounting process, as well as the control processes of the internal accounting system (Klein, 2002). The audit committee also has another important role, namely that of ensuring that external auditors maintain independence from senior management (Klein, 2002). In order to maintain the independence of directors, major stock exchanges have established regulations that require a minimum of three independent directors to serve on an audit committee (Klein, 2002). This is to ensure that independence is not compromised on any level. Board size has also been found to be related to effective monitoring, with smaller boards said to be more cohesive and better able to monitor firms more effectively and create higher firm value

(Pham et al., 2012). But it is shown that more effective monitoring and higher firm value are also related to lower cost of capital (Pham et al., 2012).

Resource dependence theory can be used to explain the relationship between board size and the cost of capital. The rationale for this is based on the idea, as Haniffa and Hudaib (2006) put forward, namely, that a board represents a group of experts. A large board would necessarily be seen as a large group of experts that could carry out the roles of a board. But as John and Senbert, and Yawson (2006) point out, a large board provides a wide array of resources for the company. While there are more resources for the company because of the many board members, there is more monitoring and expertise provide to the company as well.

Very little has been written about the relationship between board size and cost of debt. According to Anderson and Reeb (2004), board size was found to have no impact on the cost of debt financing. Larger boards can carry out greater monitoring of management. Piot and Missonier-Piera (2007) find no relationship between board size and the cost of borrowing. In contrast, using 1,500 S&P companies, Upadhyay and Sriram (2011) find that board size affects the cost of capital, with Ashbaugh-Skaife et al. (2006) confirming a similar finding. Further, Ashbaugh-Skaife et al. (2006) discovered that an additional member to a median board reduced the cost of capital by eight base points.

Given the board size evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H5c:** There is no statistically significant relationship between board size and cost of capital.

### **4.4.3 Independent directors and risk-taking, credit ratings and cost of capital**

#### **4.4.3.1 Independent directors and risk-taking**

The existence of independent board members on companies' boards has been identified as the bastion of good and effective corporate governance. The U.K. Cadbury Code (1992) and the OECD Principles of Corporate Governance (2004) both put forward the principle that independent board members are important for good and effective corporate governance. For clarification, independent board members, as Spira (1999) explains, have no connection with the company; such connection may tarnish their ability to exercise independent judgment. When the concept of independent board members was introduced by the OECD (2004), it was intended as independence from all dominant shareholders. The understanding was that independence also extended to board members not acting as representatives of, and not having close business ties with, dominant shareholders. As Aguilera (2005) points out, it was necessary to have several independent board members to minimise the influence of the owners. This practice was also seen as improving transparency (Aguilera, 2005).

Good governance, as established by the OECD (2004), recommends more independent members on the board, because this promotes reliability and transparency. More independent directors can also mean more meaningful decision-making, as these independent directors can bring more objectivity to the evaluation of the performance both of the board and management (OECD, 2004). Independent directors may be most useful in "areas where the interests of management, the company and its shareholders may diverge such as executive remuneration, succession planning, changes of corporate control, take-over defences, large acquisitions and the audit function" (OECD, 2004).

The relationship between independent director and risk taking can be defined by agency theory and resource dependence theory. According to Lai and Chen (2014) point out that

research has shown that independent directors and shareholders can be seen to have different interests, so that they are actually in conflict with each other. Independent directors are seen as holding the position of looking after the interests of their own interests, and can be seen to have similar interests with management. As such, independent directors would seem to represent risk for the shareholders and the interests of the shareholders. In this case, agency theory would explain this relationship. However, independent directors could be seen as having the same expertise as board members, which means that they would be looking after the interests of the shareholders, and in this circumstance can be viewed as providing resource to the company (Chen & Roberts, 2010). It is in this capacity that resource dependence theory applies.

According to agency theory, independent board members are seen as accountable to shareholders, for they are the ones that exercise oversight over management, ensuring that management works in the interest of shareholders, and not their own. As noted, independent board members are responsible for more efficient monitoring of management, as well as ensuring that the earnings of management are not more than they should be (Page and Spira, 2005; Xin et al., 2003).

It has also been pointed out that it is important to have more non-executive directors on the board so as to prevent or reduce agency problems and lessen asymmetry of information, which gives more power to some shareholders and not others (Lipton and Lorsch, 1992; Jensen, 1993). While it is important to have non-executive directors on the board, it is also desirable to have more executive directors of the board. The rationale for this can be found in agency theory, resource dependency theory and information asymmetry (Fama, 1980; Sonnenfeld, 2002). Agency theory can help explain why more non-executive directors are necessary, since, when they dominate a board, the board is thought to be more accountable, as non-executive directors protect the interests of shareholders (Fama, 1980; Sonnenfeld, 2002). Resource dependency theory is also applicable, because these non-executive directors are thought to possess the skills, expertise and possibly the business network to



become additional resources for the company (Haniffa and Hudaib, 2006; Baranchuk and Dybvig, 2009). Non-executive directors are also encouraged to provide highly professional work, since their reputation is recognised in the labour market.

Like non-executive directors, executive directors are also desirable on a board, as they can help with monitoring management (Lipton and Lorsch, 1992). However, Fama (1980) points out that if there are too many executive directors to non-executive directors, this could lead to collusion rather than competition among executive directors. Executive directors could also expropriate company resources (Fama, 1980). Fama (1980) explains that in order to prevent collusion among executive directors, more non-executive directors should be hired. The rationale for this is that non-executive directors can criticise management without fear of being fired. Having more NEDs on the board can serve to minimise any possible collusion by directors on the board (Jensen, 1993). The explanation for this is that the independence of NEDs enables them to criticise management without any hesitation or fear of being fired (Jensen, 1993).

However, not all researchers support the view that more non-executive directors are advantageous for corporate governance. Using stewardship theory, some argue that a board with too many non-executive directors does not have a positive effect on the company (Baysinger and Hoskisson, 1990; Weir and Laing, 2000; Bozec, 2005). For example, Weir and Laing (2000) note that non-executive directors know less than executive directors. This means that non-executive directors may not have knowledge about the special workings of the company. Other research also explains why non-executive directors may not be as good as executives in promoting corporate governance. One explanation is that non-executive directors are usually part time and may work full time in other companies (Bozec, 2005; Jiraporn et al., 2009). Another explanation is that non-executive directors often spend time doing other specialised activities and do not have time to monitor managers (Bozec, 2005; Jiraporn et al., 2009). Stewardship theory is appropriate here, as it shows executive directors as providing good stewardship of company resources.

Nicholson and Kiel (2007) believe that non-executive directors are necessary because of their role in eliminating or preventing asymmetry of information. These researchers point out that a high percentage of non-executive directors on a board have easy access to much of the information needed to make accurate and high-quality decisions. Nicholson and Kiel (2007) argue that this can positively contribute to corporate performance.

Haniffa and Hudaib (2006) maintain that, despite having access to external sources, non-executive directors may lack some of the skills executive directors use to obtain pertinent information from their informal sources, usually within the organisation. It would follow, as Goodstein et al. (1994) argue and as Haniffa and Hudaib (2006) confirm, that a board of directors with too many non-executive directors could have the effect of repressing strategic plans, while causing the firm to condition too much monitoring of managers (Goodstein et al., 1994; Haniffa and Hudaib, 2006). Ntim et al. (2012) conclude that transparent information on corporate governance provisions as it relates to corporate boards and directors have a stronger influence on firm value than any other provision.

Given the independent directors evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H6a:** There is no statistically significant relationship between independent directors and risk-taking.

#### 4.4.3.2 Independent directors and credit ratings

Another concern with independent directors was whether they had an impact on credit ratings. Davidson et al. (2005) maintain that non-executive directors, as a form of corporate governance, showed that they had an influence on the quality of earnings in an organisation. It was also noted that when a company has good corporate governance, it is able to deal effectively with agency risk as well as with information asymmetry because of the impact of corporate governance on management's behaviour (Davidson et al., 2005).

But it was also found that properly monitoring management was likely to reduce agency risk as well as mitigate the information asymmetry between a company and its creditors (Davidson et al., 2005). As Alali et al. (2012) maintain, with high levels of corporate governance, management does not have much opportunity to look after its own interest, which promotes more effective decisions. According to Fitch Ratings (2004), corporate governance is important in the rating process. It was found that rating agencies are more likely to see the reports of companies with strong governance structures and practices as more reliable and valid than reports from companies with poor governance structures and practices (Ashbaugh-Skaife et al., 2006). In other words, corporate governance goes a long way in promoting a company's credit rating.

Agency theory governs the relationship between independent directors and credit ratings, for according to Jensen and Meckling (1976), the separation of management and ownership will involve added costs to owners to monitor their resources. Independent directors would more likely monitor the operations of management, and ensure the financial performance of the company over the long term, and this could lead to an increase in credit ratings. A strong board would ensure that independent directors do not increase risky investments. Therefore, independent directors are associated with increase in credit rating (Garmaise & Liu, 2005). Resource dependence theory applies to independent directors and credit rating for with more resources provided by the independent directors, the company would be doing better financially and this would lead to increase in credit ratings.

In assessing how companies make decisions based on their credit rating, Shah (2006) explains that companies anticipating a change in their credit rating take steps to try to prevent a downgrade by cutting back on investments and having adequate cash reserves for carrying out business operations. Companies that operate in the debt markets are more likely to use this strategy. Also, when a firm's credit rating is upgraded, it strives to maintain this improved rating by cutting back on its investments (Shah, 2006). The rationale for this is that the company that may be expecting a downgrade or that just

received an upgrade wants to maintain its existing position and so cuts back on investments so that it does not want to use up its cash reserves (Shah, 2006). This is why financial managers are not eager for an upgrade in credit rating, because they realise that trying to maintain it could be restricting (Shah, 2006).

Managers are aware of how credit rating agencies assign ratings to companies, and know the implications of upgrades and downgrades to their careers (Holmstrom, 1999). Managers who have to make decisions therefore consider their careers, and do not use up all the capital that can be used for external financing (Holmstrom, 1999). They are also not very eager for their companies to have high credit ratings, because very high credit ratings would mean that companies have to be concerned about possible downgrades, and downgrades can be seen as showing some deficit on the performance of managers. Therefore, managers, wanting to protect their reputation, may manipulate the decision-making process in the firm (Holmstrom, 1999). The rationale is that when there is a downgrade in credit rating, this reflects poorly on managers, and this has the potential of damaging the managers' reputation (Holmstrom, 1999). Downgraded credit ratings could have negative implications for a manager, who may be assessed negatively in the job market, should that manager be looking for a job in the future (Holmstrom, 1999).

Given the independent directors evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H6b:** There is no statistically significant relationship between independent directors and credit rating.

#### 4.4.3.3 Independent directors and cost of capital

A firm's cost of equity capital is significantly associated with the number of governance attributes in the firm (Ashbaugh-Skaife et al., 2004). Ashbaugh-Skaife et al. (2004) find a negative relationship between cost of equity and some governance structures. For example,

using independence of the board, board ownership and the amount of power management, Ashbaugh-Skaife et al. (2004) note that the cost of equity rises when these aspects of corporate governance were poor.

In the relationship between independent directors and cost of capital, Dahya et al (2002) point out that in the Anglo tradition, boards, being one-tiered, are made up of independent directors. These outside or independent directors tend to be interested in promoting the interests of the company, namely, the interests of the shareholders. But there would also be inside directors, which would identify with management and this would represent directors that are in conflict with other board members and that identify with management (Solomon & Solomon, 2004). In this latter case, the inside directors would be looking after their own interests. Therefore, in either case, it is agency theory that would apply to explaining the relationship between independent directors and cost of capital.

It was also noted that in the two-tiered board of directors used in German companies, independence of the board is sometimes not possible. For example, one practice in these companies was for the CEO, on retiring, to serve as chair of the supervisory board. Criticism of this practice has been raised because of potential conflicts of interest (Andres et al., 2013). The rationale for this criticism is based on the fact that the chairman of the supervisory board, the former CEO, will monitor his successor and former colleagues (Andres et al., 2013). In addition, the practice in such two-tiered boards is for the former CEO on the supervisory board to also be involved in setting the pay of his or her successor and colleagues (Andres et al., 2013). Andres et al. (2013) point out that in the 150 listed companies that they studied over ten years, former CEOs serving as chairs of supervisory boards were very lenient in determining pay for the CEO and other executives.

One of the views held about the board of directors is that it serves to effectively monitor the actions of management, according to agency theory (Lorca et al., 2011). It is also held that if independent directors are appointed by management, then it follows that these

directors would be influenced by their appointment (Lorca et al., 2011). It would therefore follow that these independent directors would not be very effective in monitoring the actions of managers. According to Lorca et al. (2011), this practice puts the firm at risk, and may lead to poor credit ratings.

Given the independent directors evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H6c:** There is no statistically significant relationship between independent directors and cost of capital.

#### **4.4.4 Board diversity and risk-taking, credit ratings and cost of capital**

##### **4.4.4.1 Board diversity and risk-taking**

Board diversity stands out as one of the most significant internal corporate governance issues presently facing organisations. Board diversity is seen as representing different attributes of directors in a boardroom. These various attributes are thought to influence board process. According to Van der Walt and Ingleby (2002), board directors bring many invaluable attributes to their boards. Board directors, because of their different ages, genders, ethnicities and cultures, bring a variety of different perspectives to board decision-making (Van der Walt and Ingleby, 2002). According to these researchers, other important attributes of board directors are their religion, the constituency the board directors represent, independence, knowledge, educational and professional background, technical skills and expertise, commercial and industry experience, and career and life experience (Van der Walt and Ingleby, 2002).

Two main positions are put forward to explain the possible impact of board diversity on shareholder value. Some argue for more diversity in boardrooms, while others are in favour of corporate monoculture and boardroom uniformity.

These opposing positions have mixed theoretical suggestions to support different views. Agency theory and resource dependence theory are often used to discuss board diversity (Goodstein et al., 1994; Carter et al., 2003). According to agency theory, board members with diverse backgrounds increase board independence and promote better monitoring of management (Van der Walt and Ingley, 2006). The rationale for seeing diversity as making boards more effective is that board members with diverse backgrounds may have different ideas, experience and knowledge that can enhance the decision-making process (Baranchuk and Dybvig, 2009). Agency theory also holds that including diverse boards can help better evaluate the complexities of the corporate marketplace and its external environment (Baranchuk and Dybvig, 2009). According to Carter et al. (2003), diversity can also increase creativity and innovation in the boardroom because of differences in cognitive abilities, which can also encourage rational decision-making. These different explanations support the use of agency theory in addressing boardroom diversity.

Resource dependence theory is also applicable to explaining board diversity. From this theoretical framework, board diversity is seen to give the company more skills, knowledge and connection with the broader business environment (Goodstein et al., 1994). According to Rose (2007), diversity on the board could lead to a variety of different skills and expertise, which would mean that the more diverse a board, the more skills and expertise that are added, and the more resources would a company with a diverse board have. Therefore, the resource dependency theory could be used to explain this relationship, as the diverse board could be seen as a source of resources available to the company. However some disagree with this view, seeing diversity on the board as a source of contention, with too many different views on the board leading to less than consensus. From this perspective, resource dependence theory still applies as this point of view sees diversity as limiting the available sources (Rose, 2007).

Greater board diversity could also attract well-qualified professionals considering employment with the company (Rose, 2007). These professionals may be individuals who

are not ordinarily considered for board directorship (Rose, 2007). For example, greater diversity could encourage women and members of different ethnic groups to apply for top positions with the company and bring much-needed skills and perspectives (Rose, 2007).

On the other hand, a diverse board does not mean a more effective board, as the monitoring of management may not improve (Rose, 2007). The rationale here is that the appointment of diverse board members may involve tokenism, and the true value of the contributions these directors could bring may not be appreciated and utilised (Rose, 2007).

While it has been shown that diversity of board directors could be advantageous to a company (Rose, 2007), there is also research showing that board diversity can be problematic (Goodstein et al., 1994). It may be problematic because, especially when a company's performance is poor and the financial environment uncertain, decisions may need to be made promptly. Diverse board members, representing different constituencies, may have differing views as to what decisions should be made (Baranchuk and Dybvig, 2009). In situations like these, board diversity could create factions and prevent the board from making unanimous decisions (Goodstein et al., 1994).

However, companies are increasingly recognising that boards of directors should reflect the diversity of the companies' clientele, whether employees, customers or other stakeholders. In short, as Carter et al. (2003) point out, equity and fairness require this.

Agency theory holds that a more diverse board promotes greater board independence (Carter et al., 2003). Diversity is seen as instrumental in promoting better monitoring of management. Therefore, having more women and minority members can be seen as promoting more effective boards.

Resource dependence theory also supports board diversity based on gender, ethnicity and/or cultural background (Carter et al., 2003). With greater diversity comes great and different resources that can be invaluable to companies (Carter et al., 2003).



Carter et al. (2003) and Erhardt et al. (2003), in their studies of diversity and its influence on company performance, find conflicting results. For example, they find that in some companies, women and African-, Hispanic-, Asian- and Native American board members had positive effects on the performance of the companies. However, in other companies, this was not the case. These researchers discovered that either there was no effect or there was a negative relationship between board diversity and company performance (Carter et al., 2003; Erhardt et al., 2003).

In addition to agency theory and resource dependence theory, Goodstein et al. (1994) and Carter et al. (2003) identify signalling and stake holding theories as supporting board diversity. For example, signalling theory underlie the diversity of women in boards. It was found that there is a higher proportion of female board members in banks with lower risk (de Cabo and Gimeno, 2012). It was also noted that among larger banks, larger boards had a high proportion of women (de Cabo and Gimeno, 2012). These observations seem to indicate that smaller boards prefer less diversity, while banks with larger boards and greater growth potential prefer more (de Cabo and Gimeno, 2012). However, de Cabo and Gimeno (2012) observe that while there was a larger proportion of female board members, there were no female directors on boards that had higher risk.

Fonda and Sassalos (2000) argue that more women on the boards that they studied tended to be more efficient in protecting shareholder's interests. The rationale for this was that women seem to be more conscientious about their responsibility in monitoring management (Mathisen et al., 2012). Watson et al. (1993) point out that having board members from diverse groups is effective in identifying perspectives that were problematic, and in coming up with alternative solutions. Milliken and Martins (1996), supporting diversity, see it as providing different problem-solving and decision-making styles that are instrumental in crafting better decisions. The explanation for this position is that diversity brings together more perspectives, more critical analyses of issues and

improved communication, all of which give rise to better decisions and outcomes (Milliken and Martins, 1996).

Adams and Ferreira (2007) note that some CEOs prefer to have smaller boards, consisting primarily of men. These CEOs quite likely look at women on their boards as disruptive or “annoying” (Adams and Ferreira, 2007). The reasoning for this is that such CEOs see their boards as being “friendly” and engaging in less scrutiny of management (Adams and Ferreira, 2007). A large board with many women could be an indication that the CEO is comfortable or may be aware of the value that diversity brings to the board and to decision-making (Adams and Ferreira, 2007).

Carter et al. (2003) investigate the role of board diversity in firm financial performance. They examine diversity in terms of gender and ethnicity among a sample of 638 American Fortune 1000 firms (Carter et al., 2003). Using Tobin’s Q as a proxy for financial performance, Carter et al. (2003) discovered a positive relationship between these measures of diversity and this measure of financial performance. They found that companies with more diverse boards had excellent financial performance.

Diversity based on gender was also seen as having a positive effect on financial performance. Adler (2001) examines a sample of 25 American Fortune 500 companies, using return on sales, return on equity, return on assets and return on investment as measures of financial performance, to see how firms with top women managers perform financially. Adler (2001) finds that companies with more women in higher management positions perform better than firms without such diversity. However, Francoeur et al. (2008) criticise Adler’s findings on the grounds that Adler (2001) used too small a sample, and only considered large firms.

Given the board diversity evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H7a:** There is no statistically significant relationship between board diversity and risk-taking.

#### 4.4.4.2 Board diversity and credit ratings

Several European governments have passed legislation regarding female representation on boards. For example, Norway, one of the earliest countries to legislate female representation on boards, required that boards should be comprised of at least 40% females by 2008, in all public companies (Hoel, 2008). The U.K. government stipulated that for companies listed on the FTSE, at least 25% of directors should be women by 2015 (Sealy and Vinnicombe, 2012). Similarly, Spain and France have stipulated that by 2015 and 2017 respectively, a minimum of 40% of board members in publicly held firms should be women (de Cabo et al., 2012). Finland and Sweden, among other European countries, strongly recommend more women on boards of publicly held companies, but meeting these standards remains voluntary (de Cabo et al., 2012).

The relationship between board diversity and credit rating can also be seen as involving resource dependence theory. According to de Cabo et al. (2012), in Germany board diversity with heavy female participation is seen as an advantage to companies. This condition leads to companies with boards that have a heavy concentration of women being more successful than boards that have few or no women. This research finding reveals that resource dependence theory is an adequate one to work with respect to the relationship between board diversity and credit rating. These companies with high board diversity are seen to have higher credit ratings. However, according to Watson et al. (1993), board diversity leads to difficulty reaching consensus, and therefore this is seen as a disadvantage for the company. Resource dependence theory also applies. But agency theory could also apply, if it is reasoned that board diversity leads to greater monitoring of the activities of management, thereby promoting the interests of the company, as opposed to the interests of shareholders.

The underlying reasoning supporting the reform of boards to include more gender diversity is the belief that women bring different perspectives that increase the value of companies (Carter, Simkins and Simpson, 2003; Erhardt, Werbel and Shrader, 2003). As the argument continues, increased value of firms reduces the risk of company failure (Carter, Simkins and Simpson, 2003; Erhardt, Werbel and Shrader, 2003).

Tanaka (2014) examined corporate bonds issued by 225 Japanese companies between 2005 and 2009, and found that female board members had a positive impact on yield spread among the 839 bonds studied. Tanaka (2014) also discovered that companies with board gender diversity had better yield spreads, supporting the position that female board directors made better monitors of management, promoting better corporate governance. However, by contrast, Tanaka (2014) neither inside nor outside female directors in this study showed a positive relationship on yield spreads, with outside female directors showing a negative impact on yield spreads.

Given the board diversity evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H7b:** There is no statistically significant relationship between board diversity and credit ratings.

#### 4.4.4.3 Board diversity and cost of capital

Board diversity is generally expressed in terms of women becoming members of boards, and this is very common in Europe. Having women as part of the board has been a concern in Europe that has resulted in Norway requiring women to be appointed as members of the board in 2008 (Hoel, 2008), and this turned being followed in Spain and France as pointed out by de Capo et al (2012) and in the U.K. as observed by Sealy and Vinnicombe, 2012). Therefore, when speaking about board diversity, it is generally understood that diversity is introduced because of the presence of women in the board. Women have been identified

as promoting the well-being of companies where they are board members, because they provide good advice on how to use resources. More than that, it can be shown that women in the Continental tradition can be seen as illustrating how resource dependence theory can be applied to board diversity and cost of capital. In this capacity, the relationship between board diversity and cost of capital is seen in the reduction in the cost of capital (Anderson & Reeb, 2004). But the argument is also made that diversity in the firm of having more women on the board adds to the cost of capital, because there is often conflict between the men and women on the board, resulting in delays in making decisions (Anderson & Reeb, 2004). Resource dependence theory can be used, because of the possible impact of diversity on assets which in turn influence the cost of capital. Agency theory can also be applied here as board members are seen as serving to monitor management's actions.

A study of board diversity and cost of capital reveals that companies with female outside directors had a lower cost of public debt (Tanaka, 2014). Tanaka (2014) examined Japanese corporate bonds while controlling for the various characteristics of the companies, the type of bonds and corporate governance. Anderson and Reeb (2004) provided the rationale for Tanaka's finding, noting that women on boards bring different perspectives that improve oversight of management. It was also noted that female directors have been found to be good at advising managers on how to use their resources more efficiently and how to formulate strategy (Anderson and Reeb, 2004). It can be argued that if monitoring and advising managers are considered important activities in promoting board effectiveness, then having female directors carry out these activities is important to board effectiveness and looking after the interests of all stakeholders, which includes bond holders. It would follow that in companies where the boards of directors are diverse, and where this diversity is based on gender, bond holders could expect to have lower bond yields.

However, while it has been shown that gender diversity on boards promotes well-being, Anderson and Reeb (2004) point out that companies may also have potential costs because of their female directors. The rationale is that male and female directors may have different

perspectives that can lead to conflicts of interest and thus inhibit decision-making. This can lead to board ineffectiveness, which can be seen as not in the interests of bond holders, as this could put the company at risk. Bond holders may therefore demand higher yields for companies that have gender-diverse boards. Therefore, the discussion of the effect of gender diversity on companies' public debt shows great ambiguity in Japanese companies.

In examining European banks, de Cabo, Gimeno and Nieto (2012) reveal that board gender diversity in these banks contributes to better corporate performance. A higher ratio of women to men on the boards was correlated with less risk, and companies that were growing were more likely to have women on their boards (de Cabo et al., 2012). Resource dependence theory clearly applies here, but human capital theory, agency theory, and social psychology are also applicable to explaining the importance of board diversity to companies (de Cabo et al., 2012).

Given the board diversity evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H7c:** There is no statistically significant relationship between board diversity and cost of capital.

#### **4.4.5 Frequency of board meetings and risk-taking, credit ratings and cost of capital**

##### **4.4.5.1 Frequency of board meetings and risk-taking**

The relationship between the frequency of board meeting and risk-taking can be explained in terms of agency theory, resource dependence theory and institutional theory. Frequency of board meetings can be discussed in terms of board members meeting more frequently and therefore having more opportunity to monitor management more. This could be explained in terms of agency theory. Resource dependence theory could also be used as it can be shown that more frequent board meetings mean more resources are available to the

company. More frequent board meetings can be explained in terms. At the same time, it can be argued that more frequent board meetings do not necessarily mean that more work would be done, since the very fact of getting together could mean more paper work with no more work being done. This could be discussed in terms of resource dependence theory.

Policy-makers and researchers express concern whether the frequency of board meetings is related to financial performance of companies. It was conjectured that more frequent board meetings lead to more monitoring of managers, which can improve financial performance (Vafeas, 1999). It was also thought that regular meetings allow directors the opportunity to discuss strategies, and to more frequently assess how managers are performing (Vafeas, 1999). According to Mangena and Taurigana (2006), when meetings are held frequently, directors receive timely information about the organisation and have the opportunity to address developing problems more promptly. Besides keeping directors informed, frequent board meetings develop closer bonds among directors (Lipton and Lorsch, 1992). Also, conscientious directors attend meetings regularly and participate in board activities.

An opposing view suggests that shareholders do not gain much from board meetings. While the board was seen as protecting the interests of shareholders, meetings did not fulfil that goal. According to Vafeas (1999), frequency of board meetings does not accomplish much, since the amount of time that board members spend together does not really involve much genuine exchange that is relevant to shareholders. This is because of the amount of routine involved in board meetings (Vafeas, 1999). Vafeas explains that several management reports have to be presented, and various formalities have to be acknowledged at board meetings (Vafeas, 1999). Lipton and Lorsch (1992) also pointed out that frequent board meetings do not help shareholders, because these meetings take time away from monitoring management. It is also noted that frequent board meetings cost the company, in terms of expenses to cover travel, refreshments and other board activities (Vafeas, 1999).

Given the frequency of board meetings evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H8a:** There is no statistically significant relationship between the frequency of board meetings and risk-taking.

#### 4.4.5.2 Frequency of board meetings and credit ratings

The relationship between frequency of board meetings and credit ratings can be explained in terms of agency theory for in the presence of good corporate governance as exhibited through frequent board meetings, there would be more monitoring of management. According to Ahmad, Rashmi, Bakshi and Saha (2009), investors would more likely see a company as a good risk. Such companies would have better credit ratings, because they would be seen as stronger companies. Also, Elbannan (2009) point out that companies that have good governance are also companies that have better credit ratings, as compared to companies with little governance that are seen to have poor credit ratings. Resource dependence theory is applicable here as frequent board meetings are seen as indicating better board governance, and therefore more skills and expertise available to the company.

There is little evidence of the relationship between frequency of board meetings and credit ratings. One view is that the frequency of meetings reveals how committed board members are to their roles and how effective board members are in monitoring management. In this view, frequent board meetings would suggest that board members are effectively looking after the interests of shareholders through board oversight of management, which would ultimately impact the company's credit rating (Vafeas, 1999). But the opposing view is that board meetings are not beneficial to shareholders or to the company's credit rating (Vafeas, 1999).

Researchers also found that the frequency of different board meetings affects credit ratings in different ways. For example, Carcello et al. (2002) studied a sample of 258 Fortune 1000



companies and discovered that the frequency of audit committee meetings was reflected in higher audit fees paid. This was found to have a negative impact on the companies' credit ratings (Carcello et al., 2002).

However, when Karamanou and Vafeas (2005) examined the frequency of board meetings for 275 U.S. listed companies between 1995 and 2000, they discovered a more positive outcome: the more frequent meetings were, the more accurate the forecasts of management earnings were. Similarly, Mangena and Taurigana (2006), in examining 157 Zimbabwean companies between 2001 and 2003, discovered that the frequency of board meetings contributes to good company performance. These examples show that there is merit in frequent board meetings, as these results in accurate forecasts of management earnings and good company performance, which could also be reflected in good credit ratings. The indication here is that more frequent board meetings benefit companies.

Given the frequency of board meetings evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H8b:** There is no statistically significant relationship between the frequency of board meetings and credit ratings.

#### 4.4.5.3 Frequency of board meetings and cost of capital

Frequency of board meetings are related to cost of capital, for according to agency theory, boards are seen as indication of good governance, and good governance is seen as looking after the interests of the company. According to Letting et al. (2012), frequency of board meetings may suggest a strong board, and a strong board is associated with monitoring management. This is seen as important for eliminating the problems that occur when management is too strong and not under surveillance. Agency theory applies because frequency of board meeting can be seen as leading to better company performance. This is also associated with a lower cost of capital. According to Garmaise and Liu (2005), when

managers are too strong with decision making, they often look after their own interests. A company with strong board governance is seen as providing resources to the company that would ensure the protection of the interests of the shareholders. Resource dependence theory can be applied here, since frequency of board meetings could be interpreted as meaning more resources to the company. Stewardship theory could also be applied, showing that the frequency of board meetings suggest better stewardship of the company's assets and the interests of the shareholders.

In examining the relationship between frequency of board meetings and cost of capital, Vafeas (1999) and Adams (2005) find that the number of board meetings gives some indication of the monitoring function of board directors. Similarly, Lorca et al. (2011) hold that the number of meetings and their frequency have been seen as a proxy for the board carrying out its role of monitoring management (Lorca et al., 2011).

Menon and Williams (1994) note that when audit committees meet infrequently, it is unlikely that they are able to monitor management effectively. But Anderson and Reeb (2004) find that when audit committees meet frequently, they have the effect of decreasing the costs of debt, as directors are conscientious in monitoring the financial accounting process. Lorca et al. (2011) also believe that audit committees lead to lower debt costs. Debt holders quite likely welcome frequent board meetings (Anderson and Reeb, 2004).

By contrast, it was argued that board meetings are not likely to be very useful because in the limited time that they were held. The rationale for this is that in board meetings, directors have to follow certain routine procedures and tasks that constitute a waste of time, thereby leaving the responsibility for setting the agenda for board meetings to CEOs (Menon and Williams, 1994; Lorca et al., 2011).

Given the frequency of board meetings evidence, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

**H8c:** There is no statistically significant relationship between the frequency of board meetings and cost of capital.

#### **4.5 Chapter Summary**

This chapter dealt with risk-taking, credit ratings and cost of capital as measures of firm performance. Corporate governance index, ownership structure and board structure were the mechanisms representing corporate governance. The objective of this chapter was to see how corporate governance, represented by these mechanisms, impacts on firm performance. As outlined in the introduction, there are three main sections, dealing with the three mechanisms of corporate governance, but these are broken down further into specific aspects of these mechanisms. While Section 4.1 deals with CGI and risk-taking, credit ratings and cost of capital, Section 4.2 deals with ownership structure, broken down into block ownership, institutional ownership and director ownership. Section 3 deals with board structure, examining board size, independent directors, board diversity and frequency of board meetings as aspects of corporate governance that have a bearing on firm performance, measured through risk-taking, credit ratings and cost of capital.

The literature in all of these sections reveals that the mechanisms chosen were appropriate for corporate governance, and that various findings support as well as challenge the impacts that these aspects have on firm performance. There is evidence that corporate governance positively impacts firm value, although researchers often disagree on the findings of their studies of companies in different situations.

## **Chapter 5: Research Design**

### **5.1 Introduction**

This chapter describes the research design of this study, which examine how corporate governance mechanisms have an effect on corporate performance in terms of risk-taking, credit rating and cost of capital. The research design that has been selected is a quantitative approach, because it has many advantages over a qualitative approach. The rationale for choosing quantitative over qualitative is that in order to study corporate governance, it is necessary to consider a period of several years. It is also necessary to obtain data from secondary sources, including databases and annual reports from the selected firms. The quantitative approach, as used in most studies on corporate governance, makes it possible to use secondary data, which allows for comparison with previous studies. However, the most important reason for using the quantitative approach for this study is that it provides accurate findings; these can only be obtained by following a precise procedure that can be verified and even replicated (Hussey and Hussey, 1997).

This chapter is divided into several sections. Section 5.2 discusses research paradigms, with Section 5.3 describing the positivist approach, and why this approach is used in this study. Section 5.4 describes the sample, the selection of the companies and the manner in which the sample was used. Section 5.5 outlines the data and sources used to obtain the information in this study. Section 5.5 is further subdivided in Sections 5.5.1, 5.5.2, 5.5.3 and 5.5.5, which consider corporate governance data, financial data, credit rating data, firm-level data and country -level data, respectively. Section 5.6 describes the criteria used for selecting the final sample, while Section 5.7 describes the reasons for selecting the final 200 stratified sample. Section 5.8 describes the research methodology used in the study, highlighting the reason for using quantitative research study. Section 5.9 outlines the construction of the corporate governance indices that form the basis for studying corporate

governance in the study, while Section 5.10 discusses the advantages and disadvantages of using weighted and unweighted indices. This section also justifies why unweighted indices are used in this study. Section 5.11 discusses the dependent variables, namely, risk-taking, credit rating and cost of capital. Section 5.12 discusses the independent variables, including corporate governance index, ownership structure and board structure. Section 5.13 describes the control variables used in this study, namely, firm-level variables and country-level variables. These control variables form the characteristics that define the companies and countries used in this study. Section 5.14 provides the regression models and section 5.15 provides a summary for the chapter.

## **5.2 Research paradigms**

This section discusses the use of research paradigms and how they are selected for a study. It also points to the application of different paradigms to different types of research studies, showing why a quantitative approach is better suited to this study. This section also discusses the positivist approach, its aim, and shows the suitability of the positivist approach for this type of study.

There is some controversy over which research approaches are to be used. On the one hand, it is argued that the relationship between the theoretical position, methodology and method is causal, and that the epistemological and ontological assumptions underlying the theories dictate the methods to be used in a study. From this position, the epistemological and ontological assumptions that are associated with positivist theory or approaches are said to dictate the use of quantitative research methods, while those associated with the interpretivist approach are said to indicate qualitative research methods. On the other hand, it is argued that the relationship between theoretical positions, methodologies and methods cannot be so easily established. According to this position, it is possible to use quantitative methods to support an interpretivist position (Blaikie, 1993). As Thietart (2001) holds, research aims to give a vision of the world, and so uses a methodology that allows for

predicting and explaining this vision. This study carries out business research, which has the advantage of drawing knowledge from various disciplines which can provide unique insights, and which can develop ideas that can then be applied to real-life situations (Saunders et al., 2012). Research paradigms therefore provide inspiration to researchers.

### **5.3 Positivist approach**

This section shows why the positivist approach is best for this study. This approach is based on the idea that the research process involves logical reasoning and empirical observation. While logical reasoning involves statistical and mathematical calculations, for example multiple regression models, empirical observation involves direct observation, use of measurements, analysis and the drawing of conclusions. Therefore, the positivist approach is considered more appropriate for carrying out scientific studies where rigour and predictability are valued, particularly in forecasting. The generalisability of findings is considered highly reliable. One difficulty with this approach is that it does not adequately predict behavior.

However, positivists are concerned with examining facts (Thietart, 2001), and not particularly concerned with what individuals perceive, for they see reality as independent of how it is perceived. What is critical in positivist research is relating what is observed to the theoretical framework (Remenyi et al., 2005). Finding a universal law and objective truth therefore becomes the goal of positivist research (Thietart, 2001). What is significant in positivist research in management is keeping the researcher separate from what is being studied. Human activities must be observable, and the link between the events in the research process as seen as causal. This means external factors must be seen as causing human action.

## **5.4 Sample selection**

Critical to any study is the sample that is selected. Understanding how the sample is chosen is also important, for it tells whether this is a process that can be replicated with the same results. It also shows other researchers the path taken to arrive at the chosen sample.

The sampled firms used in this paper are drawn from companies that are listed in the World's Biggest Public Companies listing, FORBES Global 2000 Leading Companies (Forbes, 2000). The sample is made up of 200 companies that were taken from ten, or 29.4%, of the 34 OECD countries. The 200 companies represent both the Anglo-American tradition, including companies from Australia, Canada, Ireland, the UK and the US, and the Continental European tradition, which includes companies from France, Germany, Italy, Japan and Spain. These companies are drawn from ten industries, namely, basic materials, consumer goods, consumer services, financials, health care, industrials, oil and gas, technology, telecommunications and utilities, as shown in Table 3 below. The period of focus is 2010 to 2014, resulting in 1,000 firm-year observations. The study looks at how corporate governance mechanisms impact the risk-taking, credit rating and cost of capital of these firms in the various industries mentioned above.

The rationale for selecting countries from both traditions, from these various industries, and for these years is to show how companies from these different traditions and industries performed after the financial crisis. This information is ascertained using secondary data obtained from the websites and financial reports of the companies. The sample was stratified, drawn from large, medium and low firms based on their total assets and sales as part of the FORBES 2000 information provided.

The information used examines corporate governance mechanisms with the aim of showing how these mechanisms affected the financial characteristics of the firms. The study also shows the difference between the traditions with respect to the governance mechanisms used, and how this has implications for the firms' performance during the period of study.

An inclusion criterion of the companies taking part in the study was that they had experienced the global financial crisis, and data was available for a period after this event. An exclusion criterion was that any firms that had independent variables missing that were necessary for the analysis would be eliminated from the sample. Utility firms and firms from the financial industry were also excluded, as these industries have a different capital structure and are heavily regulated, which is likely to impact their governance structures differently than firms in other industries (Yermack, 1996; Weir et al., 2002; Cheng, 2008).

Two French companies were excluded because their annual reports were in French only they were replaced with other companies from the sample. Some countries, such as Ireland, Italy and Spain, had fewer than 20 firms in FORBES 2000 after excluding utility and financial companies. In order to compensate for this, firms that were listed on their stock markets were used.



**Table 3: Summary of the Sample Selection Procedure**

*Panel A: Industrial Composition of all listed firms on the FORBES 2000 as at 31/12/2014*

	USA	%	Canada	%	UK	%	Australia	%	Ireland	%	Germany	%	France	%	Italy	%	Japan	%	Spain	%
Financials	64	11.4	14	26.9	24	25.3	11	32.4	5	26.3	11	20.4	9	14.8	17	56.7	57	26.0	10	37.0
Industrials	136	24.2	3	5.8	30	31.6	3	8.8	3	15.8	18	33.3	13	21.3	3	10.0	54	24.7	4	14.8
Basic Materials	22	3.9	8	15.4	5	5.3	1	2.9	2	10.5	1	1.9	5	8.2	1	3.3	24	11.0	0	0
Consumer Services	96	17.1	5	9.6	17	17.9	6	17.6	1	5.3	5	9.3	8	13.1	2	6.7	19	8.7	4	14.8
Consumer Goods	47	8.3	5	9.6	6	6.3	3	8.8	2	10.5	8	14.8	11	18.0	1	3.3	23	10.5	1	3.7
Technology	63	11.2	1	1.9	0	0	3	8.8	2	10.5	2	3.7	4	6.6	0	0.0	15	6.8	0	0
Health Care	49	8.7	1	1.9	3	3.2	2	5.9	4	21.1	3	5.6	2	3.3	0	0.0	8	3.7	1	3.7
Telecommunications	10	1.8	4	7.7	3	3.2	1	2.9	0	0	3	5.6	3	4.9	0	0.0	3	1.4	2	7.4
Oil and Gas	43	7.6	10	19.2	2	2.1	2	5.9	0	0	0	0.0	2	3.3	2	6.7	8	3.7	1	3.7
Utilities	33	5.9	1	1.9	5	5.3	2	5.9	0	0	3	5.6	4	6.6	4	13.3	8	3.7	4	14.8
Total Population	<u>563</u>		<u>52</u>		<u>95</u>		<u>34</u>		<u>19</u>		<u>54</u>		<u>61</u>		<u>30</u>		<u>219</u>		<u>27</u>	
Less: Financials & Utilities	<u>64</u>		<u>14</u>		<u>24</u>		<u>11</u>		<u>5</u>		<u>11</u>		<u>9</u>		<u>17</u>		<u>57</u>		<u>10</u>	
	<u>33</u>		<u>1</u>		<u>5</u>		<u>2</u>		<u>0</u>		<u>3</u>		<u>4</u>		<u>4</u>		<u>8</u>		<u>4</u>	
Total Sampled Firm	<b>466</b>	<b>82.7</b>	<b>37</b>	<b>71.2</b>	<b>66</b>	<b>69.4</b>	<b>21</b>	<b>61.7</b>	<b>14</b>	<b>73.7</b>	<b>40</b>	<b>74</b>	<b>48</b>	<b>78.6</b>	<b>9</b>	<b>30</b>	<b>154</b>	<b>70.3</b>	<b>13</b>	<b>48.2</b>

*Panel B: The Final 200 Stratified Sampled Firms*

	USA	%	Canada	%	UK	%	Australia	%	Ireland	%	Germany	%	France	%	Italy	%	Japan	%	Spain	%
Industrials	136	24.2	3	5.8	30	31.6	3	8.8	3	15.8	18	33.3	13	21.3	3	10.0	54	24.7	4	14.8
Basic Materials	22	3.9	8	15.4	5	5.3	1	2.9	2	10.5	1	1.9	5	8.2	1	3.3	24	11.0	0	0
Consumer Services	96	17.1	5	9.6	17	17.9	6	17.6	1	5.3	5	9.3	8	13.1	2	6.7	19	8.7	4	14.8
Consumer Goods	47	8.3	5	9.6	6	6.3	3	8.8	2	10.5	8	14.8	11	18.0	1	3.3	23	10.5	1	3.7
Technology	63	11.2	1	1.9	0	0	3	8.8	2	10.5	2	3.7	4	6.6	0	0.0	15	6.8	0	0
Health Care	49	8.7	1	1.9	3	3.2	2	5.9	4	21.1	3	5.6	2	3.3	0	0.0	8	3.7	1	3.7
Telecommunications	10	1.8	4	7.7	3	3.2	1	2.9	0	0	3	5.6	3	4.9	0	0.0	3	1.4	2	7.4
Oil and Gas	43	7.6	10	19.2	2	2.1	2	5.9	0	0	0	0.0	2	3.3	2	6.7	8	3.7	1	3.7
Total Sample	<b>20</b>		<b>20</b>		<b>20</b>		<b>20</b>		<b>20</b>		<b>20</b>		<b>20</b>		<b>20</b>		<b>20</b>		<b>20</b>	

## **5.5 Data and sources**

Data and sources are also critical to a study. Particularly when the quantitative method is used, with its positivist objective of getting at the truth, it is necessary that observers be able to follow the path taken to obtain the data. A look at the sources is also necessary. The data discussed in this section includes corporate governance data, financial data, credit rating data, firm-level data and country-level data. All of these data are important to investigate the differences in performance among these companies from different industries, of different sizes and from different accounting systems.

The data and sources collected from these firms between 2010 and 2014 are drawn from the 200 firms from the FORBES 2000 list, and are also listed on the stock exchanges of the respective countries. It is important to examine the companies' annual reports, and only companies with at least five consecutive years of annual reports are used. The assumption is that companies that are accountable to their stakeholders and that have good business practices will maintain their annual reports; the rationale for this is that good, solid companies would have to report their business practices to their constituents. The exclusion of financial companies from the sample is based on the consensus that these companies, by nature, have to adopt practices in keeping with good governance because of the extreme risk associated with this industry. The rationale for using the five-year period is that it allows us to look at governance practices that companies may undertake, thereby allowing for observations of corporate governance changes over time.

The study uses corporate governance data, financial data, credit rating data, country-level data and firm-level data. These data sources are critical, as the study focuses on risk-taking, credit risk and capital cost for all the sampled firms. The study obtains the annual reports of all the sampled firms from the Perfect Information Database and the company websites.

### **5.5.1 Corporate governance data**

This section deals specifically with corporate governance practices and points out how this would be operationalised and what sources of information would be used for these. This study uses an instrument to examine corporate governance practices in firms. This will be obtained by using the OECD Corporate Governance Principles (2004) to examine the quality of corporate governance practices in the sampled companies. In examining the effect of corporate governance on risk-taking, credit rating and cost of capital, different types of information had to be obtained for the corporate governance data such as the corporate governance variables. The data that is needed will be taken out manually from these annual reports. The annual reports are the main source of information for this study, as it is assumed that the internal corporate governance variables presented are reliable, as the information included in the complete annual reports is information that management must provide to shareholders. Therefore, corporate governance data is obtained from the annual reports of the 200 sampled companies.

As noted, the annual reports were obtained from the Perfect Information Database and companies' websites; where some annual reports were missing or not available from the Perfect Information Database, every effort was made to contact the company directly, by phone or email. Another method was to go through the companies' websites for either electronic copies. Fifteen companies' annual reports could not be obtained from the database, which meant that the companies had to be contacted otherwise. This meant that 1.5% of the annual reports had to be accessed by phone or email, while 985 or 98.5% of the companies' annual reports, were obtained from the Perfect Information Database.

### **5.5.2 Financial data**

This section deals with the financial data used in this study. This data was also drawn from the annual reports, specifically from the balance sheets and income statements. The balance sheet provides cash and cash equivalents, current assets, current liabilities, total assets, total

debts and shareholder's equity. The income statement provides current year sales, last year's sales, total revenue, gross profit, operating profit, income before tax and net income after tax. This data was also obtained for 2010 to 2014. The financial statements provided information about the number of shares outstanding, current year's share price, last year's share price, cash dividends, stock dividends, preferred dividends and earnings per share (EPS).

While the financial data was gleaned from the annual reports, necessary information was also obtained from databases, such as DataStream. Analysis was then carried out using the data from the annual reports, with support from secondary sources where annual reports were unavailable. Phone calls and email reports provided material for companies with unavailable annual reports.

### **5.5.3 Credit rating data**

This section deals with credit rating data and is not as straightforward as finding this information in one place. It is necessary to look at different ways in which credit rating is assessed, including the use of credit agencies.

The measurement of credit ratings can be carried out by examining the default frequencies with which companies in the same classification are denied credit, and by investigating the changes in credit rating that take place as prices and returns on stocks and bonds are adjusted (Jorion & Zhang, 2007). Estimations of default probabilities for individual rating categories can therefore be made on the basis of default frequencies. However, when agencies assign credit ratings, they define those ratings in terms of the quality of credit the individual firm has, and do not use a specific default probability for the individual rating categories (Matthies, 2013).

Consequently, we decided to assign credit ratings to firms based on Moody's, Standard & Poor's, and Fitch's compilations of long-term issuer credit ratings. Moody's long-term ratings range from Aaa to C. The ratings from best to worst are Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, Baa3, Ba1, Ba2, Ba3, B1, B2, B3, Caa1, Caa2, Caa3, Ca and C, which is the default. Standard & Poor's ratings range from best to worst as follows: AAA, AA+, AA, AA-, A+, A-, BBB+, BBB, BBB-, BB+, BB, BB-, B+, B, B-, CCC+, CCC, CCC-, CC, C, RD, SD and D. It is important to note that rating scales are ordinal, and not cardinal, meaning that credit quality is shown to increase as the categories decline down the scale. For example, the credit quality between a company that is rated AAA and one that is rated AA is different from the credit quality between a firm rated AA and one that is rated A. Fitch's long-term ratings range from AAA to D, and are similar to Standard & Poor's, the only difference being that after the C rating in Fitch, the rating designations are DDD, DD and D, corresponding to RD, SD and D in Standard & Poor's.

#### **5.5.4 Firm level data**

The firm-level data include firm size, measured by log of total assets, sales growth, audit committee number, corporate governance committee number, leverage and capital gain yield, as well as year dummies and country dummies.

#### **5.5.5 Country level data**

This section considers factors in which companies differ, and notes the potential for different outcomes for companies based on these different factors. The information provided in this study is drawn from country level. This includes stock market capitalisation, corruption index, inflation, GDP per capita, Hofstede's culture variables (masculinity and power distance), population and exchange rate.

The selected companies are drawn from ten different countries; this is significant, as the countries are also divided into those that follow the Anglo-American tradition and those

that follow the Continental European approach. Each country also has their specific histories, legal systems and other aspects unique to them. There are 200 companies, selected on the basis that they included large and smaller companies, and that they came from different industries. In this study, it is important to distinguish the effects that take place on the basis of the countries, as well as on the basis of the companies. This will allow for an understanding of the impact of country-level factors versus firm-level factors.

### **5.6 The criteria for selecting the final sample**

In selecting a sample, it is important to identify the criteria to be used in doing so. This section outlines these. To be included in the sample, companies must be large corporations operating in the OECD, must be listed on the stock market, and must also be listed in the FORBES Global 2000 Leading Companies. They must have annual reports for each year from 2010 to 2014, which must be available either from the Perfect Information Database or through email, official website or postal delivery. Their financial accounting information and corresponding five-year stock market information must be available from annual reports or DataStream.

The rationale for these criteria are that it is necessary to have a full five year stock market and accounting information in order to have a balanced panel data analysis, and thereby having data for firms from consecutive years (Yermack, 1996; Cheng, 2008).

Having balanced panel data is shown to have some noted advantages. First, cross-sectional observations in a time series used in combination with balanced panel data provide greater freedom, and give rise to less collinearity among variables, thereby safeguarding against any erratic changes in outcome as a result of a small change in a variable (Gujarati, 2003). Other advantages include more variability in cross-sectional observations and in time series, more informational data, greater asymptotic efficiency and more firm-level heterogeneity among variables (Gujarati, 2003).

The criteria used in creating this sample has also been encouraged because of its advantages. The use of panel data has been promoted as an important research tool in corporate governance research, as it reduces problems that are inherent in the use of statistical methods. For example, a common problem in corporate governance studies is that of endogeneity, where in the regression model the independent variable could become correlated to an error term, thereby giving rise to incorrect causation (Borsch-Supan and Koke, 2003; Larcker and Rusticus, 2007).

It is also deemed advantageous to use the time period from 2010 to 2014, because it allows for observation over a sufficient time period after the global financial crisis, and therefore allows for sufficient data to draw conclusions. Using the five-year panel also ensures that there is adequate data to carry out robust statistical analyses. Using data over a five-year period instead of over a one-year period allows us to study whether the observed internal corporate governance structures remain effective over time.

Also, in carrying out this research, it made sense to follow the good pattern used by previous researchers that used panel data, such as Yermack (1996), Gompers et al. (2003), and Bhagat et al. (2008). Other researchers who not only used panel data but also used a five-year period, and who influenced this researcher's decision to follow suit and use a five-year time series, are Boyd (1995) and Haniffa and Hudaib (2006).

The decision to use a stratified sample of 200 firms, with 20 firms from ten OECD countries, with five of these countries being from the Anglo-American tradition and five from the Continental tradition, and with the large, medium and low companies from a variety of industries, makes it possible to draw on a large cross-section of companies with different circumstances.

### **5.7 Reasons for selecting the final 200 stratified sample**

This section explains in detail how the final sample was arrived at. The decision to select the final 200 stratified sample was based on several reasons, some theoretical, some empirical and others practical. Several theoretical and empirical studies on accounting disclosure point to the importance of company size and industry in influencing outcome (Lang and Lundholm, 1993; Verrecchia, 2001; Beattie et al., 2004; Hassan and Marston, 2008). For example, Lang and Lundholm (1993), with reference to US companies, suggest that company size is strongly correlated with accounting disclosure. Further theoretical and empirical support is provided by Lang and Lundholm (1993), who point out that accounting compliance and disclosure are more readily carried out by larger companies that can afford these processes more easily than smaller companies. Also, these authors point out that larger companies may also more readily engage in accounting compliance and disclosure because they are under pressure from the public, analysts and the financial press to do so (Lang and Lundholm, 1993). But Marston and Shrive (1991) believe that the reason why larger companies engage more in compliance and disclosure may be because they are more complex, and have varied business operations that span not only geographical locations, but also different industries, products and markets. Basically, these reasons reveal that larger companies, because of their complexities, may find that their activities demand more compliance and disclosure than smaller companies.

However, there are other theoretical and empirical reasons why company size and industry are significant in compliance and disclosure. As some researchers have pointed out, companies that are cross-listed, that is, listed on different foreign exchanges, are more likely to have more disclosure requirements than companies listed only on one exchange (Marston and Shrive, 1991; Haniffa and Cooke, 2002; Black et al., 2006; Melvin and Valero, 2009).



It was also pointed out that company size is also related to nationalisation, taxation, break-ups, regulations based on the costs of political requirements and other factors related to the company (Andreasson, 2009). Consequently, because of these political costs that have implications for nationalisation and regulation, larger companies see the importance of reducing the political costs associated with these practices by increasing accounting and social disclosures (Marston and Shrides, 1991). By taking these initiatives, larger companies attempt to reduce measures that could prevent even more stringent requirements.

The practical reasons motivating the selection of the final 200 stratified sample include the finding that larger companies tend to disclose more than smaller companies (Haniffa and Cooke, 2002; Jiang and Kim, 2004; Margena and Tauringana, 2007). Therefore, if company size is thought to influence compliance and disclosure, in order to get a fair and balanced picture, this study chose companies from the top, middle and bottom, thereby selecting companies that are thought to have more compliance and disclosure and those that are likely to have less.

It was also pointed out that companies differ in disclosure according to the industries in which they operate (Gillan et al., 2003). Considering that this study is based on disclosure found in annual reports and other sources, it follows that the size and industry of the companies selected are also important in studying how these companies behaved before and after the financial crisis.

It is also important to note that the final 200 stratified sampled companies, with 1,000 firm-year observations, represent a large part of the sample. Practical reasons dictated that the sample should include 200 companies, and that these should be taken from 10 of the 34 OECD countries. The fact that these companies were selected from both Anglo-American and Continental European traditions is also significant. The industries selected are very

common industries in both traditions, and the exclusion of the utilities and financial industries ensures that extreme or unique factors cannot skew the results.

## **5.8 Research methodology**

This section discusses in detail the research methodology used and the rationale supporting its selection. Deductive research and inductive research are the two methods that dominate research methodologies used today, and are based on deduction and induction, respectively (Sekaran, 2003). In order to appreciate the differences between these two research methodologies, one must recognise the difference between deduction and induction. Whereas deductive research focuses on testing hypotheses, inductive research is preoccupied with gaining an understanding of the meanings of the phenomenon under study (Saunderson, 2007). The strategies used in conducting these research approaches also differ.

Deductive research is considered to be a scientific approach, where hypotheses are developed and tested using quantitative data. Thus, quantitative research involves starting off with hypotheses, with the aim of developing a theory that is put through rigorous testing. It is through that this approach is objective.

This deductive approach defines hypotheses in terms of relationships between variables. Using a highly structured process, researchers using the deductive approach must measure variables carefully, with the goal of showing the causal relationships between them. Any researcher using the same process is expected to gather objective findings.

In order for the deductive process to work, the researcher must use a sample that is large enough to make statistical generalisations from the findings. As Thietart (2001) points out, deductive research calls for having one or more hypotheses that would be compared against a particular reality to assess the validity of the hypotheses. Therefore, quantitative

research is a methodology that is based on statistical methods, which is thought to yield more objective results than qualitative research (Thietart, 2001).

Inductive research, on the other hand, does not set out to find the causal relationships between things. Its goal is to understand the meaning of what is being observed. In other words, the researcher makes certain observations and then moves from these to making general statements about what was observed. Inductive research is associated with qualitative research, which is concerned with making generalisations, in contrast to deductive research. Inductive, or qualitative, research is therefore less structured and requires a smaller sample. Its major focus is finding meaning from what is being researched, understanding the meaning of the problem and formulating a theory (Thietart, 2001; Saunderson, 2007).

It is important to point out that a goal of both deductive, or quantitative, research and inductive, or qualitative, research is understanding phenomena, but they go about their individual processes differently. While in inductive research, observation leads to finding meaning or interpreting the phenomenon in terms of what is observed, deductive research is concerned with finding the causal relationship between variables (Salomon, 2003). Induction can be seen to rely heavily on interpretivism (Saunderson, 2007).

Salomon (2003) criticises the quantitative research approach on the grounds that hypotheses should not be thought of as hypotheses at all, for the simple reason that the data have to be analysed in order to come up with the hypotheses. However, this researcher notes that quantitative researchers often speak about the generalisability of findings, but can only seldom say what the readers of their research take away from these findings (Salomon, 2003).

This study uses the quantitative research methodology and the deductive research process. The five steps used in this study follow the deductive research process very closely. These steps are developing hypotheses, expressing the hypotheses in operational terms as

variables, testing the operational hypotheses, examining the causal relationships that emanate from the variables and the specific outcome of the study, and, if necessary, modifying the theory based on the findings (Saunders, 2007).

Regression models are used for risk-taking, constant term, corporate governance index, block ownership, institutional ownership, director ownership, board size, board diversity, frequency of board meetings, independent directors, firm-level control variables, country-level control variables and error. Regression models are also used for credit rating and cost of capital.

### **5.9 Construction of corporate governance indices**

This section describes how corporate governance indices are constructed, to show how suitable indices for this study were constructed. In order to carry out this study, it is necessary to use cross-country corporate governance measures, and to develop more comprehensive indices using the OECD Principles of Corporate Governance (2004). However, although some current cross-country governance databases are available, these are often lacking in some of the measures needed for this study, and may not cover as many years or as many countries as needed (Black et al., 2012). It is for this reason that this study constructs new governance indices and an unweighted index, using firm-level corporate governance data.

For each company, this study calculates an overall Corporate Governance Index (CGI) score that will be based on an average of all the criteria used. Additionally, using the OECD Principles (2004), this study calculates five sub-indexes, all of which also use the average score found in each sub-section. The use of weighted or unweighted indices has been criticised because of their strengths and weaknesses. Criticism has been levelled against using an unweighted index because it assumes that each internal corporate governance measure in the index uses an average score, and, as Barako et al. (2006) explain, this is not supported either by theory or practice.

### **5.10 Advantages and disadvantages of weighted and unweighted indices and justify why use unweighted indices**

This section discusses the advantages and disadvantages of using weighted and unweighted indices, showing why the decision was made to use unweighted indices in this study. In a weighted index, different values or scores are assigned to different measures on the basis of the importance of the measure. This means that a weighted index is used to evaluate the relative importance of each measure as it is applied to studying the different companies. The strength of this type of index is that it allows for the findings to be presented in terms of the relative importance of each measure. Another strength of the weighted index is that it is simple and straightforward to use. It also assumes that there is no change in the relationship among measures.

A disadvantage of the weighted index is that it could lead to interpretations that may be misleading when applied to the impact of the different measures on the companies under consideration. Weighted index means using scales of 1-5 or 1-7, such as doing the coding as 1.2.3.4.5.

On the other hand, an unweighted index assigns equal value to all measures of corporate governance. Unlike a weighted index, which is based on attributing relative weight to the measures based on their importance to the whole, the unweighted index does not make this distinction. The unweighted index has a notable advantage: the performance of one measure will not have a dramatic effect on the performance of the whole index. This allows for each measure to be treated equally and for having an index that is more equitable. An unweighted index, where the measures have equal value, assumes that all measures are equal, but according to Barako et al. (2006), this is not usually the case. An unweighted index means coding with zero or one. If the variable is present, the study uses the code one; if not, it uses zero. This is the coding used in this study.

However, for this study, where the objective is to study the performance of companies of different sizes and industries, in the context of Anglo-American and Continental European traditions, it makes better sense to use an unweighted index where each corporate governance measure is treated equally, and where it is easier to identify the differences in the findings that emanate from country and from company difference. Also, an unweighted index seems to be better in evaluating the performance of investments and other aspects of accounting performance. Therefore, the CGI constitutes one of the independent variables used in this study. The other two independent variables are ownership structure and board structure, which are dealt with at length below.

### **5.11 The dependent variables**

This section discusses the dependent variables used in this study: risk-taking, credit rating and cost of capital. These variables were chosen so as to hopefully throw light on the performance of the companies. These dependent variables are operationalised using a variety of measures. Risk-taking is measured using expenditure on research and development (R&D) by dividing R&D on Total Assets, R&D on Sales and R&D Expenditure, as well as volatility in Return on Assets (ROA), which are estimated in equation (1). Similarly, following prior studies and assuming that all relations are linear. In measuring risk using R&D/Assets, Jiraporn, Chatjuthamard, Tong and Kim provided evidence that corporate governance influence corporate risk-taking. Other studies that examined risk using R&D/ Assets are Han, Bose, Hu, Qi and Tian (2015) which looked at the impact of director impact on corporate R&D investment, while Honore, Munari, and de La Potterie (2015) examined corporate governance practices and the impact this had on the companies' R&D intensity. In measuring risk using R&D/Sales, Honore et al. (2015) noted how sales could affect the companies' intensity in investing in R&D, and also how risk can have an impact on decision-making around R&D expenditures.

The four chosen risk measures are intended to be alternate ways of measuring the same type of risk. Thereafter, separate regressions are run to determine the effect of CG on risk-taking. There are countless ways of measuring risk in all types of firms, it includes concepts such as alpha, beta, R-square, standard deviation and Sharpe ratio. Bromiley and Miller (1990) suggested several measures with basis in the financial statements, such as volatility in ROA and R&D divided by total Sales. Also operational measures such as cash holdings and volatility in turnover are common. Furthermore, Johansson (2005), claims total risk to be made up of operative and financial risk as measured by ROA and to be able to make assumptions about risk, it is required to study the changes in the key ratios over time. A higher volatility in ROA corresponds to a lower operative risk.

In measuring risk using ROA volatility, Faccio, Marchica and Mora (2016) identify efficiency in the allocation of capital as influenced by the gender of the CEO, as evident in corporate risk-taking. Also, the degree to which bank governance has an effect on risk-taking is revealed in company performance. In short, ROA is a good measure for risk and demonstrates the role of good corporate governance in financial performance of companies.

Data on credit rating is taken from the long-term issuer credit ratings by Moody, Standard and Poor's, and Fitch. Standard and Poor's, Fitch and Moody have distinctly different measures, as mentioned above. Going from highest to lowest, the three agencies agree on the following broad ratings: premier, high grade, upper medium grade, lower medium, non-investment grade, speculative, highly speculative, substantial risks, extremely speculative, default imminent, and lastly, in default. They all agree that a premier credit rating is reserved for companies with long-term Aaa for Moody's and AAA for Standard and Poor's and Fitch. However, Standard and Poor's credit rating system uses the same notation as Fitch for practically all levels of credit ratings, and the notations are similar to Moody's. Basically, the three credit agencies agree with respect to companies that are rated in the As, Bs and Cs classifications.

Ashbaugh-Skaife and LaFond (2006) showed that corporate governance has a positive effect on a firm's credit rating, while Attig, El Ghouli, Guedhami and Suh (2013) revealed that corporate social responsibility can lead to better credit ratings for firms that commit to this practice. Bo, Lensink, and Murinde (2009) showed a positive link between corporate investment and credit ratings, while Dasilas and Papasyriopoulos (2015) found that credit ratings in both small and large listed companies revealed a link between corporate governance, capital structure and credit ratings. Elbannan (2009) showed that corporate governance and the level of internal control within companies had an impact on credit ratings.

Some researchers point to the difference between Japanese and American rating agencies. One of the criticism is that there are split ratings between these agencies, with Japanese managers believing that the reason for the differences is the fact that American rating agencies do not take the uniqueness of Japanese companies into consideration (Shin and Moore, 2003). There is also the belief that Japanese agencies give higher ratings to Japanese firms than do Moody's and Standard and Poor's, and that Japanese agencies, namely, the Japan Credit Rating Agency (JCR) and Rating and Investment Information (R&I) seldom rate Japanese companies lower than the American agencies (Shin and Moore, 2003). But these researchers point out that in their study, American agencies use tougher ratings measures, and it is often argued that because of Japanese keiretsu affiliation may be seen as contributing to this (Shin and Moore, 2003). But these researchers point out that despite the differences between Japanese and American companies, it was found that there was not much difference in the ratings between Japanese and American raters in terms of financial risk, although there was a difference between ratings with respect to business risk (Shin and Moore, 2003). However, the rating process and the use of the letter grade system is similar among Japanese and American agencies, and the two Japanese agencies use a rating scheme that is similar to Standard and Poor's (Shin and Moore, 2003).



In order to analyse the findings, this study has collapsed the various ratings into 21 credit ratings that show the assessment of ordinal risk. The 21 credit ratings are: D, C, CC, CCC, CCC+, B-, B, B+, BB-, BB, BB+, BBB-, BBB, BBB+, A-, A, A+, AA-, AA, AA+ and AAA. D has an ordinal risk of zero, while C has an ordinal risk of 1, B an ordinal risk of 6 and AAA an ordinal risk of 21, which are estimated in equation (2). Similarly, following prior studies and assuming that all relations are linear.

In the cost of capital, companies have to develop measures to do so. It is important to point out that the cost of capital to a company includes not only the cost of borrowing new capital funds, but also the cost of equity. The cost of borrowing funds is based on what lenders demand from companies. The cost of equity is the percentage that a company's owners would require to invest their money in the company. Therefore, cost of capital must be seen as involving the costs that both lenders and owners demand. This can be appreciated by looking at how publicly owned companies raise their capital. They either borrow money directly from a lender or they sell shares in the company. Therefore, the cost of capital would have to be based on the cost of debt as well as the cost of equity.

Therefore, when companies set out to determine the cost of capital, they must develop a measure that would allow them to capture cost of equity as well as the cost of debt. The cost of equity is sometimes inferred by using the discount rate to determine the present value of the dividends expected (Gode and Mohanram, 2003). One way of measuring the value of equity is by using the Capital Asset Pricing Model (CAPM), which is really the rate of return based on risk (Gode and Mohanram, 2003). But as these authors point out, using the CAPM as a measure based on risk premium is weak, as expected returns often differ markedly from actual returns (Gode and Mohanram, 2003).

Another approach is what is referred to as the ex ante approach, where one infers risk from looking at the expected dividends in terms of the current price. As these authors contend, future dividends are not easily observable, as analysts estimate earnings based on periods, and do not have the whole earnings stream on which to base their analysis (Gode and

Mohanram, 2003). Easton (2004) puts forward a method of estimating the expected rate of return on equity capital, which was shown to be important in determining the cost of capital. According to this author, two methods that have been used to evaluate rate of return on equity capital, namely, the price-earnings (PE) ratio and the price-earnings ratio divided by the short-term earnings rate (PEG ratio), are not accurate because they fail to capture the long-term picture. Easton (2004) therefore promotes the Ohlson-Juettner model.

Gode and Mohanram (2003) explain why the PE and PEG methods do not work well. They note that it is difficult to use either of these approaches because certain assumptions have to be made about a pattern of payout ratios and the value at the end of the forecast period to a perpetual growth rate (Gode and Mohanram, 2003). The model that these authors see as taking these assumptions into consideration in evaluating cost of equity is the Ohlson-Juettner model. This model is based on taking the current price, relating it to earnings per share and assuming a perpetual growth rate (Gode and Mohanram, 2003).

Li and Mohanram (2014) believe that in computing the implied cost of capital, analysts encounter difficulty because only about half of the companies have earnings forecasts. These researchers explain that research has shown that the relations between measures of risk and realised returns are often weak, and in some cases non-existent (Li and Mohanram, 2013).

Li and Mohanram (2013) examine work by Gode and Mohanram (2003) and Easton (2004), and note that while these researchers have attempted to deal with assumptions using the Ohlson and later the Juettner-Nauroth (2005) models, they are still found to be lacking because they only work for about half the companies, and because forecasts by analysts are often unreliable. They recommend the use of a cross-sectional forecasting approach put forward by Hou, van Dijk and Zhang (2012), based on using current information from companies and making forecasts based on this information (Li and Mohanram, 2013). Consideration of these shortcomings is given adequate attention in this study, which are

estimated in equation (3). Similarly, following prior studies and assuming that all relations are linear.

### **5.12 The independent variables**

As mentioned above, the independent variables used in this study are corporate governance index (CGI), ownership structure (OS) and board structure (BS). The measurement of CGI is explained above. These variables are critical to the study, as they are varied in order to see what impact they have on the dependent variables.

The measurement of ownership structure is carried out on the basis of block ownership (BO), which is measured by the number of shares that the block owns; on the basis of institutional ownership (IO), which is measured by the number of shares owned by institutional; on the basis of director ownership (DO), which is measured by the number of shares owned by the director.

Difference in ownership structure is seen as important to costs. For example, Anderson, Mansi and Reeb (2003) point out that costs are affected by ownership structure. The rationale for this is that when there is much manager-shareholder conflict, there is a greater need for surveillance, which increases costs (Anderson et al., 2003). In founding family ownership situations, agency costs are lower, as the interests of managers and owners become more aligned (Anderson et al., 2003). Anderson et al. (2003) find that there were fewer conflicts between those who owned the companies and those who were lenders to the company. This may be due to the fact that there was significant investment of family resources in the companies (Anderson et al., 2003).

Lin and Shen (2015) note that ownership of family companies tends to have the opportunity to influence their credit ratings, because they have the possibility of showing greater earnings. However, as these researchers point out, while a family firm may be able to

manipulate earnings, if family idiosyncratic risk is observed, this would lessen the company's credit rating (Lin and Shen, 2015).

Dasilas and Papasyriopoulos (2015) show that capital structure, credit rating and corporate governance are closely related in small as well as large Greek companies. Corporate governance and credit ratings were seen to significantly affect the structure of the organisations.

Lang and Jagtiani (2010) point out that corporate governance and credit risk management were important elements contributing to the 2007 financial crisis. The strains that took place as a result of poor risk management and the lack of corporate governance led to the collapse of the financial market (Lang and Jagtiani, 2010).

Board structure is measured on the basis of independent directors (ID), on the basis of board size (BS), on the basis of board diversity (BD) and on the basis of the frequency of board meetings (FBM). Independent directors refers to directors that are from outside the company. Board diversity refers to the number of females on the board, while frequency of board meetings refers to how often the board meets.

### **5.13 The control variables**

This section describes the control variables used in this study. This study will identify two groups of these variables. One group will deal with company characteristics, including the size of the company, its sales growth or other measurement of growth, its gearing of leverage, as well as industry dummies, year dummies, audit company size and company profitability.

**Table 4: Variable Definitions and Measurement**

Variable	Acronym	Measurement
<b>1- CG Mechanisms</b>	<b>CGM</b>	
<b>Corporate Governance Index</b>	CGI	Survey instrument based on the OECD 2004
<b>Ownership Structure:</b>	<b>OS</b>	
Block Ownership	BO	The ratio of total number of ordinary shares held by block shareholders with at least 5%, to the total number of ordinary shares
Institutional Ownership	IO	The ratio of total number of ordinary shares held by institutional shareholders with at least 5%, to the total number of ordinary shares
Director Ownership	DO	The number of common stocks held by directors on the board to the total number of outstanding common shares
<b>Board Structure:</b>	<b>BS</b>	
Independent Directors	ID	The ratio of independent directors on the board to the total board members
Board Size	BZ	The total number of directors on the board at the end of a financial year
Board Diversity	BD	A binary number of one if a firm's board has at least one male and one female at the end of a financial year, and zero otherwise
Frequency of Board Meetings	FBM	A binary number of one if a firm's board of directors meets at least four times in a financial year, and zero otherwise.
<b>2- Risk-Taking</b>	<b>RT</b>	
Research and Development/ Assets	R&D/Assets	Natural logarithm of the ratio of R&D expenditure to total assets
Research and Development/ Sales	R&D/Sales	Natural logarithm of the ratio of R&D expenditure to sales
Research and Development Expenditure	R&D Expenditure	Natural logarithm of R&D expenditure
Volatility in ROA	VAP	Volatility of Return on assets (ROA)
<b>3- Credit Rating</b>	<b>CR</b>	Firm long-term credit rating obtained from Standard & Poor's (S&P's) ratings ranging from AAA (highest rating) to D (lowest rating- debt in payment default).
<b>4- Cost of Capital</b>	<b>COC</b>	The average of the 2 metrics: Modified Price-Earning Growth Model and Modified Economy - Wide Growth Model
<b>5- Control Variables</b>	<b>CV</b>	
Sales Growth	SG	The ratio of current year's sales minus previous year's sales, all divided by previous year's sales
Firm Size	FS	Natural logarithm of the book value of total assets
Audit Committee No.	AC	Total number of Audit Committee
CG Committee No.	CGC	Total number of Corporate Governance Committee
Leverage	LVG	The ratio of total debt to total assets
Capital Gain Yield	CGY	The rise in the stock price divided by the original price of the security
Stock Market Capitalisation	SMC	The market value of the shares outstanding
Corruption Index	CI	The misuse of public power for private benefit
Inflation	INF	The rate at which the general level of prices for goods and services is rising
GDP Per Capita	GPRPC	Gross domestic product (GDP) divided by number of people in the country
Population	POP	People living in a country
Masculinity	MAS	A preference in society for achievement, heroism, assertiveness and material rewards for success
Power Distance	PD	The degree to which the less powerful members of a society accept and expect that power is distributed unequally
Anglo-American	AA	A dummy variable for Anglo American countries (1), Continental countries (0)
Country	Cont	A dummy variable for each country: UK (DU UK)... US (DU US)
Year	Y	A dummy variable for each year of the ten years from 2010-2014 2010 (DU 10), 2011 (DU11) ... 2014 (DU14)

Company size is based on the natural logarithm of the book value of the total assets, while sales growth is shown as the ratio of the current year's sales minus the previous year's sales, all divided by the previous year's sales. Another company-level factor is capital structure, which involves gearing or leverage, which is the ratio of total debt to total assets. The country dummies for each country are given, with the United Kingdom shown as DU UK and the United States shown as DU US. A year dummy is shown for each of the years 2010 to 2014, with 2010 shown as DU10, 2011 as DU11, and 2014 shown as DU14. Other firm-level variables that will be considered include the size of the audit firm responsible for auditing the companies. Audit committee members, corporate governance committee members and capital gain yield are also control variables, as they distinguish between the different companies.

The second group deals with country-level control variables. These include the country's legal system, whether common law or civil law. Countries with common law systems tend to have better protection for shareholders than countries with civil law systems. The accounting system used, whether based on international or local accounting standards, is also important, as different systems have different reporting requirements and notions of acceptable practice. The corporate governance system used, whether Anglo-American or Continental-European, also has different requirements and different protections for shareholders. A country's GDP gives an indication of the prosperity and size of the economy, and the level of investment in the economy. The level of corruption in the country, its inflation rate and the treatment of shareholders' rights are all factors that are significant to investors, affecting the amount of caution that an investor should exercise when investing in a particular economy. Population size, culture and cultural variables are important factors that shed light on an economy. This information is accessed from the World Bank website and other global sources of financial information on countries, as well as from the World Federation of Exchanges. Hofstede's cultural variables also help identify the manner in which companies in particular countries approach business dealings. For example, countries are compared in terms of cultural factors, such as power distance,

individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence, which influence how companies and their officials relate to business partners (Hofstede, 2015). Firm-level variables and country-level variables are important as they provide important factors that influence the functioning of the companies being studied. These variables were seen to make a major difference in the outcome of this study.

#### 5.14 Regression models

$$RT_{it} = \alpha_0 + \beta_1 CGI_{it} + \beta_2 BO_{it} + \beta_3 IO_{it} + \beta_4 DO_{it} + \beta_6 BS_{it} + \beta_7 BD_{it} + \beta_8 FBM_{it} + \beta_9 ID_{it} + \sum_{i=1}^n \beta_i FCONTROLS_{it} + \sum_{i=1}^n \beta_i CCONTROLS_{it} + \varepsilon_{it} \quad (1)$$

Where:

RT	- Risk-Taking
$\alpha_0$	- Constant Term
CGI	- Corporate Governance Index
BO	- Block Ownership
IO	- Institutional Ownership
DO	- Director Ownership
BS	- Board Size
BD	- Board Diversity
FBM	- Frequency of Board Meetings
ID	- Independent Directors
FCONTROLS	- Firm level Control Variables for firm size, sales growth, audit committee number, corporate committee number, leverage, capital gain yield and five year dummies for 2010 to 2014 inclusive. To avoid the dummy variable trap, year 2013 is excluded in estimating the equation
CCONTROLS	- Country level Control Variables for stock market capitalisation, corruption index, inflation, GDP per capita, Hofstede's culture variables (masculinity and power distance), population, exchange rate and the

country dummies for each country are given, with as DU UK, DU US..

$\varepsilon$  - Error term

$$CR_{it} = \alpha_0 + \beta_1 CGI_{it} + \beta_2 BO_{it} + \beta_3 IO_{it} + \beta_4 DO_{it} + \beta_5 BS_{it} + \beta_6 BD_{it} + \beta_7 FBM_{it} + \beta_8 ID_{it} + \sum_{i=1}^n \beta_i FCONTROLS_{it} + \sum_{i=1}^n \beta_i CCONTROLS_{it} + \varepsilon_{it} \quad (2)$$

**Where:**

CR	- Credit Rating
$\alpha_0$	- Constant Term
CGI	- Corporate Governance Index
BO	- Block Ownership
IO	- Institutional Ownership
DO	- Director Ownership
BS	- Board Size
BD	- Board Diversity
FBM	- Frequency of Board Meetings
ID	- Independent Directors
FCONTROLS	- Firm level Control Variables for firm size, sales growth, audit committee number, corporate committee number, leverage, capital gain yield and five year dummies for 2010 to 2014 inclusive. To avoid the dummy variable trap, year 2013 is excluded in estimating the equation
CCONTROLS	- Country level Control Variables for stock market capitalisation, corruption index, inflation, GDP per capita, Hofstede's culture variables (masculinity and power distance), population, exchange rate and the country dummies for each country are given, with as DU UK, DU US..
$\varepsilon$	- Error term



$$COC_{it} = \alpha_0 + \beta_1 CGI_{it} + \beta_2 BO_{it} + \beta_3 IO_{it} + \beta_4 DO_{it} + \beta_6 BS_{it} + \beta_7 BD_{it} + \beta_8 FBM_{it} + \beta_9 ID_{it} + \sum_{i=1}^n \beta_i FCONTROLS_{it} + \sum_{i=1}^n \beta_i CCONTROLS_{it} + \varepsilon_{it} \quad (3)$$

**Where:**

COC	- Cost of Capital
$\alpha_0$	- Constant Term
CGI	- Corporate Governance Index
BO	- Block Ownership
IO	- Institutional Ownership
DO	- Director Ownership
BS	- Board Size
BD	- Board Diversity
FBM	- Frequency of Board Meetings
ID	- Independent Directors
FCONTROLS	- Firm level Control Variables for firm size, sales growth, audit committee number, corporate committee number, leverage, capital gain yield and five year dummies for 2010 to 2014 inclusive. To avoid the dummy variable trap, year 2013 is excluded in estimating the equation
CCONTROLS	- Country level Control Variables for stock market capitalisation, corruption index, inflation, GDP per capita, Hofstede's culture variables (masculinity and power distance), population, exchange rate and the country dummies for each country are given, with as DU UK, DU US..
$\varepsilon$	- Error term

### **5.15 Chapter summary**

This section provides a summary for the chapter, highlighting what was discussed. It points to the creation of the research design, indicating some of the potential drawbacks that could prevent the study from being generalisable to other examinations of how corporate governance mechanisms have an effect on corporate performance in terms of risk-taking, credit rating and cost of capital.

This chapter has discussed the research design used in this study. It outlines the research paradigms, pointing out the rationale behind the use of qualitative and quantitative research methods and the positivist approach that is part of quantitative research. Based on a discussion of what is to be achieved in this study, namely, to examine how corporate governance mechanisms have an effect on corporate performance in terms of risk-taking, credit rating and cost of capital, this chapter has demonstrated why a quantitative research approach is recommended. The positivist approach was also seen to be the type of research approach taken in studies in the fields of business, accounting and economics. Based on this discussion, it was shown that the research design was well chosen.

This chapter also discussed the selection of the sample, detailing why the study used 200 firms from ten OECD countries over a period of five years after the 2007-08 global financial crisis, and why it was significant to use five countries from each of Anglo-American and Continental European accounting systems. In all, 20 companies, both small and large, were chosen from both systems in order to provide a good basis for comparison. The chosen companies were drawn from common industries, but, in the analysis, companies from utilities and financials industries were excluded because they are heavily regulated, a factor that would have a major influence on their governance structures and financial performance. This chapter also provided the sources from which data was obtained. It was shown that there were two main types of data: the first, from internal corporate governance variables, were obtained from annual reports from the Perfect

Information Database and the companies' websites. The second type of data came from annual stock market and financial accounting performance variables, and were collected from DataStream and annual reports. Data sources were corporate governance data, financial data, credit rating data, and country- and firm-level data.

Information was presented for the selection and justification of the sample. The criteria for selecting the sample were given, and reasons were given for the selection of the final 200 stratified sample. Explanations were given for excluding certain companies from the sample, and how other companies were substituted. In short, this chapter explains why the particular sample was appropriate for this study.

The research methodology was provided in detail, with explanation of how the corporate indices were developed. Details were provided on how the variables were organised. The dependent variables include risk-taking, credit rating and cost of capital, and the independent variables include corporate governance index, ownership structure and board structure. Ownership structure includes block ownership, institutional ownership and director ownership; board structure includes independent directors, board size, board diversity and frequency of board meetings. Control variables included country-level variables and firm-level variables. These variables were important in looking at the various factors that have an impact on corporate governance and that affect the performance of the companies over the study period.

The design of the study also includes regression models, which would be carried out in terms of risk-taking, credit rating and cost of capital, and in terms of the variables mentioned above. It is with this research design that the next chapter moves into the actual research, with the aim of pointing out the procedure followed and the findings that resulted.

## **Chapter 6: Empirical Results and Discussion**

### **6.1 Introduction**

Chapter 6 provides the empirical results and discussion of this study. This chapter has four main objectives. The first is to describe in detail the OECD Governance Index used in this study, and, using descriptive statistics, to show how firms belonging to both the Anglo-American tradition and the Continental European tradition comply with the OECD Corporate Governance Code. This objective also includes looking at the internal corporate governance provisions according to tradition and noting how compliant these firms are with the OECD corporate governance principles. The second objective is to report on the findings of the study using bivariate or correlational analysis and discuss the significance of these findings in terms of how corporate governance affects risk-taking, credit rating and cost of capital for the firms studied. More specifically, to show the impact of the OECD Corporate Governance Index, based on firms' internal characteristics, on risk-taking, credit rating and cost of capital. The third objective is to report on the findings using multivariate regression analyses and discuss the significance of these findings with respect to corporate governance impact on risk-taking, credit rating and cost of capital. A multivariate regression of the OECD Corporate Governance Index is carried out on all control variables to further ascertain the key determinants of the Index, as well as its relationship to the other variables. The fourth objective is to report on the robustness or sensitivity of these findings.

The remainder of this chapter is divided according to these objectives. Section 6.1 deals with the descriptive statistics of the level of compliance of all firms in this study with the OECD Corporate Governance Index. Section 6.2 reports on the bivariate and correlational analysis in terms of internal characteristics of the firms and how corporate governance affects risk-taking, credit rating and cost of capital. Section 6.3 reports on the multivariate analysis of how independent and control variables impact firm performance as measured by risk-taking, credit rating and cost of capital. More specifically, the last two objectives involve reporting on the findings based on three models, with corporate governance index as the independent variable. Section 6.4 deals with the robustness of the study, and Section 6.5 summarises the chapter.

## **6.2 Descriptive statistics based on the full sample**

Table 5 reports on the firms' level of compliance with the OECD corporate governance principles. This study shows that the characteristics included in the CGI are rights of shareholders, equitable treatment of shareholders, the role of stakeholders in corporate governance, disclosure and transparency, and responsibilities of the board.

In this table, several questions are listed under each of these characteristics, and the compliance levels for all firms are shown as percentages for the five years under study. This table therefore describes the level of compliance of all firms on different dimensions of the characteristics. The rights of shareholders are seen as important in the literature; it is explained that this level of compliance is important for the wellbeing of shareholders. Of the 13 items representing the rights of shareholders, one was 100%, three were in the 80s, one in the 70s, one in the 60s and one in the 50s. The significance of these findings is that on the most important and common characteristics that reveal compliance, there was a high level of compliance. However, the areas of low compliance suggest that these may be areas without much conflict. For example, for the question, "Does the company have anti-takeover defences, "cross shareholding" is shown as having a level of compliance as only between 16.5 and 17.0%. The response to "Is a name list of board attendance available" was 10.9%, increasing from 9.6% to 12.0% between 2010 and 2014. This shows that while there is much compliance among the majority of firms in certain areas, there is a low level of compliance in other areas, which may be related to the different traditions of the firms.

With respect to Rights of Shareholders, one of the first questions asked was "Does the company provide other ownership rights besides voting?" Based on this question, the level of compliance was 99.9% showing that all firms complied fully with OECD principles. The highest scores under the Rights of Shareholders section were 84.4% for clarity in dividend policy amount and explanation, 83.1% for presentation of board remuneration to shareholders, and 82.5% of compliance was achieved among the firms based on the quality of notice for shareholders' meetings in the past year for appointment of directors, with provision of their names and background. The level of compliance with all of these characteristics increased over the five years under study.

**Table 5: The Levels of Compliance with the Individual Internal Corporate Governance Provisions among the Sampled Firms.**

Individual Internal Corporate Governance Provisions of OECD CGI	Compliance Levels Among Firms (%)					
	All	2010	2011	2012	2013	2014
<b>Section A -- Rights of Shareholders</b>						
Does the company provide other ownership rights besides voting?	100.0	100.0	100.0	100.0	100.0	100.0
Do the shareholders approve annually the decision on how much to remunerate board members or executives?	68.6	64.1	65.0	69.0	73.0	73.0
Are shareholders presented with board remuneration?	83.1	80.3	82.0	84.0	85.0	85.0
Are the names and backgrounds of the directors appointed presented in a Quality of Notice to call Shareholders Meeting in the past one year?	82.5	78.3	81.0	83.0	84.0	87.0
Are the names and fees of the auditors appointed presented in a Quality of Notice to call Shareholders Meeting in the past one year?	75.7	72.2	75.0	76.0	78.0	78.0
Is the amount and explanation for Dividend policy presented in the Quality of Notice to call Shareholders Meeting in the past one year?	50.2	46.5	49.0	49.0	53.0	55.0
In the last two years, did the Chairman of the Board attend at least one of the AGMs?	29.7	26.3	27.0	30.0	33.0	34.0
In the last two years, did the CEO/Managing Director attend at least one of the AGMs?	33.4	30.8	30.0	33.0	36.0	38.0
Does the company make available a list of the board members in attendance at AGMs?	8.5	7.6	8.0	9.0	10.0	9.0
Do the minutes from the AGM show whether shareholders had an opportunity to ask questions or raise issues with respect to the past year?	10.9	9.6	10.0	12.0	12.0	12.0
Dividend policy amount and explanation for payment are clear	84.4	83.3	85.0	84.0	85.0	86.0
Does the company have anti-takeover defenses "Cross shareholding"?	16.5	16.2	17.0	17.0	17.0	17.0
Board members hold more than 25% of share outstanding	28.6	28.8	29.0	29.0	29.0	28.0
<b>Section B -- Equitable Treatment of Shareholders</b>						
Is one-share, one-vote a rule that the company uses?	92.0	92.4	92.0	92.0	92.0	92.0
Is there any mechanism to allow minority shareholders to influence board composition?	10.4	10.6	11.0	11.0	11.0	10.0
Have there been any cases of insider trading involving company directors and management in the past two years?	0.2	0.0	0.0	0.0	1.0	1.0
Are explanations or rationales provided by the company for any related-party transactions affecting the corporation?	88.5	86.9	88.0	89.0	90.0	89.0
Is the company part of an economic group in which the economic group or controlling shareholder is in control of the key suppliers and customers of the company and/or are in similar businesses as the company?	7.6	7.6	8.0	8.0	8.0	8.0
Has the company been involved in any non-compliance case pertaining to related-party transactions in the past one year?	1.5	1.5	2.0	2.0	2.0	2.0
Does the company facilitate voting by proxy?	86.6	82.2	85.0	87.0	89.0	90.0
Are the documents needed to give proxy specified in the notice to shareholders?	86.6	82.8	85.0	87.0	89.0	90.0
Does the company ensure that shareholders receive notice of general shareholders' meeting 30 days or more in advance of these meetings?	90.2	86.4	88.0	90.0	93.0	94.0
<b>Section C -- The Role of Stakeholders in Corporate Governance</b>						
Are the safety and welfare of its employees explicitly mentioned by the company?	93.2	92.4	94.0	94.0	94.0	93.0
Are the role of key stakeholders such as customers or the community at large, including creditors or suppliers mentioned explicitly by the company?	88.8	88.4	89.0	89.0	89.0	89.0
Are environmental issues explicitly mentioned by the company in its public communications?	94.7	93.9	95.0	95.0	95.0	95.0
Are ESOP (employee share option program), or other long-term employee incentive plan linked to shareholder value creation, provided to employees by the company?	77.7	76.8	78.0	78.0	78.0	78.0
<b>Section D -- Disclosure and Transparency</b>						
Is there a transparent ownership structure available for the company? Breakdown of shareholdings	59.7	59.1	60.0	60.0	60.0	60.0
Is it easy to identify beneficial ownership of the company?	96.9	98.0	97.0	98.0	97.0	96.0
Does the company disclose director shareholdings?	84.5	84.5	85.0	85.0	85.0	84.0
Does the company disclose management shareholding?	45.1	45.5	45.0	45.0	45.0	45.0
Does the company possess a dispersed ownership structure?	48.9	48.5	49.0	49.0	49.0	49.0
Is the company's actual ownership structure obscured by cross-shareholdings?	4.2	5.1	4.0	4.0	4.0	4.0
Is it possible to assess the quality of the annual report, in particular, financial performance?	98.7	98.0	99.0	99.0	99.0	99.0
Is it possible to assess the quality of the annual report, in particular, business operations and the company's competitive position?	97.8	97.5	98.0	98.0	98.0	98.0
Is it possible to assess the quality of the annual report, in particular, the backgrounds of board members?	64.4	63.6	65.0	65.0	65.0	65.0
Is it possible to assess the quality of the annual report, in particular, the basis of the remuneration of board members?	84.8	83.8	85.0	85.0	85.0	85.0
Is it possible to assess the quality of the annual report, in particular, operating risks?	97.2	96.5	98.0	98.0	98.0	97.0
Are there any statements requiring directors to report their transactions of company stock?	34.3	33.3	35.0	35.0	35.0	35.0
Is the company's accounting carried out in accordance with an internationally recognised accounting standard?	72.8	65.2	74.0	75.0	76.0	76.0
Is the company's auditing carried out in accordance with an internal audit operation that is established as a separate unit in the company?	98.7	98.0	99.0	99.0	99.0	99.0
Does the company perform an annual audit using independent and reputable auditors?	99.2	98.5	100.0	100.0	100.0	99.0
Does the audited financial statements have any accounting qualifications apart from the qualification on Uncertainty of Situation?	4.0	4.0	4.0	4.0	4.0	4.0
Does the company offer multiple channels of access to information?	99.1	98.5	100.0	100.0	100.0	99.0
Does the company disclose the financial report in a timely manner?	99.7	99.0	100.0	100.0	100.0	100.0
Does the company have a website, disclosing up-to-date information?	87.0	83.3	87.0	86.0	90.0	89.0
<b>Section E -- Responsibilities of the Board</b>						
Does the company have its own written corporate governance rules?	0.5	0.5	1.0	1.0	1.0	1.0
Does the company's board of directors have a code of ethics or statement of business conduct that all directors and employees must adhere to?	98.7	98.0	99.0	99.0	99.0	99.0
Does the company have corporate vision/mission statements?	63.8	64.6	64.0	64.0	64.0	63.0
Does the regulatory agency have any evidence from the regulatory agency over the past three years that the company has been non-compliant with rules and regulations?	39.7	37.9	38.0	41.0	41.0	41.0
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Attendance	64.9	63.6	65.0	65.0	66.0	66.0
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Internal control	77.4	76.3	77.0	78.0	79.0	77.0
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Management control	76.5	75.3	76.0	77.0	78.0	77.0
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Legal compliance	53.1	52.0	53.0	53.0	55.0	54.0
Assess the quality and content of the Audit Committee Report in the annual report for Conclusion or opinion	54.7	53.0	54.0	55.0	56.0	56.0
Have board members participated in the Securities Regulation Committee (or equivalent) training on corporate governance?	22.1	20.2	22.0	23.0	23.0	23.0
How many board meetings does the company have per year?	99.1	99.0	100.0	100.0	100.0	98.0
Is the chairman and the CEO the same person?	24.9	24.2	26.0	25.0	25.0	26.0
Does the company provide an option scheme with incentives for top management?	85.3	84.3	86.0	86.0	86.0	85.0
Does the board appoint independent committees with independent members to carry out various critical responsibilities such as: audit, compensation and director nomination?	90.2	89.4	91.0	91.0	91.0	90.0
Does the company provide contact details for a specific investor relations person?	58.2	57.6	59.0	59.0	59.0	58.0
Does the company have a board of directors report?	38.9	37.9	40.0	39.0	39.0	39.0
Does the company disclose the amounts paid to the independent nonexecutive directors?	97.7	97.0	98.0	98.0	98.0	98.0
Do the company provide training to directors (including executive and nonexecutive directors)?	76.1	74.7	76.0	77.0	77.0	77.0

Equitable treatment of shareholders is another important characteristic of the CGI, and firms were asked whether they offered a one-share-one-vote policy; 92.0% of firms said they did. Except for 2010, when the level was 92.4%, the remaining years were all at 92.0%. When asked “Does the company provide rational explanations for related-party transactions affecting the corporation?” the level of compliance among the firms with respect to the firms providing rational explanations was 88.5%. However, there was some fluctuation on this characteristic over the years, with the figure in 2010 being 86.9%, increasing to 88.0%, 89.0%, 90.0% and 89.0% in subsequent years. Generally, this level of compliance can be seen as good. Most of the firms facilitated voting by proxy, with an overall compliance rate of 86.6%, and a rate of 90.0% in 2014. Regarding providing documents to give proxy and giving 30 days’ notice of shareholders’ meetings, the levels of compliance for all firms were 86.6% and 90.2%, with an average of 90% and 94.0% respectively for the five-year study period.

The levels of compliance on the role of stakeholders in corporate governance, disclosure and transparency, and responsibilities of the board were high, although there were some areas where it was low on many dimensions of characteristics. For example, on the role of stakeholders in corporate governance, scores were high on all the questions asked, with 93.2% for firms explicitly mentioning the safety and welfare of their employees. This percentage remained relatively high, fluctuating about one percentage point over the five years. Mention of key stakeholders and mention of environmental issues in public communications, as well as mention of firms providing long-term employee incentives, were embraced by some firms but not others. On the last of these issues, namely long-term employee incentives, there was an average compliance level of 77.7%, rising only slightly to 78.0% in 2014.

However, on the characteristic of disclosure and transparency, there was disparity in compliance levels for many of the questions asked. While ease of identifying beneficial ownership had an overall average of 96.9% compliance, only 45.1% of firms complied with disclosing management shareholding. With respect to timely disclosure of financial reports, 100% of firms were in compliance in 2014; this was practically consistent for the five years. The level of compliance was low at 4.2% of the companies, showing a decline from 5.1% in 2010 to 4.0% in the following years.

In terms of responsibility of the board, levels of compliance ranged from 98.7 % of firms having a board of directors that provides a code of ethics, to only 38.9% of companies having a board

of directors' report. Generally, levels of compliance with responsibilities of the board are relatively high, with the majority of firms adhering to these responsibilities. Of the 18 dimensions of these characteristics, only four were below 50%. In the section, boards were asked, "Is the chairman and the CEO the same person?" scored only 24.9%, showing that there was a high level of compliance among the firms with respect to the chairman also being the CEO. This low score demonstrated the importance of agency theory in influencing firms to keep these two roles separate.

Agency, stewardship, resource dependence, legitimacy and institutional theories are all important in explaining why these particular characteristics mentioned above were included in the CGI for this study (Conheady, McIlkenny, Opong & Pignatel, 2015). The relationship between owner and manager is one of principal and agent (Kiel & Nicholson, 2003). The assumption is often made, and this is evident in real-life situations, that agents often cannot be trusted to look after the owners' interest, when they may see the opportunity to look after their own interests. Therefore, the means for monitoring the operation of agents must exist, for it is through such action that owners or shareholders would be able to ensure that their interests are being safeguarded (Abdullah & Valentine, 2009).

This theory can also be used to explain the responsibilities of the board, as boards monitor the actions and performance of management, thereby protecting the interests of shareholders or owners (Sternberg, 1997). Therefore, when there is strong independence of the board, it is likely that there will be more monitoring carried out by the board (Sternberg, 1997). Agency theory shows that there is a greater risk when corporate governance does not take into consideration the wellbeing of stakeholders. Therefore, in considering risk-taking, credit risk and cost of capital, it is important to look at the interests of shareholders as well as the responsibilities of the board.

However, stewardship theory can also be applied to the board, for while agency theory sees outside or independent board members as carrying out roles that focus on audit, compensation and director nomination, stewardship theory sees executives or insider directors as managing the interests of shareholders. On the questions under the role of the stakeholders in corporate governance, stewardship theory could also apply, as company managers are seen as playing an important role of protecting employees and other stakeholders (Letting et al., 2012). The



understanding is that internal executives and directors have good knowledge of the firm and its shareholders.

In terms of the board of directors, resource dependence theory points out that individual board members help firms secure resources (Abdullah & Valentine, 2009; Letting et al., 2012). In this study, about three quarters of the firms see their directors as an important resource. For example, in the section, Responsibilities of the Board, one question asked is, “Does the company provide training to directors (including executive and nonexecutive directors)?” This question is based on discovering how many firms see their directors as providing resources to the firm through the interrelations of these directors with other parts of the community, thereby providing access to resources to the firms. (Chen & Roberts, 2010).

The questions asked under the Role of Stakeholders section implicitly highlight the issue of legitimacy, as they pertain to how firms deal with the safety and welfare of workers, environmental issues, long-term employee incentive plans and key stakeholders in general. This can be seen as displaying the importance of legitimacy theory in this CGI. Legitimacy theory deals with the institutional legitimacy of the firm, established by firms acting in ways that demonstrate their support of social values (Chen & Roberts, 2010).

Institutional theory also plays an important part in this study, for there is a link between legitimacy theory and institutional theory, since a firm can adopt institutional forms and rules which give it legitimacy within its environment (Chen & Roberts, 2010). The CGI in this study, demonstrates the importance of shareholders, managers, boards and other stakeholders in assessing corporate governance.

Overall, firms showed a consistently high level of compliance with OECD corporate governance principles across the five years under study. In terms of disclosure and transparency, there appears to be consistency across the years. However, there are different levels of compliance among firms; for example, only 34.3% of firms report having a statement requesting directors to report their company stock transactions.

The use of the CGI in this study is supported by other researchers who feel that using an index is superior to using individual corporate mechanisms (Gompers et al., 2003; Roe, 2003; Holm & Zaman, 2012). The combination of provisions that were included in this CGI have shown positive results in the past; as Gompers et al. (2004) observe, where shareholders' rights are

weak and democracy is lacking, agency conflicts are seen as commonplace. Therefore, several characteristics are important in establishing corporate governance. Some of the more important of these characteristics used in this study are shareholder rights, equitable treatment of shareholders, the role of shareholders in corporate governance, disclosure and transparency, and responsibilities of the board in how corporate governance could impact risk-taking, credit rating, and cost of capital as drawn up in our hypotheses

In short, Table 5 shows that the countries that have been used in this study shows take the rights of the shareholders seriously. Most of the firms demonstrate equitable treatment of shareholders. Only a minority of firms demonstrate that they possess mechanisms that allow shareholders to influence the composition of the board (10.4%). This number fluctuates slightly, starting at 10.6% and ending at 10.0%. Only a small percentage of firms were involved in insider trading involving inside directors and managers; this does not appear to be an ongoing problem, as it was observed only in 2013 and 2014, thereby contributing to an overall percentage of 0.2% over the five years under study. Similarly, a small number of firms were found to be part of an economic group that had control over key suppliers, customers, and similar businesses, or who owned similar businesses, thereby reducing equitable treatment of shareholders. This percentage is constant at about 8.0. Non-compliance with respect to related-party transactions within the past year was found only in 1.5% of the firms, showing that the majority of firms engage in equitable treatment of shareholders. The majority of firms demonstrate their compliance with other good corporate governance practices. The findings also reveal evidence that the firms overall support the application of agency, stewardship, resource dependence, legitimacy and institutional theories in explaining their adoption of corporate governance.

### **6.3 Descriptive statistics for level of compliance to OECD CGI based on country difference**

While it is important to look at the overall compliance level for the full sample of firms used in the study, it is also important to look at the firms based on country affiliation. Table 6 summarises the descriptive statistics based on country, showing the differences in levels of compliance among countries.

To facilitate comparison for the different countries, the findings reveal the percentage levels of compliance for the pooled sample, as well as the percentage level of compliance for each of

the five years reported. Applying the OECD CGI to the various firms based on their country membership reveals that the mean for each of the five years shows no major variations. These findings are shown in Panel A. The mean for all firms between 2010 and 2014 is 39.85, ranging from 38.73 in 2010 to 40.51 in 2014. This means that the level of compliance for our sample of firms increased, and the standard deviation was about 7.04.

Although the firms demonstrate high compliance with some practices and low compliance with others, the overall level of compliance, as reported in Table 6, shows a level of compliance among all firms over the five years from 2010 to 2014 to be higher among U.K. firms, where the level of compliance was 44.87%. The level of compliance for Ireland firms was 40.66%. For France firms, compliance was 44.98%. For Germany firms, level of compliance was 42.03%, and for Italy firms it was 41.34%. The level of compliance for these firms was higher than the mean for all firms in the pooled sample. U.S. firms had a compliance level of 39.44% in 2010, which is approximately the level of compliance for the pooled sample. Spain's compliance level is slightly lower, at 36.91%. For Japan, in this period the level of compliance with the OECD principles was only 26.83%.

The results show no substantial change in the level of compliance over the five years, although all improved. Compliance increased from 38.73% to 40.51% in 2014. U.K. firms went from 44.30% to 45.25%, Irish firms from 40.15% to 41.00%, Australian firms from 37.00% to 42.20%, Canadian firms from 37.05% to 42.20%, French firms from 43.20% to 45.90%, German firms from 41.10% to 42.30% and Italian firms from 40.75% to 42.00%. The United States firms remained quite constant, from 39.35% to 39.45%, a very small improvement. Spanish firms show a change from 34.65% in 2010 to 37.40%, while Japanese firms show a change from 26.25% to 28.00%.

**Table 6: Summary Descriptive Statistics for the OECD Corporate Governance Index**

The OECD CGI	Mean	T-Test	Std. Dev	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
<b>Panel A: All Firm Years</b>	39.85		7.04	-1.35	2.56	1.00	52.00
2010	38.73		8.30	-1.66	3.93	1.00	52.00
2011	39.67		6.84	-1.07	0.99	16.00	52.00
2012	39.98		6.66	-1.11	1.21	16.00	52.00
2013	40.37		6.68	-1.19	1.38	16.00	52.00
2014	40.51		6.49	-1.16	1.31	17.00	52.00
<b>Panel B: UK Firms</b>	44.87	.086(.000)***	3.40	-1.07	1.92	36.00	50.00
2010	44.30	.086(.001)***	3.89	-0.99	0.55	36.00	50.00
2011	44.80	.090(.000)***	3.41	-1.09	1.51	36.00	50.00
2012	44.70	.083(.001)***	3.36	-1.07	1.66	36.00	50.00
2013	45.30	.086(.000)***	3.13	-1.11	3.15	36.00	50.00
2014	45.25	.083(.000)***	3.19	-1.07	2.71	36.00	50.00
<b>Panel C: Ireland Firms</b>	40.66	.011(.285)	4.65	-0.90	1.08	28.80	47.00
2010	40.15	.013(.602)	4.77	-0.58	-0.03	29.00	47.00
2011	40.25	.010(.688)	4.85	-0.96	1.53	27.00	47.00
2012	40.95	.017(.491)	3.97	-0.26	-0.93	34.00	47.00
2013	40.95	.010(.683)	4.85	-1.34	2.27	27.00	47.00
2014	41.00	.008(.719)	4.79	-1.38	2.55	27.00	47.00
<b>Panel D: USA Firms</b>	39.44	.009(.396)	2.82	-0.53	-0.85	34.00	43.00
2010	39.35	.000(.981)	2.89	-0.59	-0.77	34.00	43.00
2011	39.50	.002(.910)	2.76	-0.50	-0.93	34.00	43.00
2012	39.50	.008(.738)	2.72	-0.49	-0.82	34.00	43.00
2013	39.40	.017(.495)	2.87	-0.54	-0.90	34.00	43.00
2014	39.45	.018(.444)	2.84	-0.56	-0.82	34.00	43.00
<b>Panel E: Australia Firms</b>	40.15	.014(.198)	7.08	-0.79	1.56	22.40	52.00
2010	37.00	.016(.532)	12.65	-1.74	2.73	4.00	52.00
2011	40.20	.009(.713)	6.01	-0.34	0.26	27.00	52.00
2012	40.25	.004(.846)	6.07	-0.33	0.19	27.00	52.00
2013	41.05	.011(.633)	5.60	-0.47	1.00	27.00	52.00
2014	42.20	.029(.218)	5.08	-1.06	3.59	27.00	52.00
<b>Panel F: Canada Firms</b>	40.15	.023(.039)**	7.08	-0.79	1.56	22.40	52.00
2010	37.05	.019(.447)	12.65	-1.74	2.73	4.00	52.00
2011	40.20	.027(.275)	6.01	-0.34	0.26	27.00	52.00
2012	40.25	.026(.281)	6.07	-0.33	0.19	27.00	52.00
2013	41.05	.021(.387)	5.60	-0.47	1.00	27.00	52.00
2014	42.20	.019(.426)	5.08	-1.06	3.59	27.00	52.00
<b>Panel G: France Firms</b>	44.98	.088(.000)***	4.13	-0.71	1.02	35.60	52.00
2010	43.20	.067(.009)***	5.52	-0.48	-0.84	34.00	52.00
2011	44.30	.081(.001)***	4.39	-0.69	0.69	34.00	52.00
2012	44.95	.087(.000)***	4.36	-1.09	1.43	34.00	52.00
2013	46.55	.108(.000)***	2.56	0.21	-0.33	42.00	52.00
2014	45.90	.095(.000)***	3.81	-1.48	4.17	34.00	52.00
<b>Panel H: Germany Firms</b>	42.03	.040(.000)***	5.30	-0.80	2.18	27.40	51.00
2010	41.10	.051(.046)**	7.59	-2.03	5.86	16.00	51.00
2011	42.30	.046(.069)*	4.79	-0.52	1.26	30.00	51.00
2012	42.15	.038(.124)	4.78	-0.49	1.28	30.00	51.00
2013	42.30	.034(.174)	4.69	-0.56	1.66	30.00	51.00
2014	42.30	.031(.192)	4.67	-0.39	0.86	31.00	51.00
<b>Panel I: Spain Firms</b>	36.91	.046(.000)***	7.19	-1.20	1.61	17.80	46.00
2010	34.65	.046(.071)*	10.43	-1.94	4.82	1.00	46.00
2011	37.35	.040(.111)	6.49	-0.83	0.14	22.00	46.00
2012	37.70	.040(.107)	6.17	-0.89	0.99	22.00	46.00
2013	37.45	.051(.039)**	6.44	-1.17	1.05	22.00	46.00
2014	37.40	.054(.023)**	6.42	-1.17	1.07	22.00	46.00
<b>Panel J: Italy Firms</b>	41.34	.023(.035)**	5.61	-1.59	2.88	25.60	48.00
2010	40.75	.024(.351)	5.96	-1.37	1.99	25.00	48.00
2011	40.55	.015(.543)	6.13	-1.20	1.25	25.00	48.00
2012	41.50	.026(.281)	5.39	-1.57	2.87	26.00	48.00
2013	41.90	.026(.281)	5.25	-1.92	4.18	26.00	48.00
2014	42.00	.024(.311)	5.29	-1.92	4.13	26.00	48.00
<b>Panel K: Japan Firms</b>	26.83	.231(.000)***	4.82	-0.49	-0.33	16.40	34.20
2010	26.25	.231(.000)***	4.69	-0.45	-0.95	17.00	32.00
2011	26.15	.238(.000)***	4.76	-0.54	-0.66	16.00	32.00
2012	26.55	.236(.000)***	4.84	-0.35	-0.25	16.00	35.00
2013	27.20	.232(.000)***	5.00	-0.55	-0.01	16.00	36.00
2014	28.00	.219(.000)***	4.79	-0.56	0.24	17.00	36.00

Notes: The *t*-test in column 3 is the independent samples *t*-test for equality of means. The mean differences in Panels B to K test for equality of means between each country's firms and other firms in the sample. A mean difference with (\*\*\*), (\*\*) and (\*) indicates that the null hypothesis that the means are equal is rejected at the 1%, 5% and 10% significance level, respectively. The skewness and kurtosis test statistics in columns 5 and 6, respectively, test for normal distribution.

It is evident from the findings in Table 6 that there were differences in levels of compliance among firms following the Anglo American and Continental accounting traditions. The highest scores of compliance with OECD principles were found among U.K. and French firms over the five years. However, while for U.K. firms the level of compliance was consistent throughout the period as evidenced by the T-test that fluctuated between .086 and 0.83, in France the difference was more irregular, ranging from .067 to .108 (2013) and then dropping back to .095 in 2014. Whereas the T-test showed significance over all five years both in the U.K. and France, it was only significant for Spanish firms in 2010 and for the cumulative mean score for the five years. This was similar for German firms for 2010, 2011 and its cumulative mean score, and for the overall mean for Canadian firms for the five years. Since the significance as shown in the T-tests results is between zero and 1%, the relationship between the variables is very strong. In other words, the compliance by firms with the OECD governance practices was strong, and related to the country's traditions.

In Table 7, a comparison between the levels of compliance of the firms is strong based on individual corporate governance provisions that the countries adhere to according to their tradition in achieving corporate governance. In this table the findings show that both countries belonging to the Anglo American and Continental countries protect the rights of the shareholders, but that those from the Anglo American tradition scored higher on company offering of other ownership rights beyond voting, on shareholders approving remuneration for board members annually, on presentation of board remuneration to shareholders, on quality of notice to shareholders about meeting, and on provision of dividend policy amount and clarity in explanation for payment. There is a significant difference between the findings on approval for remuneration of board members, presentation of board remuneration to the board, and quality of notice to shareholders about meetings. The Continental tradition scored higher than the Anglo tradition with respect to the quality of notice to call a shareholders' meeting for dividends, chairs attending board AGMs, having a list of board attendance available, having company anti-takeover defences and having board members that hold more than 25 % of shares outstanding.

The findings from the following table, comparing the levels of compliance with individual internal corporate governance provisions by Anglo and Continental traditions, reveal some significant differences among governance provisions.

**Table 7: A Comparison of the levels of Compliance with the Individual Internal Corporate Governance Provisions by Tradition**

Individual Internal Corporate Governance Provisions of the OECD CGI	Compliance Levels between Anglo and Continental Firm												
	All Firm Years			2010		2011		2012		2013		2014	
	Anglo	Cont	T-Test	Anglo	Cont	Anglo	Cont	Anglo	Cont	Anglo	Cont	Anglo	Cont
Section A -- Rights of Shareholders													
Does the company provide other ownership rights besides voting?	99.8	99.6	.002(.564)	99.0	99.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Do the shareholders approve annually the decision on how much to remunerate board members or executives?	86.4	50.6	.359(.000)***	81.0	46.0	83.0	47.0	87.0	50.0	89.0	56.0	92.0	54.5
Are shareholders presented with board remuneration?	94.2	71.6	.224(.000)***	91.0	68.0	93.0	71.0	94.0	73.0	95.0	74.0	98.0	72.7
Are the names and backgrounds of the directors appointed presented in a Quality of Notice to call Shareholders Meeting in the past one year?	93.8	70.8	.228(.000)***	91.0	64.0	92.0	70.0	93.0	72.0	95.0	73.0	98.0	75.8
Are the names and fees of the auditors appointed presented in a Quality of Notice to call Shareholders Meeting in the past one year?	79.6	71.6	.078(.004)***	78.0	65.0	79.0	71.0	81.0	71.0	80.0	76.0	80.0	75.8
Is the amount and explanation for Dividend policy presented in the Quality of Notice to call Shareholders Meeting in the past one year?	48.0	52.2	.043(.174)	44.0	48.0	46.0	51.0	47.0	50.0	51.0	55.0	52.0	57.6
In the last two years, did the Chairman of the Board attend at least one of the AGMs?	26.4	32.8	.064(.025)**	24.0	28.0	25.0	28.0	24.0	35.0	28.0	37.0	31.0	36.4
In the last two years, did the CEO/Managing Director attend at least one of the AGMs?	25.6	41.0	.154(.000)***	24.0	37.0	24.0	36.0	23.0	42.0	27.0	45.0	30.0	45.5
Does the company make available a list of the board members in attendance at AGMs?	3.4	13.6	.102(.000)***	3.0	12.0	3.0	12.0	3.0	15.0	4.0	15.0	4.0	14.1
Do the minutes from the AGM show whether shareholders had an opportunity to ask questions or raise issues with respect to the past year?	7.0	14.8	.078(.000)***	7.0	12.0	7.0	12.0	7.0	16.0	7.0	17.0	7.0	17.2
Dividend policy amount and explanation for payment are clear	89.2	79.2	.098(.000)***	86.0	79.0	89.0	80.0	90.0	78.0	90.0	79.0	91.0	80.8
Does the company have anti-takeover defenses “Cross shareholding”?	9.2	23.8	.146(.000)***	9.0	23.0	9.0	24.0	9.0	24.0	9.0	24.0	10.0	24.2
Board members hold more than 25% of share outstanding	17.0	40.0	.230(.000)***	17.0	40.0	17.0	41.0	17.0	41.0	17.0	40.0	17.0	38.4
Section B -- Equitable Treatment of Shareholders													
Is one-share, one-vote a rule that the company uses?	98.0	85.6	.122(.000)***	98.0	85.0	98.0	86.0	98.0	86.0	98.0	86.0	98.0	85.9
Is there any mechanism to allow minority shareholders to influence board composition?	2.0	18.8	.168(.000)***	2.0	19.0	2.0	19.0	2.0	19.0	2.0	19.0	2.0	18.2
Have there been any cases of insider trading involving company directors and management in the past two years?	0.0	0.4	.004(.157)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0
Are explanations or rationales provided by the company for any related-party transactions affecting the corporation?	93.8	82.8	.108(.000)***	92.0	80.0	94.0	81.0	94.0	84.0	95.0	85.0	94.0	84.8
Is the company part of an economic group in which the economic group or controlling shareholder is in control of the key suppliers and customers of the company and/or are in similar businesses as the company?	6.2	9.0	.028(.093)*	6.0	9.0	6.0	9.0	6.0	9.0	6.0	9.0	7.0	9.1
Has the company been involved in any non-compliance case pertaining to related-party transactions in the past one year?	2.0	1.0	.009(.195)	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0
Does the company facilitate voting by proxy?	93.2	79.6	.134(.000)***	90.0	74.0	92.0	77.0	93.0	80.0	94.0	84.0	97.0	83.8
Are the documents needed to give proxy specified in the notice to shareholders?	93.2	79.6	.134(.000)***	90.0	74.0	92.0	77.0	93.0	80.0	94.0	84.0	97.0	83.8
Does the company ensure that shareholders receive notice of general shareholders’ meeting 30 days or more in advance of these meetings?	93.2	86.8	.062(.001)***	90.0	81.0	92.0	84.0	93.0	87.0	94.0	91.0	97.0	91.9
Section C -- The Role of Stakeholders in Corporate Governance													
Are the safety and welfare of its employees explicitly mentioned by the company?	95.6	90.4	.050(.002)***	94.0	89.0	96.0	91.0	96.0	91.0	96.0	91.0	96.0	90.9
Are the role of key stakeholders such as customers or the community at large, including creditors or suppliers mentioned explicitly by the company?	92.8	84.4	.082(.000)***	92.0	83.0	93.0	85.0	93.0	85.0	93.0	85.0	93.0	84.8
Are environmental issues explicitly mentioned by the company in its public communications?	94.6	94.2	.000(.994)	93.0	93.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	93.9
Are ESOP (employee share option program), or other long-term employee incentive plan linked to shareholder value creation, provided to employees by the company?	97.6	57.4	.400(.000)***	96.0	56.0	98.0	58.0	98.0	58.0	98.0	58.0	98.0	57.6
Section D -- Disclosure and Transparency													
Is there a transparent ownership structure available for the company? Breakdown of shareholdings	30.8	88.4	.5777(.000)***	30.0	87.0	31.0	89.0	31.0	89.0	31.0	89.0	31.0	88.9
Is it easy to identify beneficial ownership of the company?	98.4	95.0	.032(.004)***	99.0	95.0	99.0	94.0	98.0	97.0	98.0	95.0	98.0	94.9
Does the company disclose director shareholdings?	98.6	70.0	.283(.000)***	97.0	70.0	99.0	70.0	99.0	70.0	99.0	71.0	99.0	69.7
Does the company disclose management shareholding?	57.8	32.2	.255(.000)***	57.0	33.0	58.0	32.0	58.0	32.0	58.0	32.0	58.0	32.3
Does the company possess a dispersed ownership structure?	34.0	63.6	.297(.000)***	34.0	62.0	34.0	64.0	34.0	64.0	34.0	64.0	34.0	64.6
Is the company’s actual ownership structure obscured by cross-shareholdings?	1.4	7.0	.056(.000)***	3.0	7.0	1.0	7.0	1.0	7.0	1.0	7.0	1.0	7.1

Is it possible to assess the quality of the annual report, in particular, financial performance?	98.6	98.4	.000(.997)	97.0	97.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0
Is it possible to assess the quality of the annual report, in particular, business operations and the company's competitive position?	96.8	98.4	.017(.058)*	96.0	97.0	97.0	99.0	97.0	99.0	97.0	99.0	97.0	99.0
Is it possible to assess the quality of the annual report, in particular, the backgrounds of board members?	60.6	68.0	.075(.013)**	59.0	67.0	61.0	68.0	61.0	68.0	61.0	69.0	61.0	68.7
Is it possible to assess the quality of the annual report, in particular, the basis of the remuneration of board members?	92.6	76.6	.158(.000)***	91.0	75.0	93.0	77.0	93.0	77.0	93.0	77.0	93.0	77.8
Is it possible to assess the quality of the annual report, in particular, operating risks?	97.6	96.4	.0100(.344)	96.0	95.0	98.0	97.0	98.0	97.0	98.0	97.0	98.0	97.0
Are there any statements requiring directors to report their transactions of company stock?	40.6	27.8	.127(.000)***	39.0	27.0	41.0	28.0	41.0	28.0	41.0	28.0	41.0	28.3
Is the company's accounting carried out in accordance with an internationally recognised accounting standard?	65.2	80.2	.151(.000)***	52.0	77.0	68.0	79.0	68.0	81.0	69.0	82.0	69.0	82.8
Is the company's auditing carried out in accordance with an internal audit operation that is established as a separate unit in the company?	99.6	97.4	.020(.007)***	98.0	96.0	100.0	98.0	100.0	98.0	100.0	98.0	100.0	98.0
Does the company perform an annual audit using independent and reputable auditors?	99.6	98.4	.010(.094)*	98.0	97.0	100.0	99.0	100.0	99.0	100.0	99.0	100.0	99.0
Does the audited financial statements have any accounting qualifications apart from the qualification on Uncertainty of Situation?	2.0	6.0	.040(.001)***	2.0	6.0	2.0	6.0	2.0	6.0	2.0	6.0	2.0	6.1
Does the company offer multiple channels of access to information?	98.6	99.2	.009(.095)*	97.0	98.0	99.0	100.0	99.0	100.0	99.0	100.0	99.0	99.0
Does the company disclose the financial report in a timely manner?	99.6	99.4	.000(.998)	98.0	98.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Does the company have a website, disclosing up-to-date information?	92.0	81.6	.102(.000)***	90.0	76.0	92.0	81.0	91.0	81.0	93.0	86.0	94.0	84.8
<b>Section E -- Responsibilities of the Board</b>													
Does the company have its own written corporate governance rules?	0.0	1.0	.010(.025)**	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
Does the company's board of directors have a code of ethics or statement of business conduct that all directors and employees must adhere to?	98.6	98.4	.000(.997)	97.0	97.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0
Does the company have corporate vision/mission statements?	54.0	73.4	.195(.000)***	54.0	74.0	54.0	74.0	54.0	74.0	54.0	73.0	54.0	72.7
Does the regulatory agency have any evidence from the regulatory agency over the past three years that the company has been non-compliant with rules and regulations?	38.8	40.4	.016(.588)	36.0	39.0	36.0	40.0	40.0	41.0	41.0	41.0	41.0	41.4
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Attendance	68.8	60.8	.078(.009)***	67.0	59.0	68.0	61.0	69.0	61.0	70.0	62.0	70.0	61.6
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Internal control	91.6	62.8	.286(.000)***	90.0	61.0	91.0	63.0	92.0	63.0	93.0	64.0	92.0	63.6
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Management control	89.8	62.8	.268(.000)***	88.0	61.0	89.0	63.0	90.0	63.0	91.0	64.0	91.0	63.6
Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Legal compliance	61.8	44.2	.175(.000)***	60.0	43.0	62.0	43.0	62.0	44.0	63.0	46.0	62.0	45.5
Assess the quality and content of the Audit Committee Report in the annual report for Conclusion or opinion	71.2	38.0	.331(.000)***	68.0	37.0	70.0	38.0	72.0	38.0	73.0	39.0	73.0	38.4
Have board members participated in the Securities Regulation Committee (or equivalent) training on corporate governance?	37.8	6.4	.313(.000)***	35.0	5.0	37.0	6.0	39.0	7.0	39.0	7.0	39.0	7.1
How many board meetings does the company have per year?	99.4	98.4	.011(.057)*	99.0	97.0	100.0	99.0	100.0	99.0	100.0	99.0	98.0	99.0
Is the chairman and the CEO the same person?	25.0	24.8	.001(.956)	26.0	22.0	27.0	24.0	26.0	24.0	23.0	26.0	23.0	28.3
Does the company provide an option scheme with incentives for top management?	98.6	71.6	.268(.000)***	97.0	70.0	99.0	73.0	99.0	72.0	99.0	72.0	99.0	71.7
Does the board appoint independent committees with independent members to carry out various critical responsibilities such as: audit, compensation and director nomination?	99.6	80.4	.190(.000)***	98.0	79.0	100.0	81.0	100.0	81.0	100.0	81.0	100.0	80.8
Does the company provide contact details for a specific investor relations person?	53.6	62.6	.091(.003)***	52.0	62.0	54.0	63.0	54.0	63.0	54.0	63.0	54.0	62.6
Does the company have a board of directors report?	46.8	30.8	.159(.000)***	45.0	30.0	48.0	31.0	47.0	31.0	47.0	31.0	47.0	31.3
Does the company disclose the amounts paid to the independent nonexecutive directors?	99.6	95.4	.040(.000)***	98.0	94.0	100.0	96.0	100.0	96.0	100.0	96.0	100.0	96.0
Do the company provide training to directors (including executive and nonexecutive directors)?	87.0	65.0	.218(.000)***	85.0	63.0	87.0	65.0	87.0	66.0	88.0	66.0	88.0	65.7

Notes: The *t-test* in column 4 is the independent samples *t-test* for equality of means between all firms in Anglo countries and all firms in Continental countries. A mean difference with (\*\*\*)

(\*\*), and (\*) indicates that the null hypothesis that the means are equal is rejected at the 1%, 5% and 10% significance level, respectively.

In terms of equitable treatment of shareholders, the role of stakeholders in corporate governance, disclosure and transparency, and responsibilities of the board, as in other measures of the rights of shareholders, the Anglo tradition seems, on average, to promote greater compliance with the OECD corporate governance than the Continental tradition. It should be noted that there are some areas of compliance that appear to be of greater significance to Continental countries than to Anglo countries. However, over the period under study, both Anglo and Continental firms appear to have increased their level of compliance with the OECD corporate governance principles.

## **6.4 Multivariate regression analyses, results and discussion**

### **6.4.1 Models used in the regression and the findings**

The second objective is to report on the relationship between the dependent and all continuous independent variables used in bivariate or correlational analysis. The correlation that was carried out was based on the relationship between corporate governance and performance. Corporate governance was measured in terms of the corporate governance Index, or CGI, discussed above. There were also other measures of corporate governance: ownership structure and board structure. These were used as independent variables. Performance was measured in terms of risk-taking, credit rating and cost of capital.

In Model 1, the CGI was used as an independent variable, with risk-taking, credit rating and cost of capital as dependent variables. Basically, in Model 1, risk-taking is measured in terms of R&D/Assets as a dependent variable, as R&D/Sales as dependent variable, as R&D Expenditure as dependent variable and as ROA as dependent variable. In representing credit rating, the study uses S&P only in the analysis as the dependent variable, and cost of capital is used as a dependent variable. These dependent variables were correlated with CGI as the independent variable.

In Model 2, ownership structure is used as an independent variable, with risk-taking, credit rating and cost of capital. Model 2 uses the same measures for risk-taking as in Model 1. Credit rating and cost of capital are also measured in the same way.



In Model 3, board structure is used as the independent variable and, as in Models 1 and 2, this independent variable is correlated with the same dependent variables represent risk-taking, credit rating and cost of capital.

#### **6.4.2 Multivariate regression analyses, results and discussion: CGI and risk-taking**

Table 8 reports findings from the study in which CGI is the independent variable and R&D/Assets serves as proxy for risk-taking.

Hypotheses were drawn up based on the literature review, which revealed prior studies that show a relationship between corporate governance and risk-taking (Elbannan, 2009). Based on this thinking, prior research suggests that if a firm has poor corporate governance, it is likely to be thought of as a firm with poor risk, suggesting that it may be a poor investment risk. Elbannan (2009) identifies firms that are smaller, with lower income and productivity, as likely to be perceived as poor investment risks. Poor investment risks also meant that it would cost more to borrow funds for investment. Based on these observations, it was thought that organisations with poor corporate governance would also be seen as having higher risks and consequently higher borrowing rates. Some researchers who consider the hypothesis that risk-taking is linked to corporate governance use a proxy to represent corporate governance.

In the regression findings shown in Table 8, the F-Value is (3.668\*\*\*), which indicates that the model is significant at 1%. This confirms that the model is fit and can predict the results of the OECD CGI on risk-taking based on R&D/Assets. The Adjusted R<sup>2</sup> is 8.2% shows how the independent variable, the CGI, and the control variables, will interpret the dependent variable, namely, R&D/Assets by 8.2%. Therefore, any change in the independent and control variables will also lead to a change in the dependent variable by R<sup>2</sup>.

The control country variables that were used include corruption index, inflation, GDP per capita, population, masculinity, power distance, stock market capitalisation and Anglo America. It is important in considering country characteristics as these are seen as unique to countries and therefore as having an impact on the operations of companies with these characteristics (Radebaugh et al., 2006).

The firm variables were firm size, sales growth, audit committee number, corporate governance committee number, leverage and capital gain yield. The control variables that had a significant relation with CGI were audit committee number, corporate governance committee number, GDP per capita, masculinity and power distance. Using the figures for all firm years, it was shown that the corporate governance index has a negative significance to (-1.671\*), suggesting that there is a negative relationship between the OECD CGI and risk-taking based on R&D/Assets. This is based on agency theory that shows greater CGI was leading to less risk (Lai & Chen, 2014).

Audit committee number had a negative effect, significance at 1% level (-3.149\*\*\*), suggesting that an increase in audit committee number will lead to a decrease in risk-taking. Corporate governance committee number at (4.509\*\*\*) had a positive significance at 1% level, suggesting that an increase in corporate governance committee number would lead to an increase in risk-taking. However, studies on the impact of corporate governance on risk-taking reveal that firms with good governance in place tend to have little risk (Lai & Chen, 2014). Gamble and Kelly (2001) support the position that firms that are governed well tend to be privileged, implying that their risk-taking is low. This is in keeping with agency theory (Lai & Chen, 2014). Garmaise and Liu (2005) point out that according to agency theory, the conflict between principal and agent contributes to risk. These researchers held that increase in corporate governance can also lead to increase in risk-taking, if the managers of organisations tend to favour investment (Garmaise and Liu, 2005).

The findings for the country control variables reveal that GDP per capita at (2.429\*\*), indicating a positive significance to 5%, and suggesting that a country's level of wealth influences the relationship between CGI and risk-taking based on R&D/Assets. Masculinity, which deals with the emotional roles between the genders and the emphasis on aggressiveness and competition in a society, also has a positive significance to 1%, with a finding of (3.202\*\*\*), suggesting that there is a higher level of risk-taking among countries that are considered highly masculine. Masculinity is seen as an important characteristic; it describes a preference for "achievement, heroism, assertiveness, and material success," (Hofstede, 1984, p. 84). Power distance, or the degree to which a society supports and expects social inequality, was seen at (1.919\*) to have a positive significance to 10%, suggesting that firms in such societies are also more likely to be high in risk-taking. Power distance was also seen as an important cultural factor affecting how countries operate on a global scale (Hofstede, 1984;

Hofstede and Bond, 1988). These findings reveal important country differences; as pointed out in Chapter 2, there are major differences between Anglo-American and European countries on several dimensions, including masculinity and power distance (Hofstede, 1984).

The findings from Table 8 reveal a significant relation between CGI and risk-taking as measured by R&D/Assets. The finding for CGI for all firm years was (-1.671\*). The relation was seen to be different for the years under study. While the overall relation was negative, in 2010 and 2013 it was positive, at (.305) and (.551), respectively. In 2011 it was (-1.078), in 2012 it was (-1.028) and in 2014 it was (-1.109). Overall, the relation between CGI and risk-taking as measured by R&D/Assets is significant. In this table, the findings show that there is a significant relation between CGI and risk-taking which shows the level of compliance and disclosure of the OECD CG rules and risk as measured by R&D/Assets, for as the level of compliance and disclosure increases, risk decreases.

**Table 8: OLS Regression Results of OECD CGI on Risk-Taking Based on the R&D/Assets (Dependent Variable):**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.082	.106	.015	-.013	.091	.080
Standard Error		.763	.692	.774	.826	.799	.783
Durbin- Watson		.466	1.979	2.011	1.901	2.077	1.678
F-Value		3.668(.000)***	1.883(.034)**	1.117(.351)	.900(.566)	1.772(.049)**	1.611(.086)*
No. of Observations		568	113	116	116	117	106
Constant		-4.597(.000)***	-2.561(.012)**	-2.403(.018)**	-1.668(.098)*	-.100(.921)	-.760(.450)
<b>Independent Variable</b>							
Corporate Governance Index	-	-1.671(.095)*	.305(.761)	-1.078(.283)	-1.028(.306)	.551(.583)	-1.109(.270)
<b>Control Variables</b>							
Firm Size		-1.615(.107)	-1.808(.074)*	-1.098(.275)	-.400(.690)	-.735(.464)	-.650(.517)
Sales Growth		.825(.410)	1.106(.271)	-.126(.900)	.513(.609)	-.802(.425)	.071(.944)
Audit Committee No.		-3.149(.002)***	-.915(.362)	-1.637(.105)	-1.666(.099)*	-2.248(.027)**	-1.201(.233)
Corporate Governance Committee No.		4.509(.000)***	2.589(.011)**	1.496(.138)	1.738(.085)*	2.509(.014)**	1.978(.051)*
Leverage		.135(.893)	.212(.832)	.248(.805)	.067(.947)	.057(.955)	-.257(.797)
Capital Gain Yield		.263(.793)	.504(.616)	.829(.409)	.832(.407)	.400(.690)	1.409(.162)
Stock Market Capitalisation		-.961(.337)	.900(.370)	-.163(.871)	-.471(.639)	1.726(.087)*	-.847(.399)
Corruption Index		1.507(.132)	-1.533(.128)	1.224(.224)	1.101(.274)	-.154(.878)	1.594(.115)
Inflation		-1.579(.115)	2.182(.032)**	-1.617(.109)	-1.135(.259)	-3.046(.003)***	-.811(.420)
GDP Per Capita		2.429(.793)**	3.295(.001)***	-.466(.642)	-.673(.503)	-.088(.930)	.188(.851)
Population		1.458(.145)	1.326(.188)	-.120(.905)	-.018(.985)	-.799(.426)	1.200(.233)
Masculinity		3.202(.001)***	-1.672(.098)*	1.753(.083)*	1.285(.202)	-.389(.698)	.653(.515)
Power Distance		1.919(.055)*	-.986(.327)	1.527(.130)	1.155(.251)	-1.060(.292)	.749(.456)
Anglo American		-.945(.345)	-1.852(.067)*	.764(.447)	.568(.571)	-1.521(.131)	-.294(.770)
2010		.889(.374)	-	-	-	-	-
2011		-.023(.982)	-	-	-	-	-
2012		.184(.854)	-	-	-	-	-
2014		-.384(.701)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

Hypothesis H1a, drawn up to test the relation between CGI and risk-taking, was that there was no statistically significant relationship between CGI and risk-taking. The findings do not

support the null hypothesis, as an increase in CGI leads to a decrease in risk-taking. Ashbaugh-Skaife et al. (2004) show that when governance structure improves and when greater corporate governance is achieved, firms are able to borrow at lower costs. This is in keeping with agency theory, which suggests that managers tend to look after their own interests, which differ from those of shareholders. Therefore, greater corporate governance, which is seen as protecting the rights of shareholders against managers, is believed to lead to less risk-taking (Kiel & Nicholson, 2003). According to Jensen and Meckling (1976) and Abdullah & Valentine (2009), agents, in this case managers, are thought to hold control and to manage firms in a manner that could be risky. With more corporate governance, it is assumed that there would be less risk, and therefore more protection for shareholders. Good corporate governance is seen as helping lower risk and therefore lower the cost of borrowing.

In Table 9, for the regression between CGI and risk-taking, with risk measured as R&D/Sales, the F-Value is (3.530\*\*\*), which shows that the model is significant at 1%. This confirms that the model is fit and can predict the results of the OECD CGI on risk-taking based on R&D/Sales. The Adjusted  $R^2$  of 7.8% reveals how the independent variable, the CGI, and the control variables will interpret the dependent variable, R&D/Sales, by  $R^2\%$ . Any change that takes place in the independent and control variables leads to a change in the dependent variable by  $R^2$ .

The findings show that CGI, as an independent variable for all firm years, is negative and significant. For all firm years, the relation between CGI and risk-taking as measured by R&D/Sales was (-3.529\*\*\*), which is negative and significant at the 1% level. This suggests that an increase in CGI would lead to a decrease in risk-taking (Lai & Chen, 2014).

The control variables that were significant and related to firms were audit committee number, and corporate governance committee number. The country variables that were significant were GDP per capita, population, masculinity and power distance. Audit committee number, with a value of (-3.529\*\*\*), was negative and significant at 1%, indicating that there is a negative relation between OECD CGI and risk-taking based on R&D/Sales. This finding could be supported by earlier literature which shows that according to stewardship theory, when there were more directors, they maintained good stewardship over corporate performance (Letting et al., 2012; Abdullah and Valentine, 2009). However, Rechner and Dalton (1989), who take a

stewardship approach to studying corporate governance, find that directors on committees do not necessarily lead to improvement in firm performance.

The corporate governance committee rise was also associated with less risk. Past studies show that when there is greater shareholder protection through better governance, there is less risk and higher firm valuation (Ammann et al., 2013). With lower risk-taking, the firm would maintain more of its resources. Garmaise and Liu (2005) show how greater CGI could lead to increased risk, as management is often inclined to favour investment.

While these findings reveal that the audit committee number and governance committee number variables are significant for risk-taking, it was seen that the above-mentioned country control variables also have significance. GDP per capita at (2.741<sup>\*\*\*</sup>) at significance or 1% is positive, which suggests that country wealth positively influences the relationship between CGI and risk-taking based on R&D/Assets. In other words, the level of compliance and disclosure practiced within a country affects risk-taking, based on the GDP per capita of the country. Population was also seen to have a positive significance at (1.812<sup>\*</sup>) at a significance level of 10%. This suggests that as population increases, risks increase as well. It follows that with increased population, there would be more people to share in the wealth of the country, which would also be related to GDP per capita.

Masculinity was also related to the CGI in terms of risk-taking based on R&D/Sales, and was seen to be positively significant at (2.494<sup>\*\*</sup>) at 5%. Similarly, power distance was also positively significant at (2.223<sup>\*\*</sup>) at 5%. Compliance and disclosure as CGI was shown to be positively related to power distance, or the expectation of unequal distribution in the country. Hofstede (1984) shows that both masculinity and power distance are country control variables that influence the impact of CGI on risk-taking as measured by R&D/Sales. Studies on corporate governance mechanisms reveal that they have an impact on companies' risk-taking (Switzer and Wang, 2013; Matthias, 2013; Tran, 2014). According to Tran, in countries with insufficient shareholder, where it appears that there are not strong enough controls to protect the shareholders, shareholders will be reluctant to invest. Therefore, rational investors thinking about risk-taking and the costs that companies would have to undertake, consider that companies in these countries would have greater costs (Tran, 2014). Therefore, it is important to recognise that there are certain countries where there would be more risk attached to

borrowing money, because of the governance mechanisms that may be absent from the countries' corporate governance structure.

**Table 9: OLS Regression Results of OECD CGI on Risk-Taking Based on R&D/Sales (Dependent Variable):**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted $R^2$		.078	.071	-.012	-.017	.059	.050
Standard Error		.763	.707	.792	.825	.814	.784
Durbin- Watson		.522	2.043	2.129	2.012	2.111	1.652
F-Value		3.530(.000)***	1.574(.095)*	.910(.556)	.868(.601)	1.486(.124)	1.368(.181)
No. of Observations		568	113	116	116	117	106
Constant		-4.590(.000)***	-2.868(.005)***	-2.268(.025)**	-1.451(.150)	-.357(.722)	-.607(.545)
<b>Independent Variable</b>							
Corporate Governance Index	-	-2.402(.017)**	-.314(.754)	-1.109(.270)	-1.331(.186)	-.017(.987)	-1.308(.194)
<b>Control Variables</b>							
Firm Size		.916(.360)	-.620(.536)	-.016(.988)	.623(.534)	.482(.631)	.552(.582)
Sales Growth		1.126(.261)	.671(.504)	.371(.711)	.410(.683)	.081(.935)	.739(.462)
Audit Committee No.		-3.529(.000)***	-1.495(.138)	-1.465(.146)	-1.895(.061)*	-2.387(.019)**	-.824(.412)
Corporate Governance Committee No.		4.678(.000)***	2.811(.006)***	1.633(.106)	1.811(.073)*	2.227(.028)**	1.856(.067)*
Leverage		-1.455(.146)	-.365(.716)	-.475(.636)	-.564(.574)	-.659(.512)	-1.017(.312)
Capital Gain Yield		.083(.934)	.255(.799)	.652(.516)	.598(.551)	.038(.970)	1.143(.256)
Stock Market Capitalisation		-1.642(.101)	-.154(.878)	-.316(.753)	-.686(.494)	1.250(.214)	-.765(.446)
Corruption Index		.824(.410)	-.902(.369)	.727(.469)	.592(.555)	-.278(.782)	1.004(.318)
Inflation		-1.636(.102)	1.250(.214)	-1.231(.221)	-.729(.467)	-2.358(.020)**	-.796(.428)
GDP Per Capita		2.741(.006)***	2.909(.004)***	-.051(.960)	-.105(.917)	.251(.803)	.197(.844)
Population		1.812(.070)*	1.706(.091)*	.108(.914)	.495(.621)	-.568(.571)	1.064(.290)
Masculinity		2.494(.013)**	-.992(.324)	1.278(.204)	.799(.426)	-.327(.744)	.396(.693)
Power Distance		2.223(.027)**	-.992(.840)	1.218(.226)	.780(.437)	-.595(.553)	.631(.529)
Anglo American		-.128(.898)	-.820(.414)	.663(.509)	.474(.637)	-1.212(.229)	-.175(.861)
2010		.827(.408)	-	-	-	-	-
2011		-.405(.686)	-	-	-	-	-
2012		.120(.905)	-	-	-	-	-
2014		-.326(.744)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

In Table 10, OLS Regression Results of OECD CGI on Risk-Taking Based on R&D Expenditure (Dependent Variable), the F-Value is (20.878\*\*\*), which shows that the model is significant at 1%. This model is a fit and can predict how the sought-after relationships. The Adjusted  $R^2$  shows how the independent variable, the CGI, and the control variables will interpret the dependent variable, R&D expenditure, by  $R^2$  40%. This suggests that any change in the independent and control variables lead to a change in the dependent variable by  $R^2$ .

The findings reveal that the relation between CGI and risk-taking as measured by R&D expenditure is negative and significant for all firm years. The finding was (-1.676\*), showing that the null hypothesis is rejected at 10%. However, when looking at individual years, we see that 2010 and 2013 had positive relations.

This finding reveals some significant results among the firm control variables and country control variables. Firm size, audit committee number, and corporate governance committee

number were the three firm control variables; the significant country control variables were GDP per capita, masculinity and power distance.

**Table 10: OLS Regression Results of OECD CGI on Risk-Taking Based on R&D Expenditure (Dependent Variable):**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.400	.429	.356	.332	.388	.415
Standard Error		.763	.692	.774	.826	.799	.783
Durbin- Watson		.466	1.980	2.011	1.901	2.077	1.678
F-Value		20.878(.000)***	6.606(.000)***	5.237(.000)***	4.802(.000)***	5.903(.000)***	5.970(.000)***
No. of Observations		568	113	116	116	117	106
Constant		-4.597(.000)***	-2.569(.012)**	-2.403(.018)**	-1.668(.098)*	-.100(.921)	-.760(.450)
<b>Independent Variable</b>							
Corporate Governance Index (Independent Variable)	-	-1.676(.094)*	.293(.770)	-1.078(.283)	-1.028(.306)	.551(.583)	-1.109(.355)
<b>Control Variables</b>							
Firm Size		14.297(.000)***	5.775(.000)***	6.034(.000)***	6.094(.000)***	5.805(.000)***	5.821(.000)***
Sales Growth		.826(.409)	1.100(.274)	-.126(.900)	.513(.609)	-.802(.425)	.071(.944)
Audit Committee No.		-3.155(.002)***	-.928(.356)	-1.637(.105)	-1.666(.099)*	-2.248(.027)**	-1.201(.233)
Corporate Governance Committee No.		4.510(.000)***	2.586(.011)**	1.496(.138)	1.738(.085)*	2.509(.014)**	1.978(.051)*
Leverage		.136(.892)	.223(.824)	.248(.805)	.067(.947)	.057(.955)	-.257(.797)
Capital Gain Yield		.265(.791)	.501(.617)	.829(.409)	.832(.407)	.400(.690)	1.409(.162)
Stock Market Capitalisation		-.950(.343)	.894(.374)	-.163(.871)	-.471(.639)	1.726(.087)*	-.847(.399)
Corruption Index		1.506(.133)	-1.515(.133)	1.224(.224)	1.101(.274)	-.154(.878)	1.594(.115)
Inflation		-1.597(.111)	2.157(.033)**	-1.617(.109)	-1.135(.259)	-3.046(.003)***	-.811(.420)
GDP Per Capita		2.427(.016)**	3.284(.001)***	-.466(.642)	-.673(.503)	-.088(.930)	.188(.851)
Population		1.455(.146)	1.328(.187)	-.120(.905)	-.018(.985)	-.799(.426)	1.200(.233)
Masculinity		3.203(.001)***	-1.654(.101)	1.753(.083)*	1.285(.202)	-.389(.698)	.653(.515)
Power Distance		1.920(.055)*	-.969(.335)	1.527(.130)	1.155(.251)	-1.060(.292)	.749(.456)
Anglo American		-.950(.342)	-1.840(.069)*	.764(.447)	.568(.571)	-1.521(.131)	-.294(.770)
2010		.887(.376)	-	-	-	-	-
2011		-.016(.987)	-	-	-	-	-
2012		.189(.850)	-	-	-	-	-
2014		-.383(.702)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

Firm size was shown to be important in this study. The findings reveal that firm size as (14.297\*\*\*) with significance at 1% and positive. This suggests that the size of a firm is positively related to the risk-taking based on R&D expenditure. The larger the company, the greater the risk involved based on R&D expenditure. This is a critical factor in assessing risk-taking, and the literature points out that organisations cannot all use the same corporate governance mechanisms, because they all differ. As pointed out, there is “substantial evidence that one size does not always fit all firms in all countries” (Black et al., 2010, p. 2). The findings of this study are therefore supported by Black et al. (2010).

While audit committee number at (-3.155\*\*\*) had a negative relation, significant at 1%, corporate governance committee at (4.510\*\*\*) had a positive relationship at 1%, GDP per capita

had a positive relation, significant at 5%, while masculinity had a positive relation at (3.203\*\*\*) at 1%, and power distance, at (1.920\*), had a positive relation, significant at 10%. The audit committee number showed the relationship, which could be described in terms of agency theory and the relationship between the manager and the shareholders (Garmaise and Liu, 2005).

In Table 11, OLS Regression Results of OECD CGI on Risk-Taking Based on ROA, the F-Value is (11.488\*\*\*), indicating that the model is significant at 1%. This model is a fit and can predict the sought-after relationships. The Adjusted R<sup>2</sup> % shows how the independent variable, the CGI, and the control variables will interpret the dependent variable, ROA, by R<sup>2</sup> 17.4%. This suggests that any change in the independent and control variables leads to a change in the dependent variable by R<sup>2</sup>.

This study looks at the relation between CGI and risk-taking as measured by ROA (return on assets). This table shows that for all firm years, the relation between CGI and ROA was (2.229\*\*), positively significant at 5%. For 2010, the findings reveal a positive significant relation at (2.091\*\*), and in 2012, the finding was (2.101\*\*). In 2011 and 2013, the findings were positive, at (1.372) and (1.530), respectively. In 2014, the figure was much smaller and positive, but not significant.

The firm control variables that are significant are firm size, sales growth, leverage and stock market capitalisation. The country control variables that are significant are GDP per capita, masculinity and power distance.

Firm size was significant in this study. The findings reveal that firm size as (3.801\*\*\*) with significance at 1%. This suggests that firm size has a negative impact when considering the relationship between CGI and risk-taking measured by ROA. Therefore, an increase in firm size would lead to an increase in ROA volatility and a decrease in risk-taking. This relates to the literature which points out that all organisations use different corporate governance mechanisms, because they are different and use different corporate governance mechanisms (Black et al., 2010). This negative significant relationship between firm size and risk-taking based on ROA means that when the level of compliance and disclosure increases, the volatility of ROA will increase and risk will decrease. Dasilas and Papasyriopoulos (2015) show that capital structure has an impact on risk. Sales growth also has a significant relationship with risk-taking and ROA. The relationship is positive and significant at 1%. This suggests that an



increase in sales growth would lead to an increase in ROA volatility and decrease in Risk. Leverage, at (-8.887\*\*\*), is significant at 1% and negative, showing that as leverage increases, risk-taking increases. Stock market capitalisation, at (3.405\*\*\*), is significant at 1% but is positive, suggesting that as stock market capitalisation increases, risk-taking decreases. The suggestion is that as compliance and disclosure of CGI increase, the volatility of ROA increases, giving rise to the decrease in risk-taking. In his study of German firms, Tran (2014) shows how these aspects of volatility of ROA and ROE affect risk-taking.

**Table 11: OLS Regression Results of OECD CGI on Risk-Taking Based on ROA (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.174	.250	.191	.338	.204	.071
Standard Error		.0601	.048	.059	.053	.063	.067
Durbin- Watson		.996	2.012	2.288	1.970	2.274	2.191
F-Value		11.488(.000)***	5.193(.000)***	3.986(.000)***	7.479(.000)***	4.248(.000)***	1.936(.023)**
No. of Observations		947	190	191	191	191	184
Constant		4.096(.000)***	2.874(.005)***	2.038(.043)**	1.691(.093)*	3.002(.003)***	1.040(.300)
<b>Independent Variable</b>							
Corporate Governance Index	+	2.229(.026)**	2.091(.038)**	1.372(.172)	2.101(.037)**	1.530(.128)	.201(.841)
<b>Control Variables</b>							
Firm Size		-3.801(.000)***	-2.874(.005)***	-.746(.457)	-2.925(.004)***	-3.149(.002)***	-.313(.755)
Sales Growth		3.269(.001)***	1.885(.061)*	-.816(.416)	3.226(.002)***	1.886(.061)*	1.634(.104)
Audit Committee No.		.172(.863)	.016(.987)	-.253(.801)	-.557(.578)	.547(.585)	-1.021(.309)
Corporate Governance Committee No.		-1.488(.137)	-.536(.593)	-.878(.381)	-.456(.649)	.384(.701)	-.948(.344)
Leverage		-8.887(.000)***	-4.074(.000)***	-4.983(.000)***	-4.697(.000)***	-2.653(.009)***	-3.259(.001)***
Capital Gain Yield		.388(.698)	.152(.880)	1.691(.093)*	4.791(.000)***	4.724(.000)***	1.701(.091)*
Stock Market Capitalisation		3.405(.001)***	3.823(.000)***	.919(.359)	2.176(.031)**	3.052(.003)***	.497(.620)
Corruption Index		.044(.965)	-2.433(.016)**	-.500(.618)	-.162(.872)	-.673(.502)	.796(.427)
Inflation		.148(.883)	2.860(.005)***	.774(.440)	.573(.567)	-1.182(.239)	-.664(.507)
GDP Per Capita		2.996(.003)***	.221(.825)	-.239(.811)	-.753(.452)	-2.581(.011)**	-1.191(.235)
Population		-1.499(.134)	-1.302(.195)	.268(.789)	-1.456(.147)	-2.711(.007)***	-.029(.977)
Masculinity		1.891(.059)*	-3.258(.001)***	-1.114(.267)	-.415(.679)	-.642(.522)	-.908(.356)
Power Distance		-2.320(.021)**	-2.842(.005)***	-1.186(.237)	-.618(.537)	-1.045(.298)	-1.074(.284)
Anglo American		1.120(.263)	-1.609(.109)	-.055(.956)	-.030(.976)	-.650(.517)	.539(.591)
2010		1.231(.219)	-	-	-	-	-
2011		1.591(.112)	-	-	-	-	-
2012		1.309(.191)	-	-	-	-	-
2014		.461(.645)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

The company variables that are significant are GDP per capita, masculinity and power distance. GDP per capita at (2.996\*\*\*), is significant at 1% and has a positive relation based on ROA. This suggests that an increase in GDP per capita is related to an increase in ROA and decrease in Risk-Taking. Masculinity, at (1.891\*), is significant at 10% and positive, suggesting that an increase in masculinity leads to increase in ROA and decrease in Risk-Taking. Power distance, at (-2.320\*), is significant at 5% and is negative, suggesting that an increase in power distance is associated with a decrease in ROA and increase in Risk-Taking. These country variables are

significant, as they represent different characteristics associated with countries (Hofstede, 2015). This shows that there would be differences among countries on the basis of the kind of accounting system they have in place. Therefore, this finding shows that the level of compliance with and disclosure of OECD rules increases the volatility of ROA, leading to a decrease in risk. The null hypothesis is rejected.

The relation between CGI and risk-taking based on R&D/Assets, the overall findings for all firm years was negative and significant, that based on R&D/Sales was also negative and significant, and that based on R&D Expenditure was negative and significant. When ROA was used to represent risk-taking, there was a large significant relation between CGI and risk-taking. What this shows is that when one speaks of risk-taking, it would matter what measure of firm performance was being used.

Several researchers studying the relation between CGI and risk-taking discovered divergent findings (Shleifer & Vishny, 1997; Jensen, 1993). This study, using different measures of firm performance, also has divergent findings. Using different measures to construct the CGI also had an impact on the relation between CGI and risk-taking. When Ntim et al. (2013) studied the impact of disclosure on performance they found no significant difference in the organisations' performance for some years. With respect to the mechanism of corporate disclosure, they found no major differences in risk disclosure behaviour. This also suggests that there is no agreement as to whether improving corporate governance has an effect on corporate performance (Ntim et al., 2013).

These four tables reveal different findings because of the different measures used. Several researchers point out that the measures of corporate governance or corporate performance that are used have an impact on the findings. The implication is that different studies could show different findings if researchers were to use individual mechanisms for studying risk or corporate governance.

The use of the CGI is highly recommended and confirmed by prior researchers. The rationale is that the use of individual mechanisms could yield different results; this is particularly important when studying firms that are more heavily compliant with some mechanisms than others, as in the case of the U.K. and U.S. (Shleifer & Vishny, 1997; Batten, 2001; Licht, 2001). But this is even more noticeable when studying countries that follow different traditions. Gompers et al. (2003), using a governance index consisting of 24 dimensions, included

shareholder rights and takeover defences Gompers et al.'s (2003) findings reveal that the differences between firms' corporate governance were noticeable: firms with more corporate governance were more democratic, promoted more shareholder rights, were larger, and had larger firm value, and lower expenditures and acquisitions. Using a corporate governance index with many dimensions allowed for comparing corporate governance index and risk-taking, for example in terms of firm performance.

In terms of the relation between CGI and risk-taking, despite the differences in the individual measurements of firm performance, in the case of R&D/Assets, R&D/Sales, R&D expenditure and ROA volatility, the overall finding is that the relation was negative. The findings reveal a significant negative relation between CGI and risk-taking. The relationship is significant, showing that CGI and risk-taking are sometimes related, as explained by agency theory. When disclosures of corporate governance increase, risk decreases. This is again explained by agency theory. However, in different years the relation is different. By using these different measures of firm performance, our findings reveal the importance of using a corporate governance index rather than individual dimensions, and using different measurements of firm performance.

#### **6.4.3 Multivariate regression analyses, results, and discussion: CGI and credit ratings**

In Table 12, OLS Regression Results of OECD CGI on Credit Rating (dependent variable), the F-Value is (23.197\*\*\*), indicating that the model is positive and significant at 1%. This model is a good fit in predicting the relationships. The Adjusted R<sup>2</sup>% of 36.6% shows how the independent variable, the CGI, and the control variables will interpret the dependent variable, by R<sup>2</sup>%. This suggests that any change in the independent and control variables will lead to a change in the dependent variable by R<sup>2</sup>.

The findings in Table 12 show that the overall relation for all firm years is (1.836\*). For 2010 and 2013, the relation is (2.203\*\*) and (2.396\*\*), respectively, showing that in these two years the relation was significant. However, in the other years the relation was positive, showing that if disclosure increases, credit rating will also increase. This finding for the relation between CGI and credit rating for all firm years is measured by S&P, and is seen to be positive and significant. It shows that the hypothesis is supported by previous research. The theory that supports this finding is agency theory; as pointed out, when corporate insiders have a lot of power, they will very likely pursue their own interests. The explanation here is that corporate

insiders are agents, and while there is an agency relationship between shareholders and owners, it is more likely that the interests of agents would not be aligned with those of shareholders and owners. In this situation credit ratings are likely to be lower. However, when corporate governance is strong and when there is evidence and disclosure that shareholders are protected, a firm is likely to have a higher credit rating (John et al., 2008).

As noted above, there were changes in the different years. While there was significance in the relation between CGI and credit ratings for 2010 and 2013, for 2011, 2012 and 2014 were smaller at (.994), (1.654) and (1.406), respectively. The suggestion is that although a similar trend could be seen, the effects were not felt strongly enough to make a difference.

The significant findings of this study reveal that credit ratings were measured by firm level factors including firm size, sales growth, and leverage. Firm size, at (11.008\*\*\*), is positive and significant at 1% and suggests that an increase in firm size also increases credit rating, as the size of the firm is shown to make a difference (Black et al., 2010). Sales growth, at (-1.779\*), is negative and significant at 10% was also made a difference among firms as increase in sales growth was seen to be associated with a decline in credit rating. Leverage is (-7.621\*\*\*) and significant at 1%. The negative relationship suggests that as leverage increases, credit ratings decrease.

In terms of the country variables, namely, corruption index, masculinity, power distance and Anglo-American, the relationship between these variables and credit ratings were positive. Corruption index is (2.819\*\*\*), suggesting that an increase in corruption is related to an increase in credit ratings. The explanation here is that when investors are reluctant to invest in countries with high levels of corruption. Also, other sources of credit would cost much more. According to Ahmad, Rashmi, Bakshi and Saha (2009), investors, issuers, investment bankers use credit ratings to determine the creditworthiness of companies. In countries where corruption is high, firms will find that this is a factor limiting investment: "For creditors, credit rating agencies increase the range of investment alternatives and easy to use measurements of relative credit risk, thereby increase the supply of total risk capital in the market, making it very efficient" (Ahmad, Rashmi, Bakshi & Saha, 2009). The relationship between corruption level and credit ratings is negative. It is also shown that when managers are dishonest, they try to show that their operations were successful, and hide their knowledge of the true conditions in an effort to avoid signaling weakness. This could lead to a reduction in shareholder wealth (Garmaise &

Liu, 2005). In effect, dishonest managers demonstrate poor corporate governance and, through corruption, could increase the firm's exposure to systemic risk, as well as reduce the organisation's capital (Garmaise and Liu, 2005).

Masculinity is (8.770\*\*\*), significant at 1% and positive. Since masculinity shows the emotional roles between genders with emphasis on aggressiveness and competition in society, this suggests that countries with high masculinity levels are more likely to have higher risks (Hofstede, 1984). Power balance shows the acceptance of unequal relations, which is also related to greater risk among countries with higher power balance (Hofstede, 1984).

On the issue of Anglo-American, the finding was also positive, but it was smaller and significant at 5%. Anglo-American firms were more likely to show a positive relationship with credit rating. The Anglo-American tradition was shown as having a legal system promoting greater corporate governance, which was seen as relating to better credit rating. Governments could also impose legislation requiring firms to maintain certain corporate ownership practices (Jenkinson and Mayer, 2012). The legal and accounting systems in place influence the corporate governance of a country (Shleifer and Vishny, 1997). This higher level of corporate governance would inspire a higher level of trust, increasing credit ratings for the country as a whole.

Table 12 reports the findings of the relation between CGI and credit ratings. This study set out to discover whether the corporate governance practiced in a firm had an impact on its credit ratings. Prior research has found that improving corporate governance leads to better credit ratings (Ashbaugh-Skaife et al., 2006). Alali et al. (2012) studied the relationship between corporate governance and credit rating and found that when firms improved their corporate governance structures, this had the effect of increasing their investment grading. This was particularly true in smaller firms (Alali et al., 2012). It was also shown that a firm's credit rating is also dependent on its corporate governance, despite the fact that credit rating organisations try to give the impression that all they do is give an opinion (Matthies, 2013). The fact is these opinions sway external lenders, who are influenced by high credit ratings (Matthies, 2013). Hypothesis 1b states: "There is no statistically significant relationship between corporate governance index and credit rating". The null hypothesis is rejected.

**Table 12: OLS Regression Results of OECD CGI on Credit Rating (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.366	.357	.334	0.341	.439	.348
Standard Error		2.261	2.305	2.282	2.320	2.131	2.306
Durbin- Watson		.520	2.289	2.022	2.033	2.286	2.152
F-Value		23.197(.000)***	6.408(.000)***	5.905(.000)***	6.079(.000)***	8.663(.000)***	6.019(.000)***
No. of Observations		733	147	148	148	148	142
Constant		-4.255(.000)***	-1.505	-.564	.188(.851)	1.123(.263)	-2.931(.004)***
<b>Independent Variable</b>							
Corporate Governance Index	+	1.836(.067)*	2.203(.029)**	.994(.322)	1.654(.101)	2.398(.018)**	1.406(.162)
<b>Control Variables</b>							
Firm Size		11.088(.000)***	4.505(.000)***	4.663(.000)***	4.234(.000)***	4.396(.000)***	4.199(.000)***
Sales Growth		-1.779(.076)*	-1.320(.189)	-2.055(.042)**	.627(.532)	-.657(.513)	-.432(.667)
Audit Committee No.		-.583(.560)	-1.250(.214)	-.657(.512)	1.017(.311)	.038(.969)	-.398(.691)
Corporate Governance Committee No.		1.497(.135)	.839(.403)	.544(.588)	.943(.348)	1.393(.166)	.197(.844)
Leverage		-7.621(.000)***	-2.750(.007)***	-2.558(.012)**	-3.087(.002)***	-4.136(.000)***	-3.327(.001)***
Capital Gain Yield		-1.089(.276)	-1.561(.121)	1.435(.154)	-.418(.677)	1.664(.098)**	1.965(.052)*
Stock Market Capitalisation		.439(.661)	1.699(.092)*	.807(.421)	1.045(.298)	3.260(.001)***	-2.345(.021)**
Corruption Index		2.819(.005)***	-.717(.474)	.007(.994)	.011(.991)	1.065(.289)	1.765(.080)*
Inflation		.547(.585)	2.637(.009)***	.472(.638)	.686(.494)	-3.319(.001)***	1.717(.088)*
GDP Per Capita		1.283(.200)	1.672(.097)*	.420(.675)	.029(.977)	-1.982(.050)**	2.361(.020)**
Population		-1.146(.252)	-.274(.785)	-.976(.331)	-1.630(.105)	-3.321(.001)***	2.470(.015)**
Masculinity		8.770(.000)***	.752(.454)	.640(.523)	.169(.866)	2.342(.021)**	3.720(.000)***
Power Distance		4.174(.000)***	.195(.845)	.326(.745)	.054(.957)	-.011(.991)	2.746(.007)***
Anglo American		1.963(.050)**	-.706(.482)	.345(.731)	.208(.836)	-.858(.393)	1.121(.265)
2010		1.216(.224)	-	-	-	-	-
2011		.553(.581)	-	-	-	-	-
2012		.374(.709)	-	-	-	-	-
2014		.155(.877)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

#### 6.4.4 Multivariate regression analyses, results, and discussion: CGI and cost of capital

Table 13 reports the findings on the relation between CGI and cost of capital. The hypothesis developed for this relation was H1c, which states: “There is no statistically significant relationship between corporate governance index and cost of capital”. The findings reveal that the relation is (-6.793\*\*\*) for all firm years; the relationship is highly significant and negative. A look at the five years individually shows that they were all strongly significant and negative. From 2010 to 2014, the findings are (-3.138\*\*\*), (-2.673\*\*\*), (-3.240\*\*\*) and (-2.253\*\*), respectively. It was shown that throughout the years, there was a strong relation between CGI and cost of capital, but the findings are negative, as expected. The reasoning behind these findings is that increasing corporate governance leads to a decline in cost of capital.

**Table 13: OLS Regression of OECD CGI on Cost of Capital (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.359	.29	.559	.341	.465	.293
Standard Error		.187	.229	.127	.155	.172	.229
Durbin- Watson		1.170	1.945	2.195	1.794	1.587	1.889
F-Value		24.668(.000)***	5.302(.000)***	14.461(.000)***	6.591(.000)***	10.380(.000)***	5.337(.000)***
No. of Observations		803	159	160	163	163	158
Constant		-3.902(.000)***	-.086(.932)	-1.601(.112)	.188(.851)	-1.373(.172)	-.852(.396)
<b>Independent Variable</b>							
Corporate Governance Index	-	-6.793(.000)***	-3.138(.002)***	-2.673(.008)***	-1.042(.299)	-3.240(.001)***	-2.253(.026)**
<b>Control Variables</b>							
Firm Size		3.504(.000)***	.810(.419)	.590(.556)	1.810(.072)*	2.194(.030)**	1.729(.086)*
Sales Growth		.142(.887)	1.241(.217)	-1.136(.258)	-.297(.767)	-.109(.914)	-.858(.392)
Audit Committee No.		-.667(.505)	.051(.959)	-.179(.858)	-.050(.960)	-.222(.824)	-1.223(.223)
Corporate Governance Committee No.		-.953(.341)	1.667(.098)*	.562(.575)	-1.191(.236)	-1.133(.259)	-1.230(.221)
Leverage		.031(.975)	-.195(.846)	.553(.581)	.290(.772)	.422(.674)	-1.277(.204)
Capital Gain Yield		2.859(.004)***	2.374(.019)**	-3.562(.000)***	.313(.754)	2.515(.013)**	1.613(.109)
Stock Market Capitalisation		-2.465(.014)**	-1.206(.230)	-1.283(.202)	.224(.823)	-1.190(.236)	-.299(.765)
Corruption Index		7.147(.000)***	1.189(.236)	2.088(.039)**	-.194(.847)	4.527(.000)***	2.030(.044)**
Inflation		-.255(.798)	-.214(.831)	1.211(.228)	1.517(.131)	-.518(.605)	.770(.443)
GDP Per Capita		-3.016(.003)***	-1.765(.080)*	-.820(.413)	.601(.549)	-2.316(.022)**	.095(.924)
Population		-.385(.700)	-.454(.651)	.217(.829)	.325(.745)	-.468(.641)	-.294(.769)
Masculinity		11.515(.000)***	2.607(.010)***	1.747(.083)**	-.418(.676)	6.073(.000)***	2.213(.028)**
Power Distance		7.545(.000)***	2.367(.019)**	1.829(.069)*	-.434(.665)	3.481(.001)***	1.576(.117)
Anglo American		2.169(.030)**	.978(.330)	.306(.760)	-.555(.580)	1.400(.164)	.378(.706)
2010		-.804(.422)	-	-	-	-	-
2011		-.674(.501)	-	-	-	-	-
2012		-.647(.518)	-	-	-	-	-
2014		.431(.666)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

According to some prior research, firms obtain funds through loans as well as through equity capital and investments, and these all have a cost depending on the source. In firms where the owners are the dominant shareholders, it is sometimes unlikely that they would invest their own money into their firm. In fact, as Tran (2014) points out, these firms often do not disclose their corporate governance structure. Without disclosing their corporate governance structure, these firms are expected to pay more for their loans. In other words, with little corporate governance displayed, firms are likely to have higher costs of capital. On the other hand, if firms are willing to disclose their corporate governance structure, it would be available to would-be lenders, who could then assess whether the firm is a good risk. Closely associated with credit rating is cost of capital, as the credit lending establishment is also affected by a firm's level of corporate governance. As noted above, weak corporate governance structure is associated with a higher cost of capital.

In looking at CGI and firm performance, using CGI as an independent variable and several proxies for firm performance, we can see a relation between the two. There is a significant relationship between CGI and firm performance in terms of the risk-taking, credit rating and cost of capital. We show mostly a negative and significant relationship for risk-taking and cost of capital. The use of the CGI and proxies for firm performance show a stronger reliance on the findings because the important elements of CG are included in the CGI, and various measures are used to test risk-taking. Credit rating and cost of capital were seen to be different: while both are significant, for credit ratings the relation is positive, and for cost of capital it is negative. The finding here is that if greater corporate governance were disclosed, it would lead to a decrease in the cost of capital. The findings reveal that as risk-taking increases, credit rating decreases, raising the cost of capital. The null hypothesis is rejected.

## **6.5 Descriptive statistics of the dependent and all continuous independent variables based on all (200) firm- year observations**

Table 14 discusses the dependent variables and all continuous independent variables based on all 200 firm-year observations. Standard deviation describes how spread out the data is from the mean. Skewness and kurtosis test statistics, shown in Columns 4 and 5, respectively, reveal a test for normal distribution.

### **6.5.1 Descriptive statistics of the financial performance measures**

Panels A to F describe the financial performance measures. Panels A and B of Table 14 give the summary statistics for the variables used in this study. Across the years 2010 to 2014, Panels A to F give the descriptive statistics of the variables used as proxies for the relation between CGI and risk-taking, credit rating and cost of capital. Panels G to M describe the mechanisms used to measure corporate governance.

Panel A of Table 14 shows that R&D/Total Assets ranges from a minimum of (.000107) to a maximum of (.189341), with an average of (0.26) for the overall sample period. The standard deviation is 0.31, indicating that there is a relatively small deviation in R&D/Total Assets among the firms. The average and standard deviation are consistent for each individual year as



well as for all firm years. The skewness varies only a little, showing that these figures are within normal range. However, while the minimums declined for the years 2010 to 2014, the maximums increased over the same period. Yet, these were within normal distribution, so the means remain similar. In 2014, while the minimum was (.00037), the maximum reached its highest, at (.189341), resulting in a slightly smaller mean. This is the largest skewness and largest kurtosis, at (2.3320) and (7.623), respectively, in the whole set. This can be seen as a good proxy for firm performance, since there were no wide variations, as evidenced by the small standard deviation in all cases. This measure was relevant and appropriate in all firms and was a good measure of firm performance. Corporate governance was associated with superior firm performance (Al-Malkawi et al., 2014).

Panel B gives summary descriptive statistics for R&D/Total Sales. In Table 14, the findings show that R&D/Total Sales ranges from a minimum of (.000029) to a maximum of (1.094466), with an average of (.045) for the overall sample period of 2010 to 2014. The standard deviation is (0.96), which does not represent a major range. The mean is relatively stable over the period, except in 2014, where it is relatively smaller. The standard deviation fluctuates over the period. For example, in 2010, the standard deviation is (.103); it increases to (.113) in 2011, to (.100) in 2012, to (.105) in 2013 and to (.046) in 2014. The skewness and kurtosis are (7.173) and (62.654), respectively, which shows that this proxy for firm performance is outside its normal distribution. This was supported by the variations in the minimum and maximums for R&D/Total Sales for the period. For example, in 2010, the minimum was (.222) and the maximum was (.798401). In 2011 to 2014, the minimums were (.000094), (.000029), (.000078) and (.000105), respectively, and the maximums for the same years were (1.094466), (.919255), (1.028318) and (.226596), respectively. An explanation for these differences may be the different levels of investment in R&D that were undertaken relevant to the amount earned in total sales.

**Table 14: Summary Descriptive Statistics of the Dependent and all Continuous Independent Variables Based on All (200) Firm- Year Observations**

Dependent/Independent Variables	Mean	Std. Dev.	Skewness	Kurtosis	Mini-mum	Maxi-mum
Panel A: R&D/Total Assets	.026	.031	1.935	4.494	.000107	.189341
2010	.027	.030	1.54	1.80	.000107	.122782
2011	.026	.031	1.934	4.534	.000033	.175098
2012	.026	.031	1.942	4.529	.000010	.173760
2013	.026	.031	2.018	4.988	.000019	.179727
2014	.025	.030	2.332	7.623	.000037	.189341
Panel B: R&D/Total Sales	.045	.096	7.173	62.654	.000029	1.094466
2010	.047	.103	6.032	40.778	.000222	.798401
2011	.046	.113	7.401	63.689	.000094	1.094466
2012	.046	.100	6.611	51.834	.000029	.919255
2013	.047	.105	7.224	62.882	.000078	1.028318
2014	.038	.046	1.851	3.265	.000105	.226596
Panel C: R&D Expenditure	1446.569	2381.188	2.288	5.453	.103093	15313.702
2010	1324.134	2169.901	2.139	4.012	.878146	9483.000
2011	1435.068	2331.373	2.048	3.511	.309278	10061.196
2012	1443.175	2359.039	2.179	4.457	.103093	11376.606
2013	1450.149	2402.535	2.415	6.464	.384615	13527.224
2014	1585.152	2660.118	2.516	7.273	.360360	15313.702
Panel D: Return on Assets (ROA)	.053	.065	.493	6.359	-.336107	.487689
2010	.059	.056	1.579	4.792	-.079364	.357272
2011	.059	.064	.131	5.666	-.276689	.351716
2012	.054	.064	.726	3.230	-.149412	.328323
2013	.046	.0702	-.754	7.165	-.336107	.292414
2014	.048	.069	1.455	8.902	-.164164	.487689
Panel E: Credit Rating S&P	16.12	2.881	.108	-.159	9	23
2010	16.19	2.911	.086	-.242	10	23
2011	16.17	2.844	.182	-.188	10	23
2012	16.12	2.888	.130	-.187	9	23
2013	16.04	2.889	.107	-.089	9	23
2014	16.07	2.905	.044	.032	9	23
Panel F: Cost of Capital	.167	.271	3.887	16.568	.012487	2.131678
2010	.161	.276	4.463	22.563	.016883	2.131678
2011	.162	.229	3.544	13.176	.019131	1.380530
2012	.156	.216	3.591	14.012	.020761	1.515556
2013	.169	.285	3.362	14.212	.018470	1.988958
2014	.186	.333	3.548	12.605	.012487	2.105843
Panel G: Block Ownership (BO)	.435	.245	.170	-.859	.050440	1.000
2010	.438	.243	.179	-.763	.054100	.959000
2011	.440	.250	.188	-.825	.055400	1.000
2012	.439	.249	.099	-.933	.050440	1.000
2013	.425	.245	.175	-.840	-.050440	1.000
2014	.432	.245	.232	-.825	.060000	1.000
Panel H: Institutional Ownership (IO)	.165	.119	2.066	7.404	.05000	1.057360
2010	.181	.132	1.704	3.685	.05000	.7688
2011	.163	.122	1.744	3.387	.050520	.649400
2012	.160	.108	1.538	2.303	.050100	.561350
2013	.153	.094	1.039	.567	.05000	.480700
2014	.169	.133	3.142	16.522	.05000	1.057360
Panel I: Director Ownership (DO)	.021	.067	6.734	67.538	.000	1.000853
2010	.020	.062	5.614	40.321	.00030	3.429923
2011	.021	.065	5.285	34.801	.000	.569800
2012	.019	.054	4.036	17.382	.000	.340400
2013	.018	.056	4.487	22.869	.000	.419500
2014	.025	.096	7.460	68.895	.000	1.000853
Panel J: Independent Directors (ID)	.616	.231	-.461	-.803	.071429	1.000
2010	.608	.232	-.431	-.785	.071429	1.000
2011	.616	.232	-.380	-.909	.076923	1.000
2012	.620	.228	-.452	-.752	.083333	1.000
2013	.618	.233	-.538	-.721	.100000	1.000
2014	.619	.234	-.512	-.805	.100000	1.000
Panel K: Board Size (BS)	12.23	3.41	.691	.133	5	22
2010	12.25	3.524	.695	.005	5	22
2011	12.27	3.472	.633	.110	5	22
2012	12.28	3.442	.772	.314	6	22
2013	12.25	3.361	.698	.200	6	22
2014	12.10	3.307	.667	.138	6	22
Panel L: Board Diversity (BD)	.79	.413	-1.227	.710	0	1
2010	.73	.445	-1.044	-.919	0	1
2011	.76	.431	-1.195	-.578	0	1
2012	.80	.405	-1.473	.170	0	1
2013	.84	.368	-1.869	1.508	0	1
2014	.84	.406	-.710	4.316	0	1
Panel M: Frequency of Board Meetings (FBM)	8.08	3.957	.307	2.375	0	35
2010	7.98	4.420	1.260	7.249	0	35
2011	7.75	3.800	-.073	.505	0	18
2012	8.07	3.774	-.106	.278	0	19
2013	8.11	3.792	.065	.433	0	19
2014	8.50	3.962	-.101	-.007	0	18

Panel C discusses R&D expenditure as a proxy for firm performance. The average that was spent on R&D was (1446.569), and the standard deviation was (2381.188), which shows that there was a relatively large deviation from the average for the overall sample period. The minimum and maximum for the overall sample period were (.103093) and (15313.702), respectively. The minimums and maximums for the individual years vary greatly, which supporting the sizes of the skewness and kurtosis. In other words, there was inconsistency among the firms in how they invested in R&D. These findings show that different firms made their decisions to spend on R&D based on their specific characteristics.

Panel D deals with return on assets (ROA). Over the sample period, the average is (.053) and the standard deviation is (.065). For the following years, the mean was (.059) in 2010 and 2011, and declined to (.054) in 2012 and (.046) in 2013. It increased to (.048) in 2014. The standard deviation shows a noted increase in 2013 and a decline in 2014. The minimums are inconsistent over the years, while the maximums are more consistent.

In Table 14, Panel E deals with credit rating using S&P. These findings are more consistent. While the minimum was (9) and the maximum (23), the average was (16.12), with a standard deviation of (2.881); skewness and kurtosis were (-.159) for the overall sample period. This shows that the standard deviation was not great; this is supported by the skewness and kurtosis, with the kurtosis also showing the negative relation to the credit rating. The findings for credit ratings are consistent in all areas: the mean and the deviation did not change drastically, and the same could be said about the minimums and maximums for all the years. There was consistency in how credit rating performed as a proxy for firm performance.

Panel F deals with cost of capital, and the findings reveal some deviations in the means. Skewness and kurtosis show that some of the findings were outside the normal distribution. There are also wide variations between the minimums and maximums, which are reflected in the variations in the means and standard deviations. This shows that some of the findings are within the normal range, but many others are not.

### **6.5.2 Descriptive statistics of the independent/alternative governance mechanisms**

Panel G shows the findings regarding block ownership. In Panel G, the mean is (.435), with a standard deviation of (.245) over the overall sample period. There is not much variation over the individual years from 2010 to 2014. The minimum for the overall period is (.050440) and the maximum is (1.000). There were small variations among these figures over the years, showing that there is consistency in this area. While there is some variation in the skewness and kurtosis, these are within normal distribution. In terms of block ownership, the literature holds that it is possible for block owners with large blocks of stocks to have an advantage over other shareholders (Barclay and Holderness, 1989). The Securities and Exchange Commission considers investors with over 5% of equity as block holders (Barclay and Holderness, 1989). These block owners are seen to be an outside group with concentrated power over managers and private holders who, because of their size, could enjoy benefits that other shareholders do not. For example, it was shown that block owners could have an advantage over other shareholders by having the right to buy shares at premium prices (Barclay and Holderness, 1989).

Block owners could also be companies with minority interests in other companies, or individuals or directors holding a relatively large amount of stock in a company. Since block owners could be made up of different individuals, it is clear that they could have different effects on a firm (Shleifer and Vishny, 1997; Mehran, 1995). It is important to consider this as a key corporate governance mechanism, because block owners could have a detrimental or a beneficial impact on firm performance (Jensen, 1993). This is an important measure of corporate governance, considering that this study deals with a variety of countries from Anglo and Continental traditions, where accounting and legal systems differ (Mallin et al., 2010).

Panel H deals with institutional owners, and shows that there are variations in the mean and the standard deviation in the overall study period. For example, while the average is (.165), the standard deviation is (.119). Skewness is (2.066) and kurtosis is (7.404). These figures are outside normal distribution. The minimum for the overall period is (.0500), and the maximum is (1.057360). However, for the individual years, while the minimum appears to be consistent, the maximum varies greatly, from (.7688) in 2010 to (.649400) in 2011, (.561350) in 2012,

(.480700) in 2013 and (1.057360) in 2014. This seems to suggest that certain firms have heavy institutional investments, while other firms do not. This may also vary for individual years.

The issue of institutional ownership was seen as important, as some institutions invest only in certain companies. These institutional owners have a fiduciary responsibility to their investors to engage with firms that provide good or reasonable investment. Institutional investors are encouraged not to invest in firms which do not pay dividends (Grinstein and Michaely, 2005). Companies that are considered good, sound investment choices pay dividends. Therefore, including block owners as a corporate governance mechanism was a good choice, as institutional owners are seen as having a positive impact on management, as they determine the extent to which management is monitored, in order to lower risk (Grinstein and Michaely, 2005). Agency theory is relevant for explaining what is happening here, as it promotes greater monitoring of management to ensure that shareholders' rights are properly managed and protected.

Panel I deals with director ownership. Director ownership is an important corporate governance mechanism because directors are considered necessary for monitoring the actions of management. Since this study looks at firms outside the Anglo tradition, examining director ownership is important because in many Continental countries, ownership of firms includes many directors (La Porta et al., 1999). In countries from a Continental tradition, many founding members still own the firms, or at least the majority of shares (Chen and Jaggi, 2000; Ho and Wong, 2001).

In Panel I, the overall period has a mean of (.21) and a standard deviation of (0.067). The minimum for this period is (.000) and the maximum is (1.00853). The other minimums are also roughly (.000), but the maximums vary a great deal. For example, while the average is (1.000853) over the whole period, for 2010 the maximum is (3.429923), for 2011 it is only (.569800), for 2012 it is (.419500) and for 2014 it is (1.00853), the same as the overall period. The skewness and kurtosis show that the range is outside the normal distribution.

These findings are supported by other research studies that show that in cases where directors own their majority shares in their companies, they tend not to have as much corporate governance as is found in other companies without directors as owners. Since in many of these instances owners and managers are the same people, there may be no need to motivate managers. The interests of agent and owners coalesce in the same person. The problem that

could arise here is that of the free rider issue, where the firm is not monitored as much, which encourages other firms the opportunity to take over. Director owners managing the company could present a threat to other shareholders; it is accepted that owners will look after their interests, and this could disadvantage other shareholders. According to Morck et al. (1988) and McConnell and Servaes (1999), director owners could ensure that they have higher salaries and receive advantageous bonuses and compensation. In the case of low director ownership, it would follow that there is likely to be better corporate ownership (McConnell and Servaes, 1990).

Panel J deals with independent directors. The findings reveal that the overall sample period shows an average of (.616) and a standard deviation of (.231). The average and standard deviation for the individual years are basically the same, showing that there is not much range here. The minimum differs, but the maximum is the same at (1.000). The skewness and kurtosis reveal that the findings are within normal distribution.

According to the literature, independent directors are important for safeguarding the interests of shareholders. Having independent directors on the board means that there is less of a likelihood of a relationship with management. Independent directors are considered to be free of the influence of management, and therefore more likely to protect the interests of shareholders (Radebaugh et al., 2006). Therefore, firms with more independent directors are more likely to be considered better firms in which to invest. The explanation of the role of independent directors would flow from the fact that board directors play an important role in cutting down on conflicts between management and shareholders (Meckling, 1976; Netter et al., 2009). This explains the use of agency theory. However, independent directors stand out as being able to serve as a resource for advising and supervising managers. This would use resource theory or independent directors are seen as bringing with them knowledge from the outside that could be an asset to the firm.

Independent directors are critical to this study, particularly as it deals with the Anglo and Continental traditions. Previous studies point out that in the Anglo tradition, boards consist of one tier, which is made up of primarily outside or independent directors (Dahya et al., 2002). But this type of board also consists of inside directors, resulting in conflicts of interest on the board. (Solomon and Solomon, 2004; Davidson, 1994). Agency theory would apply to an understanding of the relationship between independent and inside directors. Resource

dependence theory would apply in discussing the relationship between independent directors and management.

On the other hand, the Continental model consists of two tiers, with the upper tier comprising supervisory nonexecutive members whose major role is monitoring management, and the lower tier comprising executive members, or management (Davidson, 1994). This prevents the conflicts of interest found in the Anglo model. Therefore, the importance of studying independent directors can be seen in terms of the role they play in protecting shareholders' interests.

Panel K deals with board size. The minimum size of all firms is (5), while the largest is (22). These are the same statistics for the overall period as well as for each year; the boards studied remained the same throughout. The average size for the overall period was (12.23), and this fluctuated only a little over the period, with the least being (12.10) in 2006 and the greatest being (12.28) in 2012. The skewness and kurtosis show that these findings are within normal distribution.

Previous studies reveal that boards can be too large or too small. If they are too small, it is expected that they will not be able to carry out the responsibilities that would allow them to monitor management adequately. Boards that are too large could also be hampered by the number of members. Studies have shown that there are optimal sizes for boards (Lipton and Lorsch, 1992). According to these researchers, nine is the optimal number of board members, although they recognise that having one more could also work (Lipton and Lorsch, 1992). Beyond this, it becomes difficult to discuss a matter efficiently, and decision making is hampered through the number of people taking part in the discussion (Lipton and Lorsch, 1992). More board members could prevent monitoring, since the number of board members could contribute to poor communication (Lipton and Lorsch, 1992). This explanation supports agency theory and stewardship theory.

However, some researchers believe that a large board is advisable because it means that there would be more experts to provide advice, thereby acting as resources for the firm (Haniffa and Hudaib, 2006). This is supported by resource theory. Those who support the idea of a large board explain that a large board provides more value to the firm (John and Senbet; Yawson, 2006). This explanation could also be seen as supporting resource theory. Better monitoring and more expertise and skills are seen as advantages to having a larger board.

Panel L deals with board diversity. The overall sample period has an average of (.79), with a standard deviation of (.413). The minimum for this period is (0) and the maximum is (1); these figures were also accurate for individual years. The means for the individual years are (.73), (.76), (.80), (.84) and (.84), respectively. The standard deviation ranges from (.368) in 2013 to (.445) in 2010. Over this period, diversity increased. Only 2013 was noticeably below the others, but there were different ranges of deviation. The skewness and kurtosis are negative, showing that all was not within normal range. Some ranges are negative and some are positive, but the relationship is largely negative.

According to some researchers, having a diverse board is advantageous because it means having a wealth of different perspectives on the board (Van der Walt and Ingley, 2002). While age, gender, ethnicities and cultures are important, it was noted that religion could also be included in the desired types of diversity (Van der Walt and Ingley, 2002). It was further argued, using agency theory, that diverse board members could increase board independence, which could increase monitoring of management (Van der Walt and Ingley, 2002). It was argued that this would promote better protection of shareholders' rights, therefore appealing to agency theory. However, those who argued that diversity would lead to better decision making appealed to resource dependence theory, as they saw diversity as leading to greater expertise for the firm.

Other researchers believe that having a monoculture is important to boardroom uniformity, and therefore they oppose diversity. They see diversity as leading to different viewpoints that could compromise decision making, which may even retard monitoring of management (Rose, 2007). Another criticism of board diversity is that it may contribute to tokenism and that the focus may be so much on diversity that the true value of what diverse board members add may not even be appreciated (Rose, 2007).

Panel M deals with the frequency of board meetings. According to the findings, the minimum number of meetings was (0) and the maximum was (35) in the overall sample period. The average over the sample period is (8.08) and the standard deviation is (3.957). The skewness and kurtosis are (.307) and (2.375), suggesting that these are within normal range. A look at the individual years reveals that the smallest frequency was in 2011 at (7.75) and the largest was in 2014. The standard deviations from 2010 to 2014 are (4.420), (3.800), (3.774), (3.792)



and (3.962). There was more deviation in 2010, but the other values decreased from 2010 to 2012 and then increased from 2013 to 2014.

The literature on the relationship between frequency of board meetings and firm performance, particularly with respect to risk-taking, is not conclusive. According to Vafeas (1999), some believe that frequent board meetings would ultimately have a positive impact on a firm's risk-taking, credit rating and cost of capital, but another view holds that board meetings do not benefit shareholders or the credit rating of a firm. However, there appears to be more support for frequent board meetings benefitting forecasts of management earnings (Karamanou and Vafeas, 2005). Another study shows that frequent meetings contribute to improved firm performance (Mangena and Taurigana, 2006).

### **6.5.3 Summary descriptive statistics of the firm and country level control variables based on all (200) firm- year observations**

In looking at the firm-level control variables in Table 15, there are wide differences with respect to firm size. Over the sample period, the minimum firm size is (2.464) and the maximum is (5,875). The standard deviation is (.617) and skewness and kurtosis are (0.59) and (-.210), respectively. The standard deviation was similar to the average in each year. The maximum and minimum are also consistent. The skewness and kurtosis suggest that firm size are within the normal range, except that the kurtosis is negative, indicating that the distribution is flat. The firm size is relatively constant.

Sales growth shows erratic behaviour. For the overall sample period, the average sales growth is (0.75), with a standard deviation of (.177), a minimum of (-.431) and a maximum of (2.386). Throughout the individual years, the minimum is a negative value and varies widely from year to year, dropping first from (-.288) to (-.229), rising to (-.431), and declining to (-.323) in 2013 and to (-.182) in 2014. The maximum was just as erratic. The standard deviation varies for the different years. Skewness and kurtosis range widely, indicating that the sales were not in the normal range. Sales growth therefore varied widely among the firms, and this may be the result of the wide range of firms used, not only in terms of size but in terms of different firm characteristics.

**Table 15: Summary Descriptive Statistics of the Firm and Country Level Control Variables Based on All (200) Firm- Year Observations**

Dependent/Independent Variables	Mean	Std. Dev.	Skewness	Kurtosis	Mini-mum	Maxi-mum
<b>Firm Level Control Variables</b>						
Firm Size	4.272	.617	.059	-.210	2.464	5.875
2010	4.223	.630	.082	-.333	2.561	5.875
2011	4.270	.622	.064	-.233	2.549	5.855
2012	4.277	.615	.048	-.135	2.521	5.835
2013	4.284	.612	.054	-.139	2.499	5.817
2014	4.306	.607	.064	-.092	2.464	5.811
Sales Growth	.075	.177	4.467	42.102	-.431	2.386
2010	.115	.267	4.724	33.767	-.288	2.386
2011	.151	.193	2.488	8.166	-.229	1.114
2012	.056	.110	.242	4.451	-.431	.467
2013	.019	.118	1.703	7.911	-.323	.715
2014	.033	.099	1.389	3.919	-.182	.505
Audit Committee No.	4.28	1.114	.766	.693	2	8
2010	4.19	1.105	.661	.280	2	8
2011	4.23	1.112	.678	.394	2	8
2012	4.29	1.159	.883	.855	2	8
2013	4.37	1.118	.865	1.068	2	8
2014	4.35	1.075	.772	.954	2	8
Corporate Governance Committee No.	3.75	1.328	.619	.535	1	9
2010	3.71	1.332	.623	.627	1	9
2011	3.74	1.351	.655	.658	1	9
2012	3.76	1.336	.651	.756	1	9
2013	3.77	1.314	.617	.468	1	8
2014	3.78	1.321	.566	.330	1	8
Leverage	.604	.176	-.144	-.164	.025	1.254
2010	.599	.172	-.151	-.261	.141	1.091
2011	.598	.176	-.2800	-.184	.075	1.017
2012	.605	.178	-.331	-.212	.025	.956
2013	.604	.175	-.112	-.360	.169	1.025
2014	.612	.180	.129	.179	.164	1.254
Capital Gain Yield	.416	6.652	28.944	883.055	-1.000	204.130
2010	1.763	14.784	13.066	178.827	-1.000	204.130
2011	.229	.842	7.447	76.613	-1.000	9.540
2012	.059	.466	2.773	22.571	-1.000	3.780
2013	.071	.420	4.247	39.751	-1.000	4.000
2014	-.043	.394	-1.005	2.052	-1.000	1.270
<b>Country Level Control Variables</b>						
Stock Market Capitalisation	3684933.023	5849817.325	2.705	6.303	6368.310	26330589
2010	3351718.241	4810517.271	2.382	4.291	60368.310	17283452.00
2011	2987674.7	4355689.989	2.410	4.374	108393.2	15640707
2012	3404301.259	5213576.655	2.478	4.602	108989.2	18668333
2013	4275871.070	6754489.74	2.473	4.575	170122.7	24034854
2014	4405099.844	7437773.459	2.542	4.804	143465.8	26330589
Corruption Index	71.920	12.303	-1.362	1.369	39	89
2010	72.800	13.817	-1.250	1.045	39	89
2011	73	13.591	-1.364	1.342	39	88
2012	71.6	11.554	-1.414	1.769	42	85
2013	70.8	11.053	-1.537	1.409	43	81
2014	71.4	11.183	-1.598	1.505	43	81
Inflation	.0169	.011	-.196	-.172	-.009	.045
2010	.0138	.0125	.055	-.417	-.009	.033
2011	.026	.011	-1.129	1.550	-.003	.045
2012	.019	.007	-1.108	1.263	.000	.030
2013	.013	.006	.536	-.691	.004	.026
2014	.011	.009	.203	-1.335	-.001	.027
GDP Per Capita	45217.858	8931.178	.374	.101	28992.6	67524.800
2010	42606.68	6166.426	-.359	-.764	30736	51800.900
2011	46287.77	7944.420	.157	-.136	31975	62133.7
2012	45651.90	10033.099	.502	.250	28992.6	67524.8
2013	45794.44	10083.090	.536	-.021	29863.2	67458.4
2014	45748.50	9388.996	-.053	-.950	30262.2	61887
Population	82042575.4	83685858.43	2.007	3.060	4560155	318857056
2010	81279473.40	82707764	1.997	3.070	4560155	309326295
2011	81718174	83283697.06	2.004	3.093	4576794	311582564
2012	81959953.2	83834034.17	2.020	3.145	4586897	313873685
2013	82357779.9	84378066.80	2.031	3.179	4595281	316128839
2014	82897496.5	85037054.6	2.040	3.215	4612719	318857056
Masculinity	62.5	14.460	.598	.397	42	95
2010	62.5	14.460	.598	.397	42	95
2011	62.5	14.460	.598	.397	42	95
2012	62.5	14.460	.598	.397	42	95
2013	62.5	14.460	.598	.397	42	95
2014	62.5	14.460	.598	.397	42	95
Power Distance	44.2	11.877	.614	-.720	28	68
2010	44.2	11.877	.614	-.720	28	68
2011	44.2	11.877	.614	-.720	28	68
2012	44.2	11.877	.614	-.720	28	68
2013	44.2	11.877	.614	-.720	28	68
2014	44.2	11.877	.614	-.720	28	68

The audit committee number demonstrated more consistency: while the minimum is 2, the maximum is 8; this was consistent not only for the overall sample period, but for each year. The standard deviation was average. The skewness and kurtosis reveal that the audit committees were not all within the same range. The standard deviation is average. The skewness and kurtosis reveal that the committees were within normal range with normal distribution. Leverage was shown to vary among firms, with the standard deviation with a small range, from a low of (.172) in 2010 to a high of (.180) in 2014. However, skewness and kurtosis are both negative. Leverage was not shown as being within a normal range. This may be because of the differences between firms.

For the country-level control variables, the figures show major differences in the average and standard deviation, although the skewness and kurtosis are within normal range and positive. Minimums and maximums also differ; this was based on the fact that the countries had different rules for capitalisation.

Corruption index varied among firms from average minimums of 39 over the whole sample period with the highest being 89. The figures for the individual years were within range, with the lowest being (39) and the highest (43). The average over the period for the corruption index was (71,920), and for 2010 it was also very high at (72,800). This suggests that there was a particular situation of corruption that developed with certain firms during the period. From 2011 to 2014, the average was (73) in 2011, (71.6), (70.8), and (71.4) for the remaining years. The corruption index, except for that particularly glaring situation, was approximately (71). The standard deviation was high, between (11.053) in 2013 and (13.817) in 2010. The skewness and kurtosis suggest that there were no great differences, but that the figures are negatively skewed. The kurtosis shows abnormal distribution.

Inflation was erratic during this period: the average inflation was (.0169), with a standard deviation of only (.011). The rates are negatively skewed and kurtosis is also negative at (-.172). The lowest inflation is (0.009) and the highest is (.045). However, inflation fell to (.0138) in 2010 and (.011) in 2014. The standard deviation was relatively small during this period, with the skewness being negative for 2011 and 2012 at (-1.129) and (-1.108), respectively.

GDP per capita did not change dramatically between 2010 and 2014, although standard deviation fluctuated. The minimum did not change markedly, although there were changes in the maximum. The skewness and kurtosis were negative, suggesting that these were not within

normal range. The explanation for this is that the different countries studied did not change their GDP per capita markedly during this period.

The population figure did not change markedly over this period. Between 2010, with a population of (81,279,473), and 2014, with a population of (82,897,496), the population growth was a little over (1.6) million people. The minimum was (45,600,155) and the maximum was (309,326,295) in 2010 and the difference was in 2014 with minimum of (4,612,719) and the maximum was (318,857,056) people. All the minimums are comparable, as are the maximums. The skewness and kurtosis are within normal range and positive.

The characteristics of masculinity and power distance remain constant throughout the period and for the individual years. For all the years from 2010 to 2014, masculinity is (62.5), the minimum is (42) and the maximum is (.95). Similarly, the figure for power distance is (44.2) for all years. The minimum from 2010 to 2014 is (28), and the maximum is (68). Skewness is (.614) and kurtosis is (-.720) for all years. These country characteristics were important to the various countries and demonstrated the influence that the countries had over these different variables and over the effect that these variables had on the operation of firms within these countries.

#### **6.6 Pearson's and spearman's correlation matrix of financial performance and all continuous corporate governance variables for all (200) firm years**

Table 16 compares Pearson's and Spearman's correlation matrix of financial performance and all continuous corporate governance variables for all 200 firm years. With the Pearson's parametric correlation coefficients presented on the left and the Spearman's non-parametric correlation coefficients presented on the upper right side, it is possible to tell whether the correlation between variables is significant or not. A comparison of the relations between the Pearson and Spearman correlation matrix shows that the financial performance and the corporate governance variables used in the study are strongly correlated; this is evident from looking at the closeness in the scores along the clear line representing perfect correlation. We can see that R&D/Assets and R&D/Sales are highly significant at 5%. R&D/Assets is correlated to R&D/Sales at (.939\*\*), and R&D/Assets is correlated to R&D expenditure at (.713\*\*). R&D expenditure is correlated to R&D/Sales at (.744\*\*), and R&D expenditure is correlated to ROA at (.008). In Table 16, the correlation shows that there are significant relations at about 5% between most of the financial performance and corporate governance

variables. For example, there is positive significance between R&D/Assets and R&D/sales, as noted, and between R&D expenditure and R&D/Sales. But the correlation between ROA and R&D expenditure is not significant. The correlation between RA S&P and ROA is positive and significant; this is evident with the (.254\*\*) and (.222\*\*), respectively. Other positive and significant correlations are between independent directors and board size, between corruption index and stock market capitalism, at (.248\*\*) and (.292\*\*), between inflation and corruption index, at (.184\*\*) and (.141\*\*), between audit committee number and governance committee number at (.156\*\*) and (.156\*\*), and between audit committee number and firm size, at (.303\*\*) and (.320\*\*).

**Table 16: Pearson's and Spearman's Correlation Matrix of Financial Performance and All Continuous Corporate Governance Variables for All (200) Firm**

Variable	RD Assets	RD Sales	RD Expo	ROA	RA S&P	AVG ICC	BS	FBM	BO	DO	IO	BD	ID	CGI	SMC	COR R IDX	INFL	GDPC	POP	MASCU	POWE R D	CGC NO	AC	FS	SG	LVG	CGY
RD Assets		.954**	.779**	.114**	.170**	.113**	-.083*	-.205**	-.126**	-.034	-.030	.060	.087*	-.125**	.076	.110**	.037	.102*	.032	.174**	-.021	.027	-.064	-.038	.047	-.069	.044
RD Sales	.939**		.793**	.073	.185**	.096*	-.080*	-.170**	-.120**	-.057	-.044	.069	.085	-.105**	.072	.082*	.021	.096*	.031	.138**	.004	.034	-.085*	.043	.050	-.096*	.034
RD Expo	.713**	.744**		.015	.366**	.132**	.171**	-.161**	-.116**	-.182**	.008	.091*	.105*	.027	.233**	.075	.005	.078	.175**	.158**	.076	.120**	.091*	.597**	-.052	.087*	.060
ROA	.162**	.104*	.008		.222**	-.111**	-.178**	.027	.041	-.055	-.092**	.040	.127**	.075*	.023	.121**	-.027	.095**	-.081*	-.072*	-.148**	-.055	-.067*	-.218**	.162**	-.331**	-.016
RA S&P	.198**	.195**	.368**	.254**		.201**	.082*	-.153**	-.013	-.121**	-.122**	.028	.007	-.095**	.208**	.162**	.152**	.177**	.002	.331**	.001	.040	.135**	.373**	-.089*	-.300**	.035
AVG ICC	-.017	-.039	-.006	-.206**	-.018		-.053	-.395**	-.002	.068*	-.029	-.223**	-.368**	-.503**	.123**	.050	.255**	-.095**	.054	.439**	.206**	-.253**	.092**	.118**	-.010	-.027	.146**
BS	-.083*	-.051	.188**	-.196**	.091*	-.022		-.033	-.153**	-.087**	.019	.229**	-.206**	.185**	.087**	-.030	-.033	-.165**	.279**	-.069*	.111**	.246**	.303**	.445**	-.082**	.258**	.008
FBM	-.204**	-.147**	-.100*	-.097**	-.096**	-.022	-.081*		.066*	-.153**	.110**	.237**	.276**	.418**	-.098**	-.065*	-.234**	.092**	-.122**	-.348**	-.117**	.155**	-.073*	-.042	-.015	.075*	.012
BO	-.015	-.033	.002	.084**	.129**	.004	-.191**	.051		-.069*	-.109**	-.038	.246**	-.063*	.054	.114**	-.010	.134**	-.026	.005	-.108**	.058	.020	-.011	.031	-.064*	.024
DO	-.026	-.050	-.214**	-.088**	-.148**	.021	-.085**	-.069*	-.131**		.106**	-.283**	-.339**	-.272**	-.070*	-.359**	.036	-.287**	.189**	.154**	.167**	-.212**	-.142**	-.210**	.085**	.060	-.034
IO	-.028	-.019	.026	-.095**	-.114**	.007	.029	.105**	-.240**	.094**		-.063*	-.144**	-.008	-.066*	-.036	-.059	-.042	.053	-.136**	.059	-.001	-.014	-.040	.017	-.008	-.023
BD	.090*	.101*	.105**	.106**	.024	-.124**	.213**	.101**	-.012	-.262**	-.065*		.290**	.322**	.057	.147**	-.186**	.078*	-.058	-.314**	-.066*	.263**	.106**	.178**	-.053	.083**	.015
ID	.081	.089*	.091*	.241**	.053	-.212**	-.210**	.001	.404**	-.282**	-.144**	.263**		.333**	.090**	.306**	-.231**	.568**	-.219**	-.129**	-.503**	.406**	.036	.086**	.040	-.080*	-.039
CGI	-.133**	-.117**	.049	.083**	-.007	-.222**	.164**	.147**	-.113**	-.195**	-.019	.288**	.100**		-.118**	-.031	-.369**	.100**	-.055	-.388**	-.186**	.287**	-.032	.140**	-.024	.061	-.066*
SMC	.136**	.113**	.278**	.062*	.247**	.021	.080*	-.083**	.232**	-.096**	-.099**	.033	.112**	-.101**		.292**	.030	.113**	.611**	.038	.239**	.102**	.336**	.320**	-.076*	-.002	.029
CORR IDX	.053	.037	-.042	.127**	.120**	-.001	-.100**	-.065*	.199**	-.284**	.049	.057	.350**	-.024	.248**		.141**	.614**	-.241**	.019	-.412**	.296**	.319**	.014	.016	-.169**	.025
INFL	-.027	-.054	-.064	.045	.099**	.141**	-.118**	.000	.053	-.022	-.055	-.089**	-.105**	-.185**	.058	.184**		-.057	.003	.237**	.104**	-.132**	.063*	.014	.033	-.023	.115**
GDPC	.114**	.111**	.060	.229**	.156**	-.094**	-.179**	.019	.228**	-.248**	-.026	.088**	.610**	-.009	.154**	.668**	-.041		-.486**	.213**	-.581**	.323**	.112**	-.046	.013	-.216**	.001
POP	.001	.010	.174**	-.130**	-.044	-.012	.301**	-.103**	-.050	.166**	.055	-.063*	-.229**	-.028	.536**	-.305**	-.079*	-.495**		-.110**	.514**	-.092**	.182**	.270**	-.031	.154**	.014
MASCU	.188**	.136**	.130**	-.115**	.273**	.166**	-.056	-.181**	.009	.190**	-.128**	-.330**	-.132**	-.193**	-.014	-.014	.078*	-.014	-.089**		-.349**	-.081*	.087**	.018	-.030	-.039	.087**
POWER D	-.046	-.015	.077	-.187**	-.005	.122**	.094**	.068*	-.128**	.138**	.052	-.064*	-.437**	-.172**	.178**	-.524**	.002	-.512**	.501**	-.354**		-.370**	-.020	.211**	-.063*	.079*	.029
CGC NO	.046	.074	.136**	-.002	.061	-.166**	.230**	.040	.064*	-.201**	.000	.263**	.392**	.218**	.086**	.311**	-.058	.333**	-.097**	-.139**	-.350**		.156**	.224**	-.044	.045	-.037
AC	-.039	-.037	.105**	-.027	.145**	.041	.289**	-.038	.096**	-.146**	-.010	.105**	.065	-.013	.393**	.211**	.014	.107**	.182**	-.008	-.026	.156**		.320**	-.102**	.116**	-.036
FS	-.038	.064	.630**	-.200**	.371**	.080*	.442**	.035	.061	-.253**	-.032	.173**	.069*	.180**	.269**	-.060	-.015	-.068*	.239**	-.024	.194**	.227**	.303**		-.110**	.214**	.052
SG	.019	.026	-.065	.214**	-.032	-.113**	-.086**	-.072*	-.015	.079*	.033	-.066*	.063	.006	-.155**	.039	.138**	.055	-.107**	-.020	-.088**	-.043	-.101**	-.116**		-.090**	-.011
LVG	-.082*	-.096*	.065	-.410**	-.299**	.080*	.266**	.092**	-.081*	.069*	.000	.057	-.115**	.054	-.043	-.198**	-.036	-.227**	.160**	.028	.063*	.022	.108**	.196**	-.101**		.023
CGY	.094*	.076	.090*	.345**	.274**	-.022	.006	-.052	.036	-.066*	-.061	.045	.116**	.049	.104**	.106**	.015	.165**	-.014	.058	-.099**	.037	.115**	.038	.114**	-.133**	

*Notes:* the bottom left half of the table presents Pearson's parametric correlation coefficients, whilst the upper right half of the table presents Spearman's non-parametric correlation coefficients. \*\* and \* denote correlation is significant at the 1% and 5% level, respectively. Variables are defined as follows: R&D divided by assets (RD Assets), R&D divided by sales (RD Sales), R&D Expenditures (RD Expo), Return on Assets (ROA), Credit Rating (RA S&P), Cost of Capital (AVG ICC), Board Size (BS), Frequencies of Board Meeting (FBM), Block Ownership (BO), Director Ownership (DO), Institutional Ownership (IO) Board Diversity (BD) Independent Directors (ID), Corporate Governance Index (CGI), Stock Market Capitalisation (SMC), Corruption Index (CORR IDX), Inflation ( INFL), GDP per Capita (GDPC), Population (POP), Masculinity (MASCU), Power Distance (POWER D), Corporate Governance Committee No. (CGC NO), Audit Committee No. (AC), Firm Size (FS), Sales Growth (SG), Leverage (LVG), Capital Gain Yield (CGY)

The findings show that there is a significant negative correlation between board size and institutional ownership, at (-.065) and (-.063). A similar correlation exists between stock market capitalisation and CGI, at (-.101) and (-.118); between population and GDP per capita, at (.495) and (-.486); between masculinity and population, at (-.089) and (-.110); between power distance and masculinity, at (-.354) and (-.349); and between corporate governance committee number and power distance, at (-.350) and (-.370).

Table 16 shows the matrix of financial performance and other corporate governance variables and the level of correlation between them. It shows where there is a positive relation between the variables, which are significant and which are negative.

For example, masculinity and power distance are negatively correlated, indicating that these two characteristics are not normally found to complement each other in the same environment. While masculinity is based on characteristics such as assertiveness, achievement, heroism and material rewards, power distance is based on the idea that there is an unequal distribution of power. Corporate governance committee Number is also negatively correlated with power distance, indicating that corporate governance is about promoting equality while power distance is about recognising inequality. The negative relationship between population and GDP per capita is based on the idea that an increase in population leads to a decline in GDP per capita. Similarly, by looking at the Pearson's and Spearman's correlation matrix, one can establish where there is strong correlation, and whether it is positive or negative.

## **6.7 Multivariate regression analyses, results and discussion**

This section reports on the multivariate analyses of how independent and control variables impact firm performance as seen in risk-taking, credit rating and cost of capital.

### **6.7.1 Multivariate analysis and discussion: ownership structure and board structure and risk-taking measured by R&D/Assets**

In Table 17, OLS Regression Results of Ownership Structure and Board Structure on Risk-taking based on the R&D/Assets (dependent variable), the F-Value is (.585\*\*\*), indicating that the model is positive and significant at 1%, although the number is small. The Adjusted R<sup>2</sup> at 19.4% shows how the independent variables, ownership structure and board structure, and the control variables will interpret the dependent variable, by R<sup>2</sup>%. This suggests that any change in the independent and control variables will lead to a change in the dependent variable by R<sup>2</sup>.

The findings reveal that control variables that were significant were frequency of board meetings, firm size, audit committee number and corporate governance committee number. The significant country variables were corruption index, masculinity and Anglo-American.

#### **6.7.1.1 Multivariate analysis and discussion: block ownership and risk-taking measured by R&D/Assets**

The significant independent variables were block ownership and independent directors. These findings reveal a strong negative relationship between block ownership and risk-taking as measured by R&D/Assets. The findings for block ownership for all firm years was (-2982\*\*\*), significant at 1%. The relation between block ownership and risk-taking for each individual year was also negative.

For 2010 through 2014, this relation was (-1.093), (-.688), (-1.639), (-1.481) and (-1.509), respectively. The year in which this relation was most marked is 2012. Overall, for the period, the relation between block ownership and risk-taking is strongly significant and negative. Changes took place over years, showing that in 2010, the negative significant relation was about 5%, and that declined in number, but also in degree of significance. For



2010, 2013 and 2014, the relation was negative, but not significant. This finding predicts that if block ownership increases, risk will decrease.

The literature used to draw up the hypothesis showed that block owners allowed outsiders to have some control over a firm, as they would have control over management, a circumstance that would come about as they could use their size and power to gain benefits to which smaller shareholders did not have access (Barclay and Holderness, 1989). It was also pointed out that block owners were able to purchase shares at premium prices, unlike other shareholders. This condition led to firms using caution and repurchasing any shares that were priced higher than the market price when some disaffected block owners may try to put these on the market (Kosnik, 1990). According to Kosnik (1990), dealing with block owners is a risk, and some firms that see a take-over threat coming would try to prevent this and prevent proxy fights from taking place between block owners. In this respect, it was thought that the relation between block owners and risk-taking would be positive, although not significant. In fact, according to Mehran (1995), Shleifer and Vishny, 1997) and Holderness (2003), a threat that some contend exist for block ownership and risk-taking is the fact that block owners could be other firms buying shares in another firm. While the purchase could simply be to hold shares in a particular company, in other cases it could be a strategy that some firms use to take over others. On this basis, it was argued that block holders have a positive relation with risk-taking (Shleifer and Vishny, 1997).

Some researchers believe that block owners could have a beneficial effect on firms, so that in their minds, block owners would have a negative relation with risk-taking, which is the findings from this study. According to Jensen (1993), the beneficial effect could be more monitoring of management, as block owners would be interested in keeping abreast of how the firm was operating. Such monitoring would contribute to the long-term performance of the firm, this would be in keeping with agency theory.

**Table 17: OLS Regression Results of Ownership Structure & Board Structure on Risk-Taking Based on the R&D/Assets (Dependent Variable):**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.194	.130	.124	.114	.199	.236
Standard Error		.721	.684	.741	.778	.755	.719
Durbin- Watson		.558	2.146	1.956	2.075	2.210	1.845
F-Value		.585(.000)***	1.682(.053)*	1.660(.057)*	1.637(.060)*	2.256(.005)***	2.399(.003)***
No. of Observations		504	97	99	105	107	96
Constant		-	-2.415(.018)**	-1.832(.071)*	-1.135(.260)	.151(.880)	-1.711(.091)*
<b>Independent Variables</b>							
Block Ownership	+/-	-	-1.093(.278)	-.688(.493)	-1.639(.105)	-1.481(.142)	-1.509(.135)
		2.982(.003)***					
Institutional Ownership	-	-.702(.483)	-1.068(.289)	-.394(.695)	1.962(.053)*	.381(.704)	-1.651(.103)
Director Ownership	+	.300(.764)	.180(.858)	-.463(.645)	.342(.733)	-.499(.619)	-.436(.664)
Independent Directors	+/-	3.698(.000)***	-.299(.766)	.136(.892)	2.551(.013)**	1.245(.216)	2.077(.041)**
Board Size	+/-	-1.564(.118)	-1.811(.074)*	-1.745(.085)*	-.324(.747)	-1.104(.273)	-1.631(.107)
Board Diversity	+/-	1.468(.143)	1.130(.262)	1.312(.193)	1.492(.139)	1.785(.078)*	-.314(.754)
Frequency of Board Meetings	-	-	-.375(.709)	-	-1.714(.090)*	-1.735(.086)*	-2.667(.009)***
		4.293(.000)***		2.771(.007)***			
<b>Control Variables</b>							
Firm Size		-2.100(.036)**	-1.189(.238)	-.944(.348)	-.690(.492)	-.317(.752)	-.669(.506)
Sales Growth		.376(.707)	-.159(.874)	-.122(.903)	.533(.596)	-.877(.383)	.564(.575)
Audit Committee No.		-1.838(.067)*	-.018(.986)	-1.338(.185)	-1.175(.243)	-2.296(.024)**	-.054(.957)
Corporate Governance Committee No.		5.045(.000)***	2.247(.028)**	1.858(.067)*	1.960(.053)*	2.796(.006)***	3.015(.004)***
Leverage		.577(.564)	.300(.765)	1.527(.131)	-.058(.954)	-.372(.711)	.393(.695)
Capital Gain Yield		.451(.652)	.354(.725)	2.281(.025)**	.253(.801)	.309(.758)	-.584(.561)
Stock Market Capitalisation		-.865(.387)	.515(.608)	-.150(.881)	-.039(.969)	1.688(.095)*	-2.002(.049)**
Corruption Index		2.397(.017)**	-1.310(.194)	.290(.773)	1.265(.208)	-.254(.800)	2.999(.004)***
Inflation		-.797(.426)	1.878(.064)*	-1.094(.277)	-.880(.381)	-	-.210(.834)
						3.219(.002)***	
GDP Per Capita		.757(.449)	2.977(.004)***	.329(.743)	-1.236(.220)	-.271(.787)	.320(.750)
Population		1.551(.122)	2.014(.048)**	.505(.615)	-.602(.549)	-.355(.723)	2.467(.016)**
Masculinity		3.494(.001)***	-1.426(.158)	.992(.324)	1.397(.166)	-.317(.752)	2.009(.048)**
Power Distance		1.219(.224)	-1.345(.183)	.634(.528)	1.228(.223)	-1.157(.250)	1.669(.099)*
Anglo American		-	-2.247(.030)**	-.254(.800)	.186(.853)	-1.715(.090)*	-1.270(.208)
		2.686(.007)***					
2010		1.221(.223)	-	-	-	-	-
2011		.568(.570)	-	-	-	-	-
2012		.418(.676)	-	-	-	-	-
2014		-.517(.605)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

Agency theory can be used to explain the findings in this study. This theory suggests that with increasing block ownership, risk would decrease. According to Lai and Chen (2014), more governance would lead to less risk-taking through more monitoring. According to our findings, as well as to Jensen (1993), the more monitoring that management has, the better for shareholders. If block owners are seen as bringing about more monitoring, they would be helping to protect the wellbeing of shareholders. Therefore, agency theory could

be used to show the relation between block owners and risk-taking as shown in the findings of this study.

For independent directors, the finding is (3.698\*\*\*). Unlike the finding for block ownership, which is significant at 1% and negative, the finding for independent directors is significant at 1% but positive. The findings reveal that an increase in independent directors contributes to increased risk-taking. The literature reveals that independent directors provide the best security for organisations, which gives rise to better corporate performance, and stewardship theory holds the opposite, namely, that if inside directors dominate, performance will improve (Letting et al., 2012, p. 783). The literature therefore provides ambiguous results, as it depends on which theory is used to explain the role of directors. This study reveals that independent directors lead to increased risk-taking. The rationale used to support stewardship theory is that inside-dominated boards have greater knowledge about the operations of the company, and with this knowledge and expertise would set out to protect the interests of the firm (Letting et al., 2012).

Frequency of board meetings has a negative relationship with risk-taking, significant at 1%, at (-4.293\*\*\*), suggesting that the more board meetings are held, the lower the risk-taking. This relationship is based on the idea that frequent board meetings mean greater monitoring of management. According to agency theory, board members protect shareholders' interests through their surveillance of management (Vafeas 1999; Mangena and Taurigana, 2006). Firm size is also significant, but at 5% and negative. Firm size mattered, as firms of different sizes had different corporate governance structures. Differences in firm size affected risk-taking. In terms of audit committees, there was also a negative relationship, significant at 10%. This meant that an increase in audit committee led to a reduction in risk-taking. Significance to corporate governance committee number was (5.045\*\*\*) significant at 1%. This suggests that when corporate governance increases, so does the likelihood of investment in R&D (Black et al., 2010). Audit committees would lead to an increase in the creditworthiness of the company, as these committees carry out

more surveillance of firms, leading to better protection of shareholders' interests (Gamble and Kelly, 2001; Lai & Chen, 2014).

With the country variables, corruption index, masculinity and Anglo-American have relations with risk-taking that are significant at 1%. While corruption index and masculinity have a positive relationship, Anglo-American has a negative one. The findings are (2.397\*\*) for corruption index, (3.494\*\*\*) for masculinity and (-2.686\*\*\*) for Anglo-American. An increase in corruption index and masculinity led to increase in risk-taking. The negative significance for Anglo-American means that firms from Continental countries perform better in terms of risk-taking than firms from Anglo countries. This may reflect the fact that this system is greatly influenced by company law and taxation, and that the accounting system used prioritises creditors and tax authorities, as observed in Germany (Radebaugh et al., 2006). On the other hand, the Anglo-American system gives preferential treatment to large corporations and investors (Radebaugh et al., 2006). However, there is research that supports the position that increase in corporate governance in Anglo-American accounting tradition leads to a decline in risk and ultimately in credit risk. According to research, since the Anglo-American tradition has rigid corporate governance mechanisms established by country practices, heavy emphasis is placed on compliance and disclosure, leading to reduced risk-taking (Jenkinson and Mayer, 2012). This finding was significant and negatively related to risk-taking as measured by R&D/Assets, as expected, showing that there is a relation and that the null hypothesis is rejected.

#### 6.7.1.2 Multivariate analysis and discussion: institutional ownership and risk-taking measured by R&D/Assets

Hypothesis H3a states that "There is no statistical relationship between institutional ownership and risk-taking." Our findings reveal that there is no significant relation between institutional ownership and risk-taking, as measured by R&D/Assets. Based on the statistics provided, the null hypothesis is accepted. In fact, the relation for all firm years is

(-.702) and negative. For the years 2010 to 2014, the relation is (-1.068), (-.394) and (1.962), which is significant at 10%, (.381) and (1.651), respectively. It is apparent that, while there is one significant relation, there are also positive relations, significantly in 2012 and insignificantly in 2013. The findings show that there is no relation.

A look at the literature on institutional ownership and risk-taking measured by R&D/Assets shows that since these institutions are primarily insurance companies, pension funds and banks, the focus is protecting their client portfolios with firms that have good investments (Del Guercio, 1996). These institutional owners focus on reducing risk and reaping good dividends (Hutchinson, Seamer and Chapple, 2015). These owners are usually very active in monitoring the firms in which they invest (Hutchinson, Seamer and Chapple, 2015). The result is a negative relation between institutional investors and risk-taking (Grinstein and Michaely, 2005). These findings are supported by agency theory, as institutional owners promote the well-being of shareholders (Lai and Chen, 2014). Stewardship theory is also relevant, as it is based on the dominance of insiders and management's role to promote good corporate performance; since these firms manage their clients' portfolios, they are seen as good stewards (Letting et al., 2012). Institutional owners are seen as heavily influencing management and ensuring that management does what is good for the well-being of shareholders (Hutchinson, Seamer and Chapple, 2015).

#### 6.7.1.3 Multivariate analysis and discussion: director ownership and risk-taking measured by R&D/Assets

Hypothesis H4a looks at director ownership and risk-taking, stating: "There is no statistically significant relationship between director ownership and risk-taking". According to our findings, there is no relation and so the null hypothesis is accepted.

For the years 2010 to 2014, the relation is (.180), (-.463), (.342), (-.499) and (-.436), respectively. There is no significant relationship between director ownership and risk-taking measured by R&D/Assets.

According to La Porta et al. (1999), many countries have different ownership structures than those in North America. For example, in Hong Kong, founders of firms are also their directors. This gives rise to the free rider problem, and there is not as much monitoring as there would be in companies where the roles of managers and directors are separate. These firms are seen as more likely to take risks (Chen & Jaggi, 2000). These kinds of companies can be easily subject to take-over, which makes them closely correlated with risk-taking (Shleifer and Vishny, 1996). According to previous research, what could result when there are director owners is that management entrenchment occurs, thereby allowing these director owners to manage the company in a way that promotes their self-interest (McConnell and Servaes, 1990; Short and Keasey, 1999). In situations like this, director owners do not maximise the wealth of shareholders, but look to obtain high salaries, bonuses and compensation (Morck et al., 1988; McConnell and Servaes, 1990).

A theory that can be used to explain the findings for the relation between director ownership and risk-taking is agency theory; director owners pursuing their interests to the disadvantage of other shareholders clearly describes the agency relationship. However, another possibly suitable theory is stewardship theory; if there is not too much director ownership, this could lead to owners who are interested in the well-being of the firm and see managers as good stewards (Letting et al., 2012)

#### 6.7.1.4 Multivariate analysis and discussion: independent directors and risk-taking measured by R&D/Assets

Independent directors are board directors that are responsible for monitoring managers. Since these directors are from outside the firm, they are not indebted to management in any respect, and so monitor the executives. Independent directors were seen as having no close relationships with shareholders. In other words, independent directors do not have relationships either with management or with shareholders (Aguilera, 2004). These directors are seen as the core of good governance. Independent directors are therefore in a

position to ensure that management does not engage in behaviour that puts the interests of shareholders at risk. But it was also shown that too many independent directors could have a negative impact on the firm and could therefore be seen as repressing strategic plans, and could also lead to too much monitoring of management (Haniffa and Hudaib, 2006). However, Ntim et al. (2012) argue that corporate boards and directors could influence firm value. In other words, independent directors could have a negative as well as a positive impact on a company. Based on these findings, this study tested Hypothesis H6a, namely, that “There is no statistically significant relationship between independent directors and risk-taking”.

A look at the findings of this study reveal a strong significant positive relationship at less than 1% between independent directors and risk-taking. While the average for all firm years was (3.698\*\*\*), significant at 1%, for the following years there was a (-.299) for 2010, (.136) for 2011, (2.551\*\*) at the 5% level in 2012, (1.245) in 2013, and (2.077\*\*) at the 5% level. These findings are supported by literature which shows independent directors could be helpful in giving value to the company, but it could also hurt the company through over monitoring and through repressing strategy plans (Haniffa and Hudaib, 2006).

Agency theory and resource dependence theory could apply in this case. While the conflict between the interests of independent directors and shareholders support agency theory (Lai and Chen, 2014), resource dependence theory can be applied to independent directors who turn out to be extra resources that firms can depend on (Chen and Roberts, 2010). This study supports the literature and shows that there are significant relationships.

#### 6.7.1.5 Multivariate analysis and discussion: board size and risk-taking measured by R&D/Assets

The hypothesis drawn up for board size was H5a, which states: “There is no statistically significant relationship between board size and risk-taking”. Our findings reveal that there is no significant relation for all firm years. The null hypothesis is accepted.

But for 2010 and 2011, there was a significant negative relationship, with value of (-1.811) and (-1.745), respectively. The negative relationship is seen for the next three years at (-.324), (-1.104), and (-1.631). Board size is critical not only for monitoring management but also for ensuring that the other activities of the firm are strategically carried out (Davidson et al., 1998; Klein, 1998). Board size is said to be important, with Lipton and Lorsch showing (9) members as optimal for the effective functioning of this body, but with some arguing that boards should be larger (Yawson, 2006; John and Senbet, 1998).

However, according to the overall average for all firm years, there was no significant relationship. A too-small board becomes a risk if it is unable to carry out monitoring and attend to other company business. The result could be loss of assets or the poor performance of the company. If the board is too large, as some have pointed out, this could lead to poor performance.

The theories that can be used to discuss the relationship between board size and risk-taking are agency theory, to explain protecting the rights of shareholders, and resource dependence theory, as board members are seen as an important resource that adds value to the company and allows it to access expertise and other resources.

#### 6.7.1.6 Multivariate analysis and discussion: board diversity and risk-taking measured by R&D/Assets

Board diversity is said to be an important value to a firm. Hypothesis H7a states, “There is no statistically significant relationship between board diversity and risk-taking”. It was thought that having a diverse board allows for greater exchange of ideas and different viewpoints and contributes to a better organisation with better corporate performance. Women were seen as the group that was often left out of boards; many European countries have decided to take action to rectify this.



Several countries in Europe have mandated that boards should be diverse, with special emphasis on putting women on boards. It was stipulated that, in U.K. companies, at least 25% of directors had to be female by (Sealy and Vinnicombe, 2012). In Norway, the stipulation was that at least 40% of board members should be women by 2008, (Hoel, 2008), while Spain and France stipulated that at least 40% of directors should be women by 2015 and 2017, respectively (de Cabo et al., 2012). Diverse boards are seen as added resources that increase firm value (Rose, 2007). However, some studies show that it is preferable to have a board that does not stress diversity, because there would be fewer viewpoints, thus preventing unanimity on certain issues (Rose, 2007).

Our findings show no relationship between board diversity and risk-taking measured by R&D/Assets. This finding is in keeping with research that shows board diversity is not important for the wellbeing of an organisation. The theory that is applicable to studying this relation is resource dependence theory.

#### 6.7.1.7 Multivariate analysis and discussion: frequency of board meetings and risk-taking measured by R&D/Assets

Hypothesis H8a states: “There is no statistically significant relationship between the frequency of board meetings and risk-taking.” Our findings show a strong (at 1%) negative relationship between frequency of board meetings and risk-taking measured by R&D/Assets. Basically, this means that if a firm does not hold frequent board meetings, it is more likely to perform poorly.

The overall average for all firm years is (-4.293\*\*\*) for frequency of board meetings. This finding shows that there is a negative relationship between frequency of board meetings and risk-taking, significant to 1%. This suggests that when meetings are more frequent, risk-taking will decrease. However, for 2010 to 2014, our findings are inconsistent. In 2010, the findings show (-.375), in 2011 (-2.771\*\*\*), in 2012 (-1.714\*), in 2013 (-1.735\*),

and in 2014 (-.2.667\*\*\*); these are all negative, though the amounts differ. There is no relationship; therefore, the null hypothesis is rejected.

This finding supports studies including Karamanou and Vafeas (2005), who show that among 275 U.S. listed companies, frequent board meetings had a positive effect. However, another view is that more frequent boards meetings result in higher costs for boards and firms, eventually leading to poor performance. The theories that can be used to discuss this relation between frequency of board meetings and risk-taking is agency theory, which shows the importance of looking after the interests of shareholders and promoting firm performance; resource dependence theory, since the board serves as a resource, improving firm value; and institutional theory, which is based on the idea that managers and directors will take measures that would help them to influence others. More frequent meetings may help give the impression that the firm has a board that is actively working; however, there is no relation and the null hypothesis is rejected.

#### **6.7.2 Multivariate analysis and discussion: ownership structure and board structure and control variables and risk-taking (measured by R&D/Sales)**

In Table 18, OLS Regression Results of Ownership Structure and Board Structure on Risk-taking measured by R&D/Sales (dependent variable), the F-Value is (4.902\*\*\*), indicating that the model is positive and significant at 1%. This model is a fit in predicting the sought-after relationships. The Adjusted R<sup>2</sup> at 16.2% shows how the independent variable, the ownership structure, board structure and the control variables, will interpret the dependent variable, by R<sup>2</sup>%. This suggests that any change in the independent and control variables will lead to a change in the dependent variable by R<sup>2</sup>.

In Table 18, the significant findings are in block ownership, at (-3.411\*\*\*), significant to 1% and negative; independent directors, at (2.764\*\*\*), significant at 1% and positive; board

size at (-2.481\*\*) and significant to 5%; and frequency of board meetings, at (-3.399\*\*\*), significant at 1% and negative.

#### 6.7.2.1 Multivariate analysis and discussion: block ownership structure and risk-taking (measured by R&D/Sales)

This section discusses block ownership structure and risk-taking as measured by R&D/Sales. The hypothesis that was developed to show the relation between block ownership and risk-taking (measured by R&D/Sales) is Hypothesis H2a, which states that “There is no statistically significant relationship between block ownership and risk-taking.” The findings from Table 18 reveal a significant negative relationship as evidenced in the correlation for all firm years at (-3.411\*\*\*), at a significance of less than 1%. For the years of the study, there was a negative correlation, but there was only significance at about 10 % for 2012, at (-1.840\*). The trend shows that while 2011 had a lower negative relation, at (-.902), that the other three years had a rising, then a declining and then a rising correlation at (1.617). These findings are partially supported by the literature. According to Holderness (2003), block owners are seen as posing a threat to firm performance, since block owners could have special benefits unavailable to other shareholders, as they could have special control over management, and as they can use their position for firm takeover (Barclay and Holderness, 1989). These block owners could also be directors of the firm (Holderness, 2003). Block owners are also seen having the potential to be beneficial to firms, since they could require more monitoring of the firm as they seek more information about their investments (Jensen, 1993). It is also the case that the national legal systems influence the kinds of ownership rights that firms within a country could hold (Mallin et al., 2010). Agency theory can be used to discuss the relationship between block ownership and risk-taking as measured by R&D/Sales.

#### 6.7.2.2 Multivariate analysis and discussion: institutional ownership and risk-taking (measured by R&D/Sales)

Hypothesis H3a shows the predicted outcome that was drawn up for the relationship between institutional ownership and risk-taking. H3a reads: “There is no statistical relationship between institutional ownership and risk-taking”. Representing CGI, institutional ownership is supposed to show how it affects performance measured in R&D/Sales. The findings in Table 18 show a negative relationship between institutional ownership and risk-taking. There is no statistically relationship. This can be the result of institutional investors such as banks and other fiduciary institutions making decisions to protect their clients’ portfolios. It is possible that they change the firms in which they invest. As Del Guercio (1989) suggests, these institutional owners make decisions based on what they perceive as good investments. Hutchinson, Seamer and Chappie (2015) show how institutional investors could influence management, as management considers that such investors require relevant information about risks. The negative relationship between institutional investors and risk-taking suggests that institutional investors do not tolerate risk.

The theories that can be used to explain this relation are agency theory and stewardship theory, based on institutional owners being aware of the importance of monitoring management, and their recognition that the best managed firms are under good stewardship of management (Lai and Chen, 2014).

#### 6.7.2.3 Multivariate analysis and discussion: director ownership and risk-taking (measured by R&D/Sales)

H4a reads: “There is no statistically significant relationship between direct ownership and risk-taking”. Our findings show no statistically significant relation, and so the hypothesis is accepted. The correlation for all firm years is (.494) and the figures for 2010 to 2014 are (.233), (.497), (.215), (.454) and (.268) respectively. There is a difference between Anglo

and Continental countries with respect to how directors could hold shares. In the Continental tradition, many owners are also directors, so that the agent and owner roles are joined. This has led to directors not adhering to corporate governance in terms of reporting; the implication is that these director owners run the companies without much oversight. Therefore, these companies are thought to be closely associated with risk-taking, because there is little adherence to corporate governance with respect to promoting the interests of other shareholders (Chen and Jaggi, 2000; McConnell and Servaes, 1999). Agency theory is used to discuss this relation.

#### 6.7.2.4 Multivariate analysis and discussion: independent directors and risk-taking (measured by R&D/Sales)

Independent directors are independent of management and shareholders (Aguilera, 2005). They can monitor management effectively and ensure that management is promoting sales and ensuring firm growth. The hypothesis that links independent directors and risk-taking is H7, which states that “There is no statistically significant relationship between independent directors and risk-taking”. This is because independent directors make sure that no action is taken by management or any group of block owners that could affect shareholders’ wellbeing. Not having enough independent directors means that there could be a preponderance of insider directors, many of whom could have their self-interest at heart. Not having an adequate number means that the board could fail to carry out its responsibility effectively. But having too many independent directors could be just as harmful, since they could hinder strategic plans and doing too much monitoring to be effective (Ntim et al., 2012). Independent directors could bring important value to the firm. Our findings reveal a strong relationship between independent directors and risk-taking, but for 2010 and 2011, the relationship is negative, while for 2012 to 2014 it is positive, with 2014 having a strong relation of at least 5 %. This finding shows that there have been inconsistent relations over the study period. This may be taken to reflect the different impacts that independent directors can have. According to Haniffa and Hudaib (2006),

independent directors can be seen as an important resource. The theories to be used in discussing this relation are agency theory and resource dependence theory.

#### 6.7.2.5 Multivariate analysis and discussion: board size and risk-taking (measured by R&D/Sales)

Board size has been identified as an important factor in board success and firm performance, but some have argued that either size does not matter, or that a too-large board could be detrimental. Hypothesis H5a states that “There is no statistically significant relationship between board size and risk-taking”. The findings show a negative relationship. The correlation figure for all firm years is large, negative and significant at 5%. The understanding is that there is an optimal board size, which is nine people (Lipton and Lorsch, 1992). A board that is the right size can monitor management and carry out its other pertinent duties (Davidson et al., 1998).

The findings show a negative relationship between board size and risk-taking, as shown in the overall relation for all firm years of (-.2481\*\*). While this relation is negative throughout the years, it is significant for all firm years and for 2010 and 2011 at (-2.021) and (-2.270), respectively. For the other three years, the negative relationships increases, but is not significant. A negative result shows that a strong board has a negative impact on risk-taking, by protecting shareholders’ interests and keeping management from pursuing their own interests. The theories used in explaining this finding are agency theory and resource dependence theory.

#### 6.7.2.6 Multivariate analysis and discussion: board diversity and risk-taking (measured by R&D/Sales)

Hypothesis H7a states: “There is no statistically significant relationship between board diversity and risk-taking”. We find that there is no significant relation in board diversity and risk-taking as measured in R&D/Sales. The correlation for all firm years is (1.271), but

the changes that have taken place show that diversity has increased over the years, but that in 2014, the relationship was negative, with a much small figure of (-869). The findings in Table 18 reveal that there are different perspectives on how board diversity is related to risk-taking. The theory that has been used to explain the findings is resource dependence theory. Board diversity can help provide different perspectives which can be viewed as adding value to a firm, and thus can be seen as resources available to the firm (Rose, 2007). But some believe that diversity contributes to lack of unity in decision making because of too many different ideas (Rose, 2007). It was shown that some firms in the Continental tradition require compulsory diversity involving women; this is not the case in firms in the Anglo tradition (Hoel, 2008; de Cabo et al., 2012). However, this finding supported the hypothesis that was tested.

#### 6.7.2.7 Multivariate analysis and discussion: frequency of board meetings and risk-taking (measured by R&D/Sales)

Hypothesis H8a states that “There is no statistically significant relationship between the frequency of board meetings and risk-taking”. According to the findings in Table 18, there is a strong negative statistically significant relationship between board meetings and risk-taking in the ‘all firm years’ column of (-3.399\*\*\*), with a significance of less than 1%. The results for 2010 to 2014 are inconsistent; in 2010, the correlation is (.044), in 2011 it is (-2.303\*\*), significant at 5%, and in 2012 it is (-1.383). The 2013 correlation is (-1.236) and the 2014 figure is (-2.270\*\*). The relation is only positive in 2010. Frequency of meetings was seen to be negatively related to risk-taking as measured by R&D/Sales. Previous studies show that frequent board meetings do not promote firm performance, but rather lead to increased costs of hosting these meetings (Karamanou and Vafeas, 2005). The theories used are resource dependence theory and institutional theory, based on the idea that board members are a valuable resource for the firm.

**Table 18: OLS Regression Results of Ownership Structure & Board Structure on Risk-Taking Based on R&D/Sales (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.162	.090	.064	.072	.160	.193
Standard Error		.724	.692	.757	.784	.767	.719
Durbin- Watson		.595	2.270	2.048	2.131	2.294	1.857
F-Value		4.902(.000)***	1.452(.122)	1.321(.189)	1.386(.149)	1.961(.016)**	2.080(.011)**
No. of Observations		504	97	99	105	107	96
Constant		-3.555(.000)***	-2.857(.006)***	-1.812(.074)*	-.824(.412)	-.119(.906)	-1.607(.112)
<b>Independent Variables</b>							
Block Ownership	+/-	-3.411(.001)***	-1.261(.211)	-.902(.370)	-1.840(.069)*	-1.524(.131)	-1.617(.110)
Institutional Ownership	-	-1.211(.227)	-1.476(.144)	-.769(.444)	1.547(.126)	-.062(.951)	-1.772(.080)*
Director Ownership	+	.494(.622)	.233(.816)	-.497(.621)	.215(.830)	-.454(.651)	-.268(.789)
Independent Directors	+/-	2.764(.006)***	-.654(.515)	-.460(.647)	1.836(.070)*	.893(.374)	2.226(.029)**
Board Size	+/-	-2.481(.013)**	-2.021(.047)**	-2.270(.026)**	-1.131(.261)	-1.366(.175)	-1.539(.128)
Board Diversity	+/-	1.271(.204)	.806(.423)	1.448(.152)	1.559(.123)	2.036(.045)**	-.869(.388)
Frequency of Board Meetings	-	-3.399(.001)***	.044(.965)	-2.303(.024)**	-1.383(.170)	-1.236(.220)	-2.270(.026)**
<b>Control Variables</b>							
Firm Size		.332(.740)	-.311(.757)	.207(.837)	.396(.693)	.621(.536)	.340(.734)
Sales Growth		.755(.451)	-.357(.722)	.280(.780)	.376(.708)	.132(.895)	1.077(.285)
Audit Committee No.		-2.082(.038)**	-.347(.730)	-1.260(.211)	-1.285(.203)	-2.322(.023)**	.504(.616)
Corporate Governance Committee No.		4.968(.000)***	2.397(.019)**	1.865(.066)*	1.976(.051)*	2.380(.020)**	2.705(.008)***
Leverage		-1.095(.274)	-.343(.733)	.709(.480)	-.582(.562)	-1.056(.294)	-.500(.618)
Capital Gain Yield		.295(.768)	.142(.887)	2.081(.041)**	.227(.821)	-.128(.899)	-.922(.359)
Stock Market Capitalisation		-1.496(.135)	-.312(.756)	-.333(.740)	-.221(.825)	1.403(.164)	-2.039(.045)**
Corruption Index		1.903(.058)*	-.797(.428)	-.315(.754)	.547(.586)	-.369(.713)	2.467(.016)**
Inflation		-.797(.426)	1.256(.213)	-.591(.557)	-.269(.789)	-2.839(.006)***	-.028(.977)
GDP Per Capita		1.292(.197)	2.977(.004)***	.923(.359)	-.363(.718)	.088(.930)	.391(.697)
Population		2.037(.042)**	2.467(.016)**	.961(.340)	.132(.895)	-.162(.872)	2.424(.018)**
Masculinity		2.632(.009)***	-1.091(.279)	.365(.716)	.646(.520)	-.373(.710)	1.768(.081)*
Power Distance		1.203(.230)	-.919(.361)	.151(.880)	.542(.590)	-1.037(.302)	1.580(.118)
Anglo American		-2.049(.041)**	-1.612(.111)	-.339(.735)	-.121(.904)	-1.703(.092)*	-1.156(.251)
2010		1.081(.280)	-	-	-	-	-
2011		.151(.880)	-	-	-	-	-
2012		.323(.747)	-	-	-	-	-
2014		-.571(.568)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

### 6.7.3 Multivariate analysis and discussion: ownership structure and board structure and risk-taking measured by R&D Expenditure

Table 19 shows the relation between corporate governance and risk-taking, as measured by R&D/Assets, and Table 18 presents the relation between corporate governance and risk-taking, as measured by R&D/Sales. Table 19 presents the relationship between corporate governance and risk-taking, measured by R&D expenditure. As analysed in detail for Tables 17 and 18, Table 19 also examines the relations of corporate governance that is



proxies through block ownership, institutional ownership, director ownership, and independent directors, and board structure, which has been closely linked with good corporate governance, through board size, board diversity and frequency of board meetings. These are the same variables used in the analysis of Tables 17 and 18.

The F-Value is (18.256\*\*\*), indicating that the model is positive and significant at 1%. This model is a fit in predicting the relationships. The adjusted  $R^2$  at 46.2% shows how the independent variables, ownership structure and board structure, and the control variables, will interpret the dependent variable, by  $R^2$ . This suggests that any change in the independent and control variables will lead to a change in the dependent variable by  $R^2$ .

The significant findings for firm level variables are for firm size, at (11.362\*\*\*), which is positive and significant at 1% audit committee number, at (-1.843\*), which is negative and significant at 10% and corporate governance committee number, at (5.045\*\*\*), which is positive and significant at 1%. The country-level findings that are significant are for corruption index, at (2.394\*\*), which is positive and significant at 5% masculinity, at (3.492\*\*\*), which is positive and significant at 1% and Anglo-American, at (-2.689\*\*\*), which is negative and significant at 1%. The findings reveal that frequent board meetings are negatively related to risk-taking. In other words, the more often meetings are held, the less risk-taking occurs and the better the organisation performs. This finding is supported by Mangena and Taurigana's (2006) work with Zimbabwean companies between 2001 and 2003, which shows that company performance improved with frequent board meetings. There was a positive relationship between firm size and risk-taking. Studies have shown, though, that firm size varies in importance depending on the countries involved (Black et al., 2010). Audit committees are also seen as important in reducing risk-taking, and are based on the idea that more monitoring leads to more oversight of management.

Corruption index was also significant, with the findings suggesting that corruption is related to an increase in risk-taking. Westphal and Zajac (2014) highlight that risk-taking

could occur when reports are made up and distributed to officials and accepted without question, and where professionals take each other's word. Masculinity has been shown to be an important factor that influences the general approach of assertiveness and dominance of male values. The findings also show that Anglo-American is a negative figure, suggesting that it is opposite to the Continental system which may be performing better than the Anglo-American system, primarily because of the difference in the accounting and legal systems.

#### 6.7.3.1 Multivariate analysis and discussion: block ownership and risk-taking measured by R&D Expenditure

In Table 19, there is a strong significant relation between block ownership and risk-taking as measured by R&D expenditure of (-2.983\*\*\*), which is significant at 1%. The literature review shows that there is a relationship between block ownership and risk-taking, because in some cases, block holders could be directors of a firm (Holderness, 2003). Depending on the country in which a firm is located, block holders have great influence over the firm's performance. The legal system of a country could determine whether block holders have great or little influence over the firm's performance. In countries whose legal system follows the common law tradition, there is greater protection for minority shareholders (Mallin et al., 2010). It would follow that in these countries block holders would not have as great an impact on risk-taking as in countries with fewer laws protecting minority shareholders (Mallin et al., 2010). For example, in Germany, with its civil law legal tradition, there is less protection for minority shareholders (Bebchuk, 1999). This finding is supported by previous studies, as pointed out above.

#### 6.7.3.2 Multivariate analysis and discussion: institutional ownership and risk-taking measured by R&D Expenditure

Our findings show that the relationship between institutional ownership and risk-taking is not significant. With a finding of (-.704), the study is based on the literature which shows

that institutional owners do not have tolerance for risk-taking (Del Guercio, 1996). The rationale for this is that institutional owners invest funds for others, and so part of their fiduciary responsibility is to make sure that these investments are safeguarded. Therefore, institutional owners often hold portfolios of reasonable or good stocks (Del Guercio), usually in firms that pay dividends on a regular basis (Grinstein and Michaely, 2005). Institutional owners often try to influence the management of firms by monitoring firm-specific risk and noting how management deals with this (Hutchinson et al., 2015). The literature therefore shows that institutional owners are very cautious about risk, and participate as little as possible in risky firms. Therefore, the null hypothesis is accepted.

#### 6.7.3.3 Multivariate analysis and discussion: director ownership and risk-taking measured by R&D Expenditure

Our findings show no significant relationship between director ownership and risk-taking, with the findings revealed as (.297). Although the relationship is positive, it is not significant, showing that it is possible that in some instances, an increase in director ownership could lead to an increase in risk-taking, but this is not a critical finding for this study. It is important to point out that there are different rules in different countries governing how directors can own stock (La Porta et al., 1999). In some companies, for example in Hong Kong, founding families are owners and directors, and they own the majority of the stocks (Ho and Wong, 2001; Chen and Jaggi, 2000). The literature shows different relationships, such as the free rider problem, surfacing when founding families serve as directors and CEOs and when there is virtually no monitoring of management. In Anglo-American countries, for example, this is not the case, and other countries have different arrangements (La Porta et al., 1999). Consequently, in this study, director ownership had no significant relation with risk-taking, for while some directors would be interested in investing in research and development, others would be more interested in activities that may boost their reputations, while still others may be interested in what they could get from the firm rather than what they could invest for the longer term.

#### 6.7.3.4 Multivariate analysis and discussion: independent directors and risk-taking measured by R&D Expenditure

For independent directors, there is a strong positive relation to less than 1% at (3.687\*\*\*). This finding is the opposite of what was expected, so the null hypothesis is rejected. The explanation for this relationship is that independent directors or independent board members are seen as providing good corporate governance (Spira, 1999) since they are not related or connected to management, and so they would tend to be objective monitors of management. It is also necessary to have independent directors that would lessen the impact of owners on risk-taking (Aguilera, 2005). On the other hand, according to the literature, too many independent directors could negatively impact firms and lead to too much monitoring of management, which could be counterproductive (Haniffa and Hudaib, 2006). But other research shows that corporate boards and directors could lead to increased firm value (Ntim et al., 2012). Therefore, the significance of this finding is that independent directors play an important role in firm performance, as they reduce risk-taking in firms. This is based on agency theory.

#### 6.7.3.5 Multivariate analysis and discussion: board size and risk-taking measured by R&D Expenditure

The finding of the relationship between board size and risk-taking is (-1.566), which reveals that the relationship is not significant. Previous studies show that risk-taking is influenced by the size of boards, which provide different levels of incentives and so have a different effects on risk-taking. For example, one study shows that smaller boards provide greater incentives to their CEOs to assume greater risks, the rationale being that greater risks bring about greater returns (Wang, 2012). On the other hand, larger boards are not motivated to take on greater risks in the hopes of larger returns, because they may already have huge returns and are motivated to have less risk and more stable returns (Wang, 2012). Nakano and Nguyen (2012) point to the disparities between board size and returns by

pointing out that while both the United States and Japan have smaller firms taking on more risk, this is not marked in the case of Japan. At the same time, it was noted that larger boards had lower levels of risk, evidenced by fewer bankruptcies (Nakano and Nguyen, 2012). The null hypothesis is accepted.

#### 6.7.3.6 Multivariate analysis and discussion: board diversity and risk-taking measured by R&D Expenditure

The finding on the relationship between board diversity and risk-taking is (1.466). This is not significant and so the null hypothesis is accepted. This finding does not agree with some of the previous studies. For example, some studies note that board diversity is important in promoting the wellbeing of firms, because diverse board members bring many skills, talents and knowledge to the board, and their different ethnicities, genders, educational and professional backgrounds, religion, and other diversities all enrich the decision making on the board (Van der Walt and Ingley, 2002).

Goodstein et al. (1994) and Carter et al., (2003) report that diversity supports both agency and resource dependence theories. The rationale is that with more diversity, more effective monitoring of management can take place, increasing the independence of the board to promote and safeguard the interests of shareholders (Van der Walt and Ingley, 2002). Others see board diversity as enhancing the decision making process (Baranchuk and Dybvig, 2009). On the other hand, others contend that diversity could be a drawback, with too much diversity leading to difficulty reaching consensus on issues and contributing to a less effective board (Rose, 2007). According to this argument, this could cost organisations and contribute to tokenism, with members of certain groups taken as board members only as a token gesture (Rose, 2007).

6.7.3.7 Multivariate analysis and discussion: frequency of board meetings and risk-taking measured by R&D Expenditure

**Table 19: OLS Regression Results of Ownership Structure & Board Structure on Risk-Taking Based on R&D Expenditure (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted $R^2$		.462	.442	.417	.402	.445	.500
Standard Error		.721	.684	.741	.778	.755	.719
Durbin- Watson		.558	2.154	1.956	2.075	2.210	1.845
F-Value		18.256(.000)***	4.617(.000)***	4.342(.000)***	4.331(.000)***	5.055(.000)***	5.521(.000)***
No. of Observations		504	97	99	105	107	96
Constant		-3.436(.001)***	-2.438(.017)**	-1.832(.071)*	-1.135(.260)	.151(.880)	-1.711(.091)*
<b>Independent Variables</b>							
Block Ownership	+/-	-2.983(.003)***	-1.093(.278)	-.688(.493)	-1.639(.105)	-1.481(.142)	-1.509(.135)
Institutional Ownership	-	-.704(.482)	-1.083(.282)	-.394(.695)	1.962(.053)*	.381(.704)	-1.651(.103)
Director Ownership	+	.297(.767)	.177(.860)	-.463(.645)	.342(.733)	-.499(.619)	-.436(.664)
Independent Directors	+/-	3.687(.000)***	-.320(.750)	.136(.892)	2.551(.013)**	1.245(.216)	2.077(.041)**
Board Size	+/-	-1.566(.118)	-1.820(.073)*	-1.745(.085)*	-.324(.747)	-1.104(.273)	-1.631(.107)
Board Diversity	+/-	1.466(.143)	1.137(.259)	1.312(.193)	1.492(.139)	1.785(.078)*	-.314(.754)
Frequency of Board Meetings	-	-4.288(.000)***	-.358(.722)	-2.771(.007)***	-1.714(.090)*	-1.735(.086)*	-2.667(.009)***
<b>Control Variables</b>							
Firm Size		11.362(.000)***	4.815(.000)***	4.755(.000)***	4.941(.000)***	5.409(.000)***	4.515(.000)***
Sales Growth		.378(.705)	-.164(.870)	-.122(.903)	.533(.596)	-.877(.383)	.564(.575)
Audit Committee No.		-1.843(.066)*	-.026(.980)	-1.338(.185)	-1.175(.243)	-2.296(.024)**	-.054(.957)
Corporate Governance Committee No.		5.045(.000)***	2.243(.028)**	1.858(.067)*	1.960(.053)*	2.796(.006)***	3.015(.004)***
Leverage		.580(.562)	.311(.757)	1.527(.131)	-.058(.954)	-.372(.711)	.393(.695)
Capital Gain Yield		.454(.650)	.346(.730)	2.281(.025)**	.253(.801)	.309(.758)	-.584(.561)
Stock Market Capitalisation		-.853(.394)	.509(.612)	-.150(.881)	-.039(.969)	1.688(.095)*	-2.002(.049)**
Corruption Index		2.394(.017)**	-1.296(.199)	.290(.773)	1.265(.209)	-.254(.800)	2.999(.004)***
Inflation		-.818(.414)	1.856(.067)*	-1.094(.277)	-.880(.381)	-3.219(.002)***	-.210(.834)
GDP Per Capita		.761(.447)	2.987(.004)***	.329(.743)	-1.236(.220)	-.271(.787)	.320(.750)
Population		1.549(.122)	2.027(.046)**	.505(.615)	-.602(.549)	-.355(.723)	2.467(.016)**
Masculinity		3.492(.001)***	-1.414(.161)	.992(.324)	1.397(.166)	-.317(.752)	2.009(.048)**
Power Distance		1.216(.224)	-1.339(.185)	.634(.528)	1.228(.223)	-1.157(.250)	1.669(.099)*
Anglo American		-2.689(.007)***	-2.209(.030)**	-.254(.800)	.186(.853)	-1.715(.090)*	-1.270(.208)
2010		1.219(.224)	-	-	-	-	-
2011		.576(.565)	-	-	-	-	-
2012		.425(.671)	-	-	-	-	-
2014		-.516(.606)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

Frequency of board meetings is significant at 1% at (-4.288\*\*\*), and negative. This statistic supports the position that the more often board meetings are held, the less risk there is. The literature shows that frequent meetings can lead to a reduction in risk (Karamanou and Vafeas, 2005). This may be because more frequent board meetings mean more monitoring of management, thereby reducing risk-taking (Vafeas, 1999). This is based on the idea that there is more strategising at board meetings, thereby promoting more creative solutions to problems (Vafeas, 1999). Frequent board meetings were also thought to be effective in promoting closer ties between members (Lipton and Lorsch, 1992). But Vafeas (1999) suggests that the argument can be made that more frequent board meetings do not help, because more costs are associated with holding these meetings.

#### **6.7.4 Multivariate analysis and discussion: ownership structure and board structure and risk-taking measured by ROA**

An examination of Table 20 reveals the relationship between corporate governance and the various firm-level and country variables as measured by ROA. In the table, OLS Regression Results of Ownership Structure and Board Structure on Risk-Taking based on ROA (dependent variable), the F-Value is (8.538\*\*\*), indicating that the model is positive and significant at 1%. This model is a fit in predicting the relationships. The Adjusted R<sup>2</sup> of 17.8% shows how the independent variable, the ownership structure, board structure, and the control variables, will interpret the dependent variable, by R<sup>2</sup>%. This suggests that any change in the independent and control variables will lead to a change in the dependent variable by R<sup>2</sup>.

The significant independent variable is institutional ownership, at (-3.3362\*\*\*), which is significant at 1% and negative. The significant firm level variable is firm size, at (-3.001), which is significant at 1% and negative, suggesting that firm size is negatively related to risk-taking when risk-taking is measured as ROA. Research shows that volatility in accounting performance measures such as ROA and ROE are measures that are negatively

related to risk-taking (Tran, 2014). Frequency of board meetings, at (-2.216\*\*), which is significant at 5%, is negatively related to ROA, and is based on agency theory, which shows that more board meetings can affect performance. Sales growth, at (2.381\*\*), is also positive and significant at 5%. Leverage is significant, at (-7.749\*\*\*), and negative at 1%. Country-level control variables are stock market capitalisation, at (3.205\*\*\*), significant at 1%; GDP per capita, at (-1.879\*), significant at 10%; and masculinity and power distance, at (-3.473\*\*\*) and (-3.282\*\*\*) respectively, significant at 1% and negative.

#### 6.7.4.1 Multivariate analysis and discussion: block ownership and risk-taking measured by ROA

Hypothesis H2a holds that “there is no statistically significant relationship between block ownership and risk-taking.” The literature shows that block owners can be seen to have both negative and positive impacts on firm performance; as Holderness (2003) points out, block owners can have a positive effect on risk-taking, because they can use their power to benefit more than others. They could also use their power for company take-over bids (Kosnik, 1990). On the other hand, block owners could be positive by providing more monitoring of management. The theories used to explain these findings are agency theory and stewardship theory. In this study, there is no relationship between block ownership and risk-taking. Therefore, the null hypothesis is accepted.

The findings suggest that as block holding increases, so does ROA. Firms with a large number of block holders were more likely to have low risk-taking. The rationale for this is that block holders, especially those over 5% of stocks, were able to monitor management effectively.



#### 6.7.4.2 Multivariate analysis and discussion: institutional ownership and risk-taking measured by ROA

Hypothesis H3a states that “there is no statistical relationship between institutional ownership and risk-taking”. Using ROA as the measure of firm performance, the findings reveal that there is no tolerance for risk-taking among institutional owners, with a strong positive relation of (3.3362\*\*\*), significant at 1% as in the other measures of risk-taking. The years 2010 to 2014 show a similar relation as in the other measures. The findings reveal that there is a relationship; therefore, the null hypothesis is rejected. Institutional owners tend to take steps to reduce risk and agency costs, thereby promoting their own interests (Westphal & Zajac, 2014).

#### 6.7.4.3 Multivariate analysis and discussion: director ownership and risk-taking measured by ROA

Hypothesis H4a holds that “there is no statistically significant relationship between director ownership and risk-taking”. The findings show that there is no significant relationship between director ownership and risk-taking based on ROA. The null hypothesis is accepted.

Previous studies reveal that director ownership could be problematic if there is director retrenchment; this could have an impact on firm value (Morck et al., 1988; McConnell and Servaes, 1990). Director ownership could constitute a risk to good corporate value (Morck et al., 1998). In some countries, for example Hong Kong, where there is much ownership by directors, director owners look after their own self-interest rather than shareholders’ (Chen and Jaggi, 2000). In this respect, director ownership does not promote firm value. The theories that can explain this relation are agency theory and stewardship theory. This

study finds no relation between directorship ownership and risk-taking as measured by ROA.

Our findings reveal no significant relation at (-.144). The findings from previous studies differ: one study shows a curvilinear relationship between director ownership and performance (Davies et al., 2005), while Owusu- Ansah's (1998) research in U.S. and U.K. companies shows no curvilinear relationship.

#### 6.7.4.4 Multivariate analysis and discussion: independent director and risk-taking measured by ROA

Hypothesis H6a states that "there is no statistically significant relationship between independent directors and risk-taking". From the findings, the all firm years' relation is (.248), showing that there is no significant relationship between independent directors and risk-taking as measured by ROA. The relation between independent directors and risk-taking shows that having independent directors prevents much risk when firm performance is measured by ROA, as independent directors monitor management to the point that risk is virtually eliminated. According to Davidson et al. (2005), independent directors reduce agency risk. Agency theory and resource dependence theory are used to explain this relation. Since this study does not show any significant relationship, the null hypothesis is accepted.

This finding means that independent directors do not have a significant impact on risk-taking. While in some firms independent directors may have some impact, in others they do not. Therefore, overall the finding shows no significance in terms of return on assets.

#### 6.7.4.5 Multivariate analysis and discussion: board size and risk-taking measured by ROA

In terms of board size and its relation to risk-taking, hypothesis used was H5a which holds that “there is no statistically significant relationship between the board and risk-taking”. The findings in Table 20 show no significant relation. Previous research confirms that board size can have a negative impact on firm value, and it is important to have a board of adequate size to monitor management and effectively carry out board functions (Klein, 1998). Lipton and Lorsch (1992) point out that a board with more than nine or ten members could be detrimental to efficiency (Yawson, 2006; John and Senbet, 1998). The theories used to discuss the relation between board size and risk-taking are agency theory and resource dependence theory, as boards monitor management and serve as extra resources. However, this study shows no significant relationship between board size and risk-taking; therefore, the null hypothesis is accepted.

While this study does not show any significant findings on board size, some believe that board size makes a difference. The argument for this is that on overly large boards, more time is spent on doing board business and not enough time on doing what boards are supposed to do, for example managing the management.

#### 6.7.4.6 Multivariate analysis and discussion: board diversity and risk-taking measured by ROA

The relation of Board diversity on risk-taking using the measure of ROA was studied using the hypothesis H7a states that “there is no statistically significant relationship between board diversity and risk-taking”. In Table 20 the findings show a negative relation between board diversity and risk-taking; however, these findings are not significant. Researchers have pointed out that board diversity is thought to bring many different skill sets and

attributes to a board (Van der Walt and Ingley, 2002), and to offer different perspectives that could help in decision making (Van der Walt and Ingley, 2002). Agency theory can be used to explain the importance of board diversity to a board, because it is believed that diversity also leads to better monitoring of management (Van der Walt and Ingley, 2002; Baranchuk and Dybvig, 2009). But some researchers prefer to forgo diversity on the grounds that it does not help, but rather hurts the running of the company (Baranchuk and Dybvig, 2009). In this study, there is no significant relationship between board diversity and risk. The null hypothesis was accepted.

Some have argued that board diversity is an important firm resource, as diversity allows firms to draw on the knowledge of board members from different groups. The theory that is applicable here is resource dependence theory (Goodstein et al., 1994). In this study, diversity did not seem to matter.

#### 6.7.4.7 Multivariate analysis and discussion: frequency of board meetings and risk-taking measured by ROA

Hypothesis H8a states that “there is no statistically significant relation between the frequency of board meetings and risk-taking”. The findings in Table 20 reveal a strong negative relation with ROA, significant at 5%, for frequency of board meetings. Frequency of board meetings, at (2.216\*\*). Studies have shown that frequent board meetings have positively affected companies’ forecasting on earnings (Karamanou and Vafeas, 2005), but some research has argued that frequent board meetings incur costs for the running the meetings, while not accomplishing much more than could have been accomplished with fewer meetings (Vafeas, 1999). Lipton and Lorsch (1992) explain that some have criticised frequent board meetings for taking time away from monitoring management. The theories used to explain these include agency theory and resource dependence theory. The findings on frequency of board meetings reveal a negative relationship with ROA and positive with risk-taking. Since there is a relation, the null hypothesis is rejected.

**Table 20: OLS Regression Results of Ownership Structure & Board Structure on Risk-Taking Based on ROA (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.178	.203	.159	.317	.190	.082
Standard Error		.060	.050	.060	.054	.065	.068
Durbin- Watson		1.021	2.032	2.363	2.059	2.249	2.090
F-Value		8.538(.000)***	3.080(.000)***	2.54(.001)***	4.881(.000)***	2.986(.000)***	1.730(.032)**
No. of Observations		872	172	172	177	179	172
Constant		4.353(.000)***	1.991(.048)**	1.764(.080)*	1.062(.290)	2.542(.012)**	1.504(.135)
<b>Independent Variables</b>							
Block Ownership	+/-	.009(.993)	-.410(.682)	.400(.690)	-.266(.791)	-.613(.541)	.321(.748)
Institutional Ownership	-	3.3362(.001)***	-1.447(.150)	-1.471(.143)	-1.860(.065)*	-.381(.704)	-1.319(.189)
Director Ownership	+	-.144(.886)	.037(.970)	.077(.939)	.355(.723)	-.248(.805)	-1.472(.143)
Independent Directors	+/-	.248(.804)	-.073(.942)	.055(.956)	-.217(.829)	1.078(.283)	-.119(.906)
Board Size	+/-	-.901(.368)	-.949(.344)	-.383(.702)	-.789(.431)	-.293(.770)	-.119(.905)
Board Diversity	+/-	-.563(.573)	.849(.397)	.118(.907)	-.867(.387)	-1.203(.231)	-.001(.999)
Frequency of Board Meetings	+/-	-2.216(.027)**	.280(.780)	-.879(.381)	-.307(.759)	-.678(.499)	-2.324(.021)**
<b>Control Variables</b>							
Firm Size		-3.001(.003)***	-1.988(.049)**	-.296(.768)	-1.818(.071)*	-2.766(.006)***	-.418(.677)
Sales Growth		2.381(.017)**	.553(.581)	-.799(.426)	2.415(.017)**	1.939(.054)*	1.907(.058)*
Audit Committee No.		.618(.537)	.348(.728)	-.229(.819)	-.368(.714)	.973(.332)	-.780(.437)
Corporate Governance Committee No.		-.729(.466)	-.190(.849)	-.676(.500)	.300(.765)	.761(.448)	-.656(.513)
Leverage		-7.749(.000)***	-3.630(.000)***	-4.138(.000)***	-4.062(.000)***	-2.051(.042)**	-3.131(.002)**
Capital Gain Yield		.398(.691)	.009(.993)	1.696(.092)*	4.392(.000)***	4.524(.000)***	1.889(.061)*
Stock Market Capitalisation		3.205(.001)***	2.965(.004)***	.770(.443)	1.360(.176)	2.241(.026)**	.736(.463)
Corruption Index		-.288(.773)	-1.863(.064)*	-.252(.801)	.338(.736)	-.214(.831)	-.163(.871)
Inflation		-.150(.881)	1.848(.067)*	.316(.752)	-.224(.823)	-.268(.789)	-.769(.443)
GDP Per Capita		-1.879(.061)*	.731(.466)	-.173(.863)	-.833(.406)	-1.963(.051)*	-1.193(.235)
Population		-.785(.433)	-.116(.907)	.576(.565)	-.660(.510)	-1.979(.050)**	-.200(.842)
Masculinity		-3.473(.001)***	-2.932(.004)***	-1.103(.272)	.019(.985)	-.499(.618)	-1.569(.119)
Power Distance		-3.282(.001)***	-2.847(.005)***	-1.262(.209)	-.271(.787)	-.671(.503)	-1.385(.168)
Anglo American		-.762(.446)	-1.922(.056)*	-.402(.688)	-.090(.928)	-.867(.387)	.180(.857)
2010		1.557(.120)	-	-	-	-	-
2011		1.726(.085)*	-	-	-	-	-
2012		1.549(.122)	-	-	-	-	-
2014		.475(.635)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

### 6.7.5 Multivariate analysis and discussion: ownership structure and board structure on credit rating

Table 21 presents the statistics used in analysing and discussing corporate governance and its relation to credit rating. Block ownership, institutional ownership, director ownership,

independent directors, board size, board diversity and frequency of board meetings are used to represent corporate governance.

In Table 21, OLS Regression Results of Ownership Structure and Board Structure on Risk-taking based on ROA (dependent variable), the F-Value is (17.810\*\*\*), indicating that the model is positive and significant at 1%. This model is a fit in predicting the relationships. The Adjusted R<sup>2</sup> at 38.2% shows how the independent variable, the ownership structure, board structure and the control variables, will interpret the dependent variable, by R<sup>2</sup>%. This suggests that any change in the independent and control variables will lead to a change in the dependent variable by R<sup>2</sup>.

The significant findings in Table 21 are institutional ownership, at (3.389\*\*\*), which is significant at 1% and positive; independent directors, at (1.517\*\*), which is significant at 5% and positive; board diversity, at (2.441\*\*), which is significant at 5%; and frequency of board meetings, at (1.872\*), which is significant at 10% and positive.

#### 6.7.5.1 Multivariate analysis and discussion: block ownership on credit rating

Hypothesis H2b addresses the relationship between block ownership and credit rating, stating: “There is no statistically significant relationship between block ownership and credit rating”.

It was shown that there was a negative value for the impact of block ownership on credit rating, except in 2014. This is evident in all firm years and throughout the individual years under consideration. There is no significant relation between block ownership and credit rating; therefore, the null hypothesis is accepted.

Previous studies show that block holders with more than 5% of shares are considered to have a negative impact on a firm's credit rating (Ashbaugh-Skaife et al., 2006). The reasoning behind this is that several block holders could get together and be considered

comparable to a vast group, thereby weakening shareholder rights overall (Ashbaugh-Skaife et al., 2006). Credit rating is essential to the operation of some companies. A low credit rating could lead to the company not having the opportunity to fulfil their commitments (Ashbaugh-Skaife et al., 2006). However, according to Ashbaugh-Skaife et al. (2006), it is possible for board members to hold small blocks of shares can also be seen as associated with good governance and good credit ratings, but block ownership by the CEO may be seen as having a negative impact on credit rating. The rationale for this is that while board members that have small number of shares in company, this may be seen as evidence of good governance, and stewardship theory could be used to explain this. However, it is possible to see action taken by CEO that could pursue their interests at the expense of other shareholders', as explained by agency theory. Block holders may also be able to gain more information. The theories that can be used to describe this relation are stewardship theory and agency theory.

#### 6.7.5.2 Multivariate analysis and discussion: institutional owners on credit rating

The hypothesis that looks at individual ownership and credit ratings is H3b, which states that "there is no statistically significant relationship between institutional ownership and credit rating". The findings in Table 21 reveal a strong significant relation. The significant relations for all firm years are those for institutional ownership, independent directors, board diversity and frequency of board meetings.

This suggests that institutional owners have a positive impact on credit rating for the period; the results show a significant relationship at (3.389\*\*\*), significant at 1%. This shows that there is a relation between institutional ownership and credit rating. Previous studies point out that firms with large institutional owners tend to have higher bond ratings, but lower bond yields (Bhojraj and Sengupta, 2003). It is also argued that institutional ownership could be associated with lower ratings and higher bond yields (Bhojraj and

Sengupta, 2003). These studies suggest that institutional owners tend to invest in firms with higher bond ratings and lower yields (Bhojraj and Sengupta, 2003). The theories that are relevant for explaining this relationship are agency theory and legitimacy theory. Agency theory can be used, although some believe that institutional owners may or may not contribute to more monitoring of management (Bhojraj and Sengupta, 2003). Legitimacy theory may apply, as it is thought that firms with many institutional owners may invest in companies with low bond yields (Elbannan, 2009). Maintaining a good credit rating shows good internal control and good governance. Too many institutional owners could lead to investors viewing a firm negatively.

Our findings confirm earlier work; we show that despite the investment choices of institutional owners, they have an impact on firm performance. Institutional owners are shown to invest in firms with higher bond ratings and lower bond ratings, consequently having both higher and lower bond yields. This also means that institutional owners influence bond ratings as well as bond yields. As a result, institutional owners not only influence, but themselves are influenced by, bond ratings and yields. Therefore, the findings support previous studies showing that institutional owners are significant (Bhojraj and Sengupta, 2003).

#### 6.7.5.3 Multivariate analysis and discussion: director owners on credit rating

Hypothesis H4b reads: “There is no statistically relationship between director ownership and credit rating”. The findings in Table 21 support this hypothesis, because these were shown as (-.491). This finding demonstrates that there is no significant relationship. The explanation for this is shown in earlier studies that point out that some directors owners also operate as owners (Ho and Wong, 2001). In these situations, the director owns the majority of the stocks; this is common in Japan. Firms that have directors as managers sometimes face the threat of takeover by directors, showing that agency theory figures heavily in considering the effect of director ownership on credit rating (Chen & Jaggi,



2000). This situation also contributes to conflicts between director owners and other stakeholders in the firms, as directors could often be looking after their own interests to the disadvantage of other stakeholders.

#### 6.7.5.4 Multivariate analysis and discussion: independent directors on credit rating

Independent directors are held in high regard because they are seen as providing excellent monitoring of management. Since they owe no allegiance either to management or shareholders, independent directors are thought to provide greater value to the company as well as engaging greater monitoring of management. Hypothesis H6b holds that “there is no statistically significant relationship between independent directors and credit rating”. The findings in Table 21 reveal a statistically significant relation at 5% at (1.517\*\*) as the relation for the independent directors and credit rating as seen in the all firm years. This suggests that an increase in independent directors also leads to increased credit rating. Previous studies suggest that independent directors promote corporate governance because of their monitoring of management (Davidson et al., 2005; Alali, 2012). Ashbaugh-Skaife et al. (2006) point out that credit rating companies tend to provide better ratings for firms with strong corporate governance. The relevant theories here are agency theory and resource dependence theory.

These findings are significant because it means that more independent directors would be recognised as better monitoring the actions of management, thereby reducing the conflict between management and shareholders. The more independent directors that a firm has, the more likely it is to maintain better corporate governance and receive higher credit ratings. This further means a lower cost of borrowing. At the same time, it was shown that managers do not like their firms to experience downgrades in their credit ratings, as this reflects poorly on managers, and negatively impacts their careers (Holmstrom, 1999).

Independent directors play a significant role in ensuring that managers recognise the importance of managing their firms responsibly in order to maintain high credit ratings.

#### 6.7.5.5 Multivariate analysis and discussion: board size on credit rating

Table 21 provides statistics for analysing and discussing the findings on the relationship between board size and credit rating. Hypothesis H5b was used to develop this relation. From the findings, there is no significant relation between board size and credit rating. The relation for all firm years is (1.125), revealing no significant relation between board size and credit rating. While some research reveals the importance of board size to the credit rating of firms, others find board size insignificant to credit ratings. On the one hand, Pham, Suchard and Zein (2012) point out that board size contributes to effectiveness, as firms with larger boards are better able to properly monitor management. This is seen as contributing to higher firm value (Pham et al., 2012). This could lead to firms with more monitoring being considered as having more governance, and thus having better credit ratings. On the other hand, some researchers discovered that board size has no impact on credit rating (Upadhyay and Sriram, 2011; Ashbaugh-Skaife et al., 2006). Theories that are relevant to discussing this relation are agency theory and resource dependence theory. The null hypothesis was accepted.

#### 6.7.5.6 Multivariate analysis and discussion: board diversity on credit rating

The relation between board diversity and credit rating was studied through Hypothesis H7b holds that “there is no statistically significant relationship between board diversity and credit rating”. Previous studies show that gender diversity contributes to the increased value of firms (Carter et al., 2003; Erhardt, Werbel and Shrader, 2003). This led to many European countries deciding to hire more female board members, with Norway, France, Germany and Spain establishing quotas to this end (Hoel, 2008; de Cabo et al., 2012; Sealy and Vinnicombe, 2012). However, not all researchers agree that board diversity makes a difference (Goodstein et al., 1994). Theories to consider when studying board diversity are

agency theory and resource dependence theory. Our findings show a statistically significant relationship at 5% for all firm years; in 2013 the significance was at 10% and in 2014 to 5%. The findings in Table 21 reveal large relation in all firm years to significance of 10% with reading of (2.441\*\*). Similar high reading for significant positive relationship was found in 2013 (1.956\*) and that of (2.076\*\*) in 2014. The theories used to explain the relation are agency and resource dependence theories. As mentioned above, de Cabo et al. (2012) find that board diversity is significant in Germany, with more women being on boards and with firms performing much better. Resource dependence theory can be used to explain this. De Cabo et al.'s research supports this finding. However, Watson et al. (1993) show that greater diversity led to difficulty in identifying perspectives, ultimately causing problems in reaching consensus. The conclusion of the relationship between board diversity and credit rating is that there is positive relation. Therefore, the null hypothesis is rejected.

#### 6.7.5.7 Multivariate analysis and discussion: frequency of board meetings on credit rating

Hypothesis H8c predicts that “there is no statistically significant relationship between the frequency of board meetings and credit rating.” The findings show that there was significance to 10% in the all firm years at (1.872\*) which is statistically significant positive relationship. Previous studies show that frequent board meetings contribute to board members helping to produce better earnings predictions, and possibly doing more monitoring of management (Karamanou and Vafeas, 2005). But some have argued that frequent meetings could increase costs to the company, without providing much benefit (Carcelo et al., 2002). Agency theory and resource dependence theory are relevant here. There is a positive and significant relationship between frequency of board meetings and credit ratings. The more frequently meetings are held, the higher the credit rating a firm has.

**Table 21: OLS Regression Results of Ownership Structure & Board Structure on Credit Rating (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted $R^2$		.382	.325	.335	.330	.429	.380
Standard Error		2.246	2.405	2.318	2.348	2.147	2.241
Durbin- Watson		.542	2.212	2.128	2.088	2.290	2.157
F-Value		17.810(.000)***	4.056(.000)***	4.217(.000)***	4.215(.000)***	5.974(.000)***	4.890(.000)***
No. of Observations		681	134	135	138	140	134
Constant		-3.642(.000)***	-1.425(.157)	-.861(.391)	-.173(.862)	.870(.386)	-2.875(.005)***
<b>Independent Variables</b>							
Block Ownership	-	-.566(.572)	-.563(.575)	-.757(.451)	-.811(.419)	.343(.732)	1.284(.202)
Institutional Ownership	+	3.389(.001)***	-.842(.401)	-1.535(.128)	-.406(.685)	-.739(.461)	-2.228(.028)**
Director Ownership	+/-	-.491(.624)	-.965(.337)	.811(.419)	.578(.564)	-1.067(.288)	-1.717(.089)*
Independent Directors	+	1.517(.013)**	.185(.854)	.310(.757)	1.685(.095)*	.896(.372)	.069(.945)
Board Size	+	1.125(.261)	.599(.550)	.072(.943)	-.021(.983)	-.207(.837)	.915(.362)
Board Diversity	+/-	2.441(.015)**	1.248(.215)	1.310(.193)	1.273(.206)	1.956(.053)*	2.076(.040)**
Frequency of Board Meetings	+	1.872(.062)*	-.278(.782)	-1.334(.185)	-1.325(.188)	-.259(.796)	-.498(.620)
<b>Control Variables</b>							
Firm Size		8.493(.000)***	3.787(.000)***	4.496(.000)***	3.954(.000)***	3.469(.001)***	2.165(.033)**
Sales Growth		-2.171(.030)**	-1.604(.111)	-1.971(.051)*	.162(.871)	-.496(.621)	-.463(.644)
Audit Committee No.		-.644(.519)	-1.391(.167)	-.907(.366)	.369(.713)	.032(.974)	-.121(.904)
Corporate Governance Committee No.		1.643(.101)	.298(.767)	.356(.722)	1.142(.256)	1.558(.122)	.877(.382)
Leverage		-7.968(.000)***	-2.628(.001)***	-2.390(.019)**	-3.529(.001)***	-4.719(.000)***	-3.734(.000)***
Capital Gain Yield		-1.245(.214)	-1.841(.068)*	1.830(.070)*	-.788(.432)	1.678(.096)*	2.597(.011)**
Stock Market Capitalisation		.345(.730)	.708(.480)	.331(.741)	.312(.756)	2.489(.014)**	-1.932(.056)*
Corruption Index		2.021(.044)**	-.442(.660)	.103(.918)	.639(.524)	.687(.494)	.436(.664)
Inflation		.655(.513)	1.793(.076)*	.054(.957)	.056(.956)	-2.476(.015)**	1.635(.105)
GDP Per Capita		1.184(.237)	1.027(.306)	.469(.640)	-.663(.509)	-1.423(.157)	2.215(.029)**
Population		-.784(.434)	.215(.830)	-.470(.639)	-1.225(.223)	-2.245(.027)**	1.968(.052)*
Masculinity		6.888(.000)***	1.108(.270)	.738(.462)	.787(.433)	1.822(.071)*	4.183(.000)***
Power Distance		2.658(.008)***	.659(.511)	.431(.667)	.658(.512)	-.058(.954)	2.464(.015)**
Anglo American		.314(.753)	.261(.795)	.445(.657)	.492(.624)	-1.025(.307)	.181(.856)
2010		1.644(.101)	-	-	-	-	-
2011		.825(.410)	-	-	-	-	-
2012		.547(.585)	-	-	-	-	-
2014		.179(.858)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

However, some research shows that frequent board meetings promote better credit rating for firms. As pointed out in the literature, more frequent board meetings have been seen to lead to better monitoring of management (Lorca et al., 2011). When board meetings were infrequently held, not enough monitoring of management took place (Menon and Williams, 1994).

### **6.7.6 Multivariate analysis and discussion: ownership structure and board structure on cost of capital**

This section analyses and discusses corporate governance as it relates to cost of capital. The same variables used in the other sections are also used here. Table 22 provides the statistics for this analysis and discussion. The F-Value is (14.309\*\*\*), indicating that the model is positive and significant at 1%. This model is a fit for predicting the relationships. The Adjusted R<sup>2</sup>%, at 31.1%, shows how the independent variable, the Ownership Structure, Board Structure, and the control variables, will interpret the dependent variable, by R<sup>2</sup>%. This suggests that any change in the independent and control variables will lead to a change in the dependent variable by R<sup>2</sup>.

The finding reveals significance in block ownership, institutional ownership, director ownership, independent directors and frequency of board meetings.

#### **6.7.6.1 Multivariate analysis and discussion: block ownership on cost of capital**

Hypothesis H2c holds that ‘there is no statistically relationship between block ownership and cost of capital’. The findings from Table 22 show that there is a strong and significant relation between the two in all firm years at (3.237\*\*\*), significant at 1% and positive. The suggestion is that increased block ownership also leads to increased cost of capital.

According to Tran (2014), when block holders are founding-family members, or other firms that it is generally the case that these founding family members do not invest their own capital. They therefore borrow, but the nature of block holders and the fact that they have some control that other shareholders do not have, gives them control over management (Tran, 2014). These block holders show that they are reluctant to voluntarily disclose (Ntim et al., 2014). This contributes to firms with block holders being seen as more risky and therefore as credit risks. This means that they would have to pay more for

borrowing, and so cost of capital increases. Agency theory is used to explain the relationship.

Block holders, because of their advantage in voting in blocks, can easily coordinate their efforts and are usually large shareholders that can protect their interests (Shleifer et al., 1997). Managers realise the power of block holders, who can easily terminate a manager who is not working in their interests, and can influence agency costs. However, block holders can also help to keep agency costs down, by monitoring the role of managers (Shleifer et al., 1997). Since block holders differ from family firms, they tend to have better costs of borrowing (Anderson and Reeb, 2004). But where block holders were seen as associated with family firms, the reverse was seen, as family firms were seen as not likely to invest their own funds, and therefore not good credit risks. Therefore, their costs of borrowing was usually high. Matthies (2013) observes that keeping block holders to a maximum of 5 % of shares is effective in preventing undue influence on their part.

#### 6.7.6.2 Multivariate analysis and discussion: institutional owners on cost of capital

Hypothesis H3C examines the relation between institutional ownership and cost of capital, stating: “There is no statistically significant relationship between institutional membership and cost of capital”. The findings in Table 22 show that there is a significance relationship between institutional ownership and cost of capital. In fact, there exist instances of statistically positive relationships between institutional ownership and cost of capital. The relation for all firm years shows a significant positive relationship to 10% with (2.521\*\*).

Previous studies for the most part show no statistically positive relationship between institutional owners and cost of capital. The explanation is that companies with higher levels of institutional ownership tend to disclose voluntarily. In South Africa, this contributed to better corporate governance and lower cost of capital (Ntim et al., 2012). In the Continental tradition, as in Germany, where there is a two-tiered board, it was found

that banks had much control over firms, more than was found between traditional lenders and borrowers (Elston, 2003). This control included control over shareholders' voting rights, which were greatly supervised the firms (Elston, 2003). With representatives from the banks sitting on the supervisory level of the board and proxy voting rules, and with the different country rules, it is evident that cost of capital would depend on the rules governing borrowing and ending in the different countries. But in most Anglo settings, firms demonstrating good governance rules usually receive a positive cost of capital rating (Pham et al., 2012). But when institutional ownership increases, the cost of capital will also increase. The findings of this study showing that there is a statistically significant positive relationship between institutional ownership and cost of capital, while other studies have shown that cost of capital decreases with increased institutional ownership.

#### 6.7.6.3 Multivariate analysis and discussion: director owners on cost of capital

Hypothesis H4c states: "There is no statistically significant relationship between director ownership and cost of capital". Our findings show that there is a highly statistically significant relation for all firm years for director owners and cost of capital. The suggestion is that there is a positive relation between director owners and cost of capital, because they pay a higher cost of capital because of their condition.

Studies on this relationship maintain that in instances where director owners borrow excessively in order to build up their wealth, they are charged a higher cost of capital (Pham et al., 2012). The reason for this stems from the fact the director owners could be family founders. They focus on owning and managing, which means that they are looking after their interests as opposed to the interests of other shareholders. Without much corporate governance, lenders see these companies as highly risky. Therefore, costs of capital are generally higher for director owners.

Our findings also show that there was a negative relationship, at (-1.660), between director owners and cost of capital, significant at 10%. This finding is important because it suggests

that as director ownership increases, cost of capital decreases. It was noted that when there is little governance, capital costs increase, because of higher costs related with a shortage of transparency (Pham et al., 2012). Part of the explanation for higher costs as shown in research was that at times managers worked to increase job security (Amihud and Leve, 1981; Belkhir, 2006). However, according to Laeven and Levine (2009), managers who had power on the board were more interested in exposing the firms to risky projects.

Amihud and Lev (1981) and Belkhir (2006) take the position that, at times, managers that can control board decisions focus on reducing risks more than managers that own shares. This may occur when managers aim to maximise job security (Amihud and Lev, 1981; Belkhir, 2006). Laeven and Levine (2009) explain this by pointing out that as managers accumulate influence and control of the board, they are less likely to undertake risky projects. But while some believe that more directors would lead to more monitoring and therefore lower costs of capital, others argue that with more directors, there would be less monitoring, leading to higher costs (Hermalin and Weisbach, 1998). This finding shows that there is a significant relationship; therefore, we reject the null hypothesis.

#### 6.7.6.4 Multivariate analysis and discussion: independent directors cost of capital

Hypothesis H6c predicts: “There is no statistically significant relationship between independent directors and cost of capital”. Table 22 reveals the findings relating to this hypothesis; they show a negative relationship between independent directors and cost of capital for all firm years, significant at 1%. Therefore, the null hypothesis is rejected. Previous studies show that independent directors are considered to add to a firm’s value (Ashbaugh-Skaife et al., 2004). As the independent directors increase in number in a firm, the firm is seen as increasing in value, because of the extra resources that it receives, but also because independent directors also contribute to better corporate governance (Ashbaugh-Skaife et al., 2004). It follows that as independent directors increase, the cost



of capital will decrease. The theories that explain this are agency theory and resource dependence theory.

However, Andres et al. (2013) discovered that in firms in Continental countries where there were two-tiered boards, as in Germany, board independence as promoted in Anglo-American firms could not be achieved, as the retiring CEO also served as the chairman of the supervisory board, thereby bringing the management and supervision of management together in a role that shows conflict of interest (Andres et al., 2013). Since the chairman also sets the wages for the CEO, this practice among Continental firms is highly criticised (Andres et al., 2013). Therefore, there is a difference in governance between Continental firms and Anglo-American firms, which would be reflected in the cost of capital for these different firms.

#### 6.7.6.5 Multivariate analysis and discussion: board size on cost of capital

Board size and cost of capital are represented in Hypothesis H5c. This hypothesis reads: “There is no statistically significant relationship between the board size and cost of capital.” The findings in this study supports this hypothesis, for although there were position relations, these were not significant. Previous research has shown the relationship between board size and cost of capital. According to Klein (2002), boards are generally made up of committees, and there is usually the audit committee, that is a board committee that has the responsibility of ensuring that the accounting process works well. This committee ensures that the control processes are working well and that external auditors maintain independence from senior management (Klein, 2002). The findings for the relationship between board size and cost of capital reveals that while the overall total for all firm years was (-.717). The results showed that there was no relation between board size and cost of capital. What this suggests is that there was no statistically significant positive relationship. The null hypothesis was accepted.

**Table 22: OLS Regression of Ownership Structure & Board Structure on Cost of Capital (Dependent Variable)**

	Exp. Sign	All firm years	2010	2011	2012	2013	2014
Adjusted R <sup>2</sup>		.311	.214	.444	.329	.452	.319
Standard Error		.191	.229	.118	.157	.179	.232
Durbin-Watson		1.183	2.171	2.556	2.006	1.670	1.868
F-Value		14,309(.000)***	2,840(.000)***	6,448(.000)***	4,502(.000)***	6,98(.000)***	4,280(.000)***
No. of Observations		739	143	144	151	153	148
Constant		-2.790(.005)***	.271(.787)	-.558(.578)	.455(.650)	-.520(.604)	-2.012(.046)**
<b>Independent Variables</b>							
Block Ownership	+/-	3.237(.001)***	.734(.464)	2.598(.011)**	1.379(.170)	.848(.398)	1.461(.146)
Institutional Ownership	+/-	2.521(.012)**	-1.321(.189)	.546(.586)	2.736(.007)***	1.287(.201)	2.308(.023)**
Director Ownership	-	-1.660(.097)*	-.194(.846)	.793(.430)	.201(.841)	-1.396(.165)	-1.030(.305)
Independent Directors	-	-2.986(.003)***	-.476(.635)	-1.060(.291)	-.873(.384)	-1.479(.142)	-1.365(.175)
Board Size	-	-.717(.474)	1.339(.183)	-.512(.609)	-.171(.865)	-1.217(.226)	-1.068(.288)
Board Diversity	+/-	-.157(.875)	-.492(.624)	-.520(.604)	1.138(.257)	-1.537(.127)	.631(.529)
Frequency of Board Meetings	-	-4.243(.000)***	-1.849(.067)*	-2.467(.015)**	-1.283(.202)	-.664(.508)	-2.590(.011)**
<b>Control Variables</b>							
Firm Size		1.934(.053)*	-.125(.900)	.702(.484)	1.649(.102)	1.607(.110)	1.400(.164)
Sales Growth		.684(.494)	1.763(.080)*	-1.567(.120)	-.436(.663)	-.264(.792)	-.356(.722)
Audit Committee No.		-.642(.521)	-.017(.987)	-.500(.618)	-.343(.732)	.316(.752)	-1.584(.116)
Corporate Governance Committee No.		-.836(.403)	1.164(.247)	1.024(.308)	-1.577(.117)	-.877(.382)	-1.108(.270)
Leverage		.534(.594)	-.319(.750)	.712(.478)	.133(.895)	1.109(.270)	-.603(.548)
Capital Gain Yield		3.397(.001)***	3.407(.001)***	-2.110(.037)**	.657(.512)	2.122(.036)**	1.819(.071)*
Stock Market Capitalisation		-.301(.763)	-.614(.541)	-.130(.897)	1.167(.246)	.293(.770)	-1.228(.222)
Corruption Index		4.691(.000)***	.383(.702)	1.442(.152)	-.034(.973)	2.675(.008)***	1.911(.058)*
Inflation		-.475(.635)	-.147(.883)	1.469(.144)	1.406(.162)	-1.712(.089)*	2.100(.038)**
GDP Per Capita		-2.360(.019)**	-1.074(.285)	-.316(.753)	.157(.875)	-1.993(.048)**	1.003(.318)
Population		-1.573(.116)	-.985(.327)	-.487(.627)	-.628(.531)	-1.357(.177)	.946(.346)
Masculinity		9.021(.000)***	1.351(.179)	.864(.389)	-.250(.803)	4.382(.000)***	3.834(.000)***
Power Distance		4.793(.000)***	1.420(.158)	.685(.495)	-.360(.719)	1.877(.063)*	2.283(.024)**
Anglo American		1.127(.260)	.685(.495)	-.709(.480)	-.458(.648)	.428(.669)	.496(.621)
2010		-.998(.319)	-	-	-	-	-
2011		-.727(.467)	-	-	-	-	-
2012		-.429(.668)	-	-	-	-	-
2014		.673(.501)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

#### 6.7.6.6 Multivariate analysis and discussion: board diversity on cost of capital

Hypothesis H7c reads: “There is no statistically significant relationship between board diversity and cost of capital”. The findings show that the relation for all firm years is (-.157), and the findings for 2010 to 2104 are (-.492), (-.520), (-1.138), (-1.537) and (.631), respectively. This shows that there is no significant relationship between board diversity and cost of capital. The null hypothesis is accepted.

While previous studies point out that diversity could bring in different viewpoints and approaches, the diversity that is stressed is that of gender: women on the board. It has become such an issue that many European countries have made it compulsory for a particular number of board members to be women, with Norway being one of the first countries to do so in 2008 (Hoel, 2008). Spain, France (de Capo et al., 2012) and the U.K. (Sealy and Vinnicombe, 2012) have taken similar steps. Women have played an increased role on boards in Europe; this is different from the Anglo tradition, where there are no such rules. There have not been many studies on the impact of women board members on cost of capital. According to Anderson and Reeb (2004), women board members are good at advising managers on how to use resources more efficiently, and promoting board effectiveness. However, some believe that gender diversity could be costly, as it could lead to conflicts of interest between the genders that could inhibit decision making (Anderson and Reeb, 2004). The theories that explain the relation between board diversity and cost of capital are agency and resource dependence theories.

#### 6.7.6.7 Multivariate analysis and discussion: frequency of board meetings on cost of capital

The hypothesis used to study the relationship between frequency of board meetings and cost of capital is H8c: “There is no statistically relationship between the frequency of board meetings and cost of capital”. The findings reveal a strong negative relationship between frequency of board meetings and cost of capital, for the all firm years has a relation of (-

4.243\*\*\*), significant at less than 1%. While all the years show a negative relation, 2010 and 2011 have (-1.849) at 10% significance and (-2.467\*\*) at 5%, respectively. For 2014, the relation is (-2.590\*\*), significant at 5%. This negative relation is in keeping with prior research.

According to previous studies, board meetings have been recognised as an important aspect of corporate governance (OECD Corporate Governance Principles, 2004). Frequent board meetings have been promoted as a means of achieving good firm performance, as they allow board members to carry out all the functions expected of boards (Vafeas 1999; Adams, 2005). Similarly, Lorca et al. (2011) see frequent board meetings as contributing to a more involved board. When boards meet less frequently, it is argued that they do not have the time to monitor as much as they should (Menon and Williams, 1994). Frequent board meetings are also said to contribute to a lower cost of debt, as audit committees and other directors would be more committed to monitoring management and the financial accounting process (Anderson and Reeb, 2004). Therefore, frequent board meetings were seen as leading to lower costs of capital. However, some argue that frequent board meetings do not accomplish much because meetings have to be run according to protocol, leaving less time to monitor management (Menon and Williams, 1994).

## **6.8 Robustness or sensitivity or additional analyses**

### **6.8.1 Introduction**

Section 6.8 discusses the robustness or sensitivity analysis of this study. More specifically, it shows the extent to which the reported results are robust or sensitive to the potential endogeneities and interdependencies that may exist among the governance mechanisms used. This involves discussing any concerns of endogeneity in the study, looking at the relation between the endogenous or dependent variables and the exogenous or independent variables in the equations used, and identifying where there could be potential problems, such as where variables have been omitted. As Larcker and Rusticus (2008) point out, it is

important to use a lagged financial performance-corporate governance structure, an instrumental variable model, a two-stage least squares model and a changes model. It is also suggested to demonstrate that any of the instruments used as a proxy for the original variable be considered a relevant and valid instrument (Larcker and Rusticus, 2008). Checking for endogeneity involves comparing the magnitude, as well as the statistical significance and signs, of the OLS and the endogeneity corrected estimations, to see whether they are robust or sensitive to endogeneity problems.

The endogeneity tests used are the two-stage least squares, the lagged reports and the fixed effects reports.

### **6.8.2 Two-stage least squares**

The two-stage least squares test is used with the OLS regression in order to correlate the errors that may occur in the dependent variables with the independent variable. By carrying out this study, one is able to test for endogeneity problems. Therefore, in this study, Tables 23 and 24 were used to test for endogeneity problems between the dependent and independent variables.

Previous corporate governance studies examine the effects of individual corporate governance structures and mechanisms on the financial wellbeing of firms (Morck et al., 1988; Yermack, 1996; Vefas, 1999). While this is the general approach in the literature, in practice, shareholders are more likely to monitor the behaviour of managers by looking at several mechanisms of corporate governance. The fact that there are alternate governance structures would suggest that it is possible to leave out important variables when carrying out OLS regression studies on the financial performance of firms on single corporate governance mechanisms, thereby introducing variable bias and spurious correlations (Agrawal and Knoeber, 1996; Beiner et al., 2006). This could create interactions (or a lack thereof) among alternate corporate government structures while trying to maximise effectiveness and efficiency. It is because of this possibility that the

study uses different measures of financial performance, as well as different models. This study therefore set out to solve any endogeneity problem that may appear by examining the relations between the corporate governance index and the proxies used for firm financial performance, namely, between corporate governance index and R&D/Assets, between corporate governance index and R&D/Sales, and between corporate governance index and R&D expenditure, ROA, credit rating and cost of capital. In short, the results of the study reveal the relations between corporate governance and firm financial performance, using proxies for both corporate governance and financial performance. This study also shows that there are no endogeneity problems with the proxies used.

In reporting on the endogeneity problem, the findings in Table 23 reveal that the relationship between the corporate governance index and R&D/Assets is (-2.276), significant at 5%. It is important here to recognise that the same negative sign was observed earlier. This shows that there was a negative relation between corporate governance and financial performance of the firm as measured by R&D/Assets. In Table 8, the relationship between corporate governance and financial performance as measured by R&D/Assets is (-1.671), significant at 10%. It is important that both had a negative sign, showing the relationship between these two variables.

In examining the relation between corporate governance index and R&D/Sales in this table, the study shows that there is a negative significant relation between these at (-2.72), significant at 1%. In Table 9, the finding on the relationship between corporate governance index and R&D/Sales is (-2.402), significant at 5%. What is important here for showing no endogeneity problems is that the sign is negative. Both are also significant.

When the relation between corporate governance index and R&D expenditure was examined, it was found that the results showed a significance of (-2.278) significant at 5%. This result shows that the relation is negative. This is similar to the finding of the relation between corporate governance index and R&D expenditure, where the result is (-1.676),

significant at 10%. In both of these findings, the signs were the same and significant, suggesting no endogeneity problem. This relation is similar to the relations between corporate governance index and R&D/Assets and R&D/Sales. In these three instances, the negative sign reported here is also reported earlier in the findings in Tables 8, 9 and 10, respectively.

When the relation between corporate governance index and ROA is examined, the results show that the significance is (2.775), significant at 1% and positive. The sign is similar to what is reported earlier. In Table 11, the relationship between corporate governance index and ROA is shown as (2.229), positive and significant at 5%. These two reports are similar in having the same sign, which is most important, but they are also significant and the values are also very similar.

In examining the relation between corporate governance index and credit rating, the study reveals a positive relation between the two and that there is significance of (3.8580) at 1%. There was a similar finding in the relationship between corporate governance and credit rating in Table 12, where the results show a reading of (1.836), significant at 10%. In both cases, the results show that the relation is both positive and significant.

Examination of the relation between the corporate governance index and cost of capital shows that it is significant (-8.625) at 1%, which is similar to the finding reported earlier. In Table 13, the finding is (-6.793), where there two findings which were negative, significant to 1%. These findings suggest that there is no endogeneity problem.

The study uses ownership structure and board structure to deal with possible endogeneity problems. These results are shown in Table 24. In examining the relation between block ownership and R&D/Assets, the significance of (-3406), significant to 1%. This was the same finding that there was a negative relationship between these block ownership and R&D/Assets. In Table 17, the finding of the relationship between block ownership and R&D/Assets is (-.2.982); the sign is negative, but also significant at 1%.

For the relation between block ownership and R&D/Sales, the result is (-3.205) at 1% significance, and negative, which is the same relation identified earlier between the two variables. In Table 18, the relation between block ownership and R&D/Sales is (-3.411). The sign is negative and the relationship is significant at 1%, with the readings very close in number.

**Table 23: OLS Regression Results of Instrumental Variable Estimates OECD CGI on Risk-Taking, Credit Rating and Cost of Capital**

	R&D/Assets	R&D/Sales	R&D Expenditure	ROA	Credit Rating	Cost of Capital
Adjusted $R^2$	.079	.070	.398	.170	.363	.322
Standard Error	.764	.767	.764	.060	2.265	.193
Durbin-Watson	.455	.505	.455	.989	.518	1.127
F-Value	3.705(.000)***	3.376(.000)***	21.81(.000)***	11.8(.000)***	24.218(.000)***	22.196(.000)***
No. of Observations	568	568	568	947	733	803
Constant	-4.065(.000)***	-3.801(.000)***	-4.064(.000)***	3.102(.002)***	-2.077(.038)**	.421(.674)
<b>Independent Variable</b>						
Corporate Governance Index	-2.276(.023)**	-2.72(.007)***	-2.278(.023)**	2.775(.006)***	3.858(.000)***	-8.625(.000)***
<b>Control Variables</b>						
Firm Size	.457(.648)	2.424(.016)**	11.459(.000)***	-4.546(.000)***	10.686(.000)***	8.46(.000)***
Sales Growth	.247(.805)	.463(.644)	.248(.804)	3.9(.000)***	-2.91(.000)***	-2.307(.021)**
Audit Committee No.	-3.13(.002)***	-3.455(.001)***	-3.135(.002)***	.328(.743)	-.956(.339)	-1.124(.261)
Corporate Governance Committee No.	4.412(.000)***	4.613(.000)***	4.413(.000)***	-1.903(.057)*	2.349(.019)**	.909(.364)
Leverage	.126(.900)	-1.437(.151)	.128(.899)	-8.731(.000)***	-8.031(.000)***	-.158(.875)
Capital Gain Yield	.221(.825)	.035(.972)	.223(.824)	.433(.665)	-1.173(.241)	2.521(.012)**
Stock Market Capitalisation	-1.353(.176)	-1.974(.049)**	-1.345(.179)	3.44(.001)***	-1.11(.267)	-3.881(.000)***
Corruption Index	.113(.910)	-.809(.419)	.112(.911)	1.975(.049)**	-.406(.685)	.999(.318)
Inflation	-2.153(.032)**	-2.351(.019)**	-2.166(.031)**	1.507(.132)	-2.045(.041)**	-4.069(.000)***
GDP Per Capita	3.019(.003)***	3.399(.001)***	3.018(.003)***	3.914(.000)***	3.267(.001)***	1.768(.077)*
Population	1.965(.050)**	2.363(.018)**	1.963(.050)**	2.313(.021)**	1.016(.310)	3.14(.002)***
Masculinity	-.068(.946)	-1.025(.306)	-.067(.946)	1.767(.078)*	1.118(.264)	-1.51(.131)
Power Distance	-	-	-	-	-	-
Anglo American	-.686(.493)	.146(.884)	-.690(.491)	.888(.375)	2.186(.029)**	2.13(.033)**
2010	1.193(.233)	1.173(.241)	1.191(.234)	.753(.451)	1.99(.047)**	.822(.412)
2011	.170(.865)	-.177(.860)	.177(.859)	1.338(.181)	1.005(.315)	.079(.937)
2012	.374(.709)	.336(.737)	.379(.705)	1.027(.305)	.850(.396)	.214(.830)
2014	-.368(.713)	-.304(.761)	-.366(.714)	.448(.654)	.176(.860)	.421(.674)



For the relation between block ownership and R&D expenditure, the result is a negative relation of (-3.401), significant at 1%. This was the same negative relation that was identified earlier between the two variables. In Table 19, the relationship between block ownership and R&D expenditure is (-2.983), which is negative as well as significant at 1%; the readings for both tables are close in number.

For the relation between block ownership and ROA expenditure, the significance was (2.050) to 5% significance. This is the same positive relation that was previously identified between the two variables earlier. In Table 20, the relationship between block ownership and ROA is shown as positive but not significant (0.09).

In Table 24, the relation between block ownership and credit rating is shown not to be significant at (.380); similar significance was noted in earlier identification of the relation between block ownership and credit rating in Table 21, where the reading is (-.566). However, the signs are different, with Table 24 being positive and Table 21 being negative. The results show that the relation between block ownership and cost of capital is not significant at (1.382). In Table 22, the reading is positive and significant at 1%.

The relations between block ownership and the various proxies for firm financial performance as reported in this table are similar to those reported earlier, suggesting no endogeneity problem.

The study also uses the relationship between institutional ownership and the proxies for firm financial performance in order to solve the endogeneity problem. The results are shown in Table 24.

For the relation between institutional ownership and R&D/Assets, the results show a negative relation (-5.722) significant at 1%. The result in Table 17 shows the relation between institutional ownership and R&D/Assets as (-2.982), significant at 1%. This relationship is similar to that shown in Table 24, where both are negative and significant at

1%. What is most important here is that the same negative relation that is shown between institutional ownership and R&D/Assets is observed earlier between these two variables.

A look at the relation between institutional ownership and R&D/Sales in Table 24 reveals that the results are significant at (-5.68) to 1%, and that the relation is negative. In Table 18, the finding is (-1.211), and the relation is negative but not significant. It is significant here that both relations are negative.

Similarly, the relation between institutional ownership and R&D expenditure is found to be (-5.717), significant at 1%. In Table 19, the relation between these two variables is (-.704), It is important that the relation between institutional ownership and R&D expenditure is negative, although the two results have different significance.

The relation between institutional ownership and ROA is not significant at (1.495), but it is important that this positive relation is the same as the earlier relation between these variables. The earlier reading in Table 20 shows the relationship between institutional ownership and ROA at (3.3362), significant at 1%. In Table 20, the reading is significant at 1%, but the two readings are similar in that both are negative.

In Table 24, the relation between institutional ownership and credit rating is found to be not significant at (.843), but positive. This is the same sign that is found to exist earlier in the finding of the relationship between institutional ownership and credit rating. In Table 21, the relationship between institutional ownership and credit rate is (3.389), positive and significant at 1%. While both readings are positive, the latter is significant.

The relation between institutional ownership and cost of capital in Table 24 is positive and not significant at (311). In Table 22, the reading for the relation between these two variables is (2.521), significant at 5%. The two relations are different in that they have different signs, with both readings being positive.

**Table 24: OLS Regression Results of Instrumental Variable Estimates OECD Ownership Structure & Board Structure on Risk-Taking, Credit Rating and Cost of Capital**

	R&D/Assets	R&D/Sales	R&D Expenditure	ROA	Credit Rating	Cost of Capital
Adjusted R <sup>2</sup>	.194	.162	.462	.178	.382	.311
Standard Error	.721	.724	.721	.060	2.246	.191
Durbin- Watson	.558	.595	.558	1.021	.542	1.183
F-Value	5.852(.000)***	4.902(.000)***	18.256(.000)***	8.538(.000)***	17.81(.000)***	14.309(.000)***
No. of Observations	504	504	504	872	681	739
Constant	3.653(.000)***	3.859(.000)***	3.651(.000)***	2.480(.013)**	-.632(.528)	-.178(.859)
<b>Independent Variable</b>						
Block Ownership	-3.406(.001)***	-3.205(.001)***	-3.401(.001)***	2.050(.041)**	.380(.704)	-1.382(.168)
Institutional Ownership	-5.722(.000)***	-5.68(.000)***	-5.717(.000)***	1.495(.135)	.843(.399)	-.311(.756)
Director Ownership	-.144(.886)	-.007(.995)	-.140(.889)	-.833(.405)	-.520(.604)	.386(.699)
Independent Directors	1.433(.153)	1.458(.146)	1.435(.152)	.114(.910)	-.335(.738)	-.816(.415)
Board Size	-1.374(.170)	-1.013(.312)	-1.373(.170)	-1.723(.085)*	.583(.560)	.617(.538)
Board Diversity	.342(.733)	.313(.754)	.337(.736)	-.8538(.402)	.710(.478)	-.272(.786)
Frequency of Board Meetings	2.394(.001)***	2.512(.012)**	2.394(.017)**	-3.863(.000)***	2.008(.045)**	-1.968(.049)
<b>Control Variables</b>						
Firm Size	2.626(.009)***	2.704(.007)***	3.440(.001)***	-.002(.999)	.207(.836)	1.312(.190)
Sales Growth	-2.044(.042)**	-2.034(.043)**	-2.046(.041)**	.270(.787)	.064(.949)	-.758(.449)
Audit Committee No.	1.202(.230)	.886(.376)	1.195(.233)	1.483(.139)	.156(.876)	.619(.536)
Corporate Governance Committee No.	2.908(.004)***	2.761(.006)***	2.902(.004)***	.437(.662)	.608(.543)	-.533(.594)
Leverage	2.038(.042)**	1.454(.146)	2.033(.043)**	-1.637(.102)	-2.165(.031)**	-.209(.834)
Capital Gain Yield	4.664(.000)***	4.586(.000)***	4.663(.000)***	1.117(.264)	-.430(.667)	2.722(.007)***
Stock Market Capitalisation	-.450(.653)	-.285(.776)	-.443(.658)	-.326(.745)	-.489(.625)	-.631(.528)
Corruption Index	1.463(.144)	1.424(.155)	1.467(.143)	-.019(.985)	-.191(.848)	1.997(.046)**
Inflation	-2.01(.045)**	-1.839(.067)*	-2.018(.044)**	1.007(.314)	.943(.346)	.340(.734)
GDP Per Capita	.256(.798)	.182(.856)	.258(.797)	-1.891(.059)*	-.577(.564)	-.623(.534)
Population	-.624(.533)	-.825(.410)	-.629(.530)	.075(.940)	.167(.867)	-.296(.767)
Masculinity	-2.209(.028)**	-2.234(.026)**	-2.21(.028)**	.218(.827)	.867(.386)	.018(.986)
Power Distance	-1.197(.232)	-1.227(.220)	-1.199(.231)	.310(.757)	.709(.478)	.005(.996)
Anglo American	-.800(.424)	-.825(.410)	-.804(.422)	.382(.703)	.483(.629)	-.346(.730)
2010	1.284(.200)	1.216(.224)	1.286(.199)	-.168(.867)	-.027(.979)	.193(.847)
2011	1.397(.163)	1.285(.199)	1.403(.161)	.612(.541)	.077(.939)	.211(.833)
2012	1.167(.244)	.928(.354)	1.171(.242)	.301(.763)	.098(.922)	-.724(.469)
2014	.706(.480)	.819(.413)	.704(.482)	.382(.703)	.300(.765)	-.741(.459)

These findings show that the same signs exist between institutional ownership and most of the proxies as in earlier tables, suggesting that there is no endogeneity problem.

The study also sets out to solve the endogeneity problem with respect to director ownership and the proxies for firm financial performance. This is also shown in Table 24. The relation between director ownership and R&D/Assets, shown in Table 24, is negative and not

significant at (-1.44). In Table 19, this relation is shown to be (.300). The signs are different, but the amounts are relatively small. The findings were not significant in any case.

In Table 24, the relation between director ownership and R&D/Sales is shown to be positive and not significant at (.007). In Table 20, the relation is shown as (.494). Both readings are positive and not significant. Similarly, the relation between director ownership and R&D expenditure is positive and not significant at (.140) in Table 24. In Table 19, the reading is (.297). Both readings are positive and not significant. But the relation between director ownership and ROA is negative and not significant at (.833), as shown in Table 24. In Table 20, the relation is (-.144), which is very small and very close to the relation between these two variables in Table 24. Neither finding is significant.

Similarly, there is a negative and insignificant relation between director ownership and credit rating, at (-.520), which is the same negative relation observed earlier in Table 21, where the relationship between these two variables was (-.491). These results are similar in all respects.

The relation between director ownership and cost of capital is positive and not significant at (.386), as shown in Table 24. In Table 22, the relationship is (-1.660), significant at 10%. This relationship is different in Table 24, since the signs and significance are different.

This study of the relation between director ownership and the proxies for firm financial performance suggest that there are no endogeneity problems, because most of the signs found in the tables are similar.

Table 24 also shows that this study has endeavoured to solve the endogeneity problem by showing the relation between independent directors and the proxies for firm financial performance. The study reports a positive relation between independent directors and R&D/Assets, but the finding is not significant at (1.433), as shown in Table 24. In Table 17, the relation between independent directors and R&D/Assets is (3.698), significant at

5%. This relation is positive and significant. It is important that this is the same positive sign found in the earlier report of the relationship between these two variables.

The relation between independent directors and R&D/Sales is also positive and not significant at (1.458) in Table 24. In Table 18, the relationship between independent directors and R&D/Sales is (2.764), significant at 1%. This finding shows a positive and significant relationship. The relation in both cases has the same sign, which is most important in suggesting no endogeneity problem.

Similarly, the relation between independent directors and R&D expenditure is also positive and not significant at (1.435). In Table 19, the relationship is (3.687), which is positive and significant at 1%. The positive signs reported in both cases suggest no endogeneity problem with respect to independent directors and R&D expenditure.

In Table 24, the relation between independent directors and ROA is shown to be positive and significant at (.114). This was the same positive relation between these two variables reported earlier in Table 20, where the relation was shown as (.248).

The relation between independent directors and credit rating was reported as negative but not significant at (-.335), and in Table 21, this relation is shown as (1.517), positive and significant at 5%. A comparison between these two readings shows that the signs and the levels of significance are also different.

Similarly, a negative relation between independent directors and cost of capital was reported, but it is not significant at (-.816), as shown in Table 24. In Table 22, the relation is shown as (-2.986), which is negative and significant at 1%. A comparison between these two relations shows that they had a common negative sign, but Table 22 shows a significant relation. It is also important that the negative sign was the same as in earlier reporting on the relationship between independent directors and cost of capital, suggesting no endogeneity problem.

In Table 24, the study tried to solve the endogeneity problem with respect to board size and the proxies for firm financial performance. The relation between board size and R&D/Assets is negative and not significant at (-1.374) in Table 24. In Table 19, the relation between these two variables is (-1.564). Neither of these relations is significant. This is the same sign as in the earlier report of the relationship between these two variables.

Similarly, the relation between board size and R&D/Sales is negative and not significant at (-1.013); this is the same negative relation of (-2.481) reported earlier in Table 18. The relation between board size and R&D expenditure is negative and not significant at (-1.373), very close to the finding for these two variables in Table 19, of (-1.566). The fact that the same sign is found in both tables for board size and R&D expenditure shows that there is no endogeneity problem.

The relation between board size and ROA is seen as negative but significant at (-1.723) at 10% in Table 24. In Table 20, the reading for the relation between these two variables is (-.901). It is important that the same negative sign was reported in both accounts of the relationship between these two variables.

The findings in Table 24 show a positive relation between board size and credit rating, which is not significant at (.583). In Table 21, the relation between these two variables is shown as (1.125). The important point here is that this relationship had the same positive sign in Table 24, reporting on the relationship between board size and credit rating.

The relation between board size and cost of capital is found to be positive and not significant at (.617) in Table 24. In Table 22, the relation between these two variables is (-.717). The signs are different in both cases, although the numbers are similar. The fact that in most cases related to board size, most of the signs for the relationship between board size and the proxies for firm financial performance suggests that there are no endogeneity problems.

Table 24 also shows that there are no endogeneity problems related to board diversity and the proxies for firm financial performance. The relation between board diversity and R&D/Assets is shown to be positive and not significant at (.342). In Table 17, this relation is shown as (1.468). Although both readings are not significant, the signs were the same as a positive. In Table 17, it was seen that the relation could also be shown as negative.

Similarly, there is a positive relation between board diversity and R&D/Sales, but the relation is not significant at (.313) in Table 24. In Table 18, the relation is shown as (1.271). It is important for showing no endogeneity problem as the positive sign in this relation was the same positive sign found in Table 24 in the relation between board diversity and R&D/Sales.

The relation between board diversity and R&D expenditure is reported in Table 24 as positive but not significant at (.337). In Table 19, the relation is (1.466), which is similar.

In Table 24, the relation between board diversity and ROA is found to be negative but not significant at (-.8538). In Table 20, the relation is (-.563), which is the same sign as found earlier.

However, examination of the relation between board diversity and credit rating shows a positive but not significant relationship at (.710) in Table 24. In Table 21, the relation is (2.441). The positive sign is important because it suggests no endogeneity, as the sign of the relationship between these two variables shown in Table 24 is the same sign.

In Table 24, the relation between board diversity and cost of capital is negative and but not significant at (-.272). In Table 22, the relation is (-.157), similar to that in Table 24. It is important that the relationship between these two variables in Table 22 is negative.

In checking for endogeneity problems, this study compares the findings in Table 24 with reports of the relations between the frequency of board meetings and the proxies for firm

financial performance. It is evident that the signs for the majority of readings are the same. The relation between frequency of board meetings and R&D/Assets shows a negative and significant finding at (-3.406), significant at 5% in Table 24. In Table 17, this relation is shown as (-4.293). What is important is that both of the reports of the relationship between these two variables show the same negative sign and are both significant.

The relation between frequency of board meetings and R&D/Sales is positive but significant (2.512) at 5% in Table 24. In Table 18, the relation is shown as (-3.399). It is important to note that while the sign is different from the earlier report, the finding is significant, as in earlier reporting of this relation.

The relation between frequency of board meetings and R&D expenditure is positive but not significant at (2.394), as reported in Table 24. In Table 19, the relation is (-4.288). The findings are similar between both reports.

Table 24 shows a negative relation of (-3.863) between frequency of board meetings and ROA, significant at 1%. In Table 20, the relation is (-2.216), negative and significant at 5%. Both relations are negative and significant.

The finding for the relation between frequency of board meetings and credit rating is positive and significant at 5% (2.008). In Table 21, the relation is (1.872), which is positive and significant at 10%. Both relations have the same sign and are significant.

A negative relation is found between frequency of board meetings and cost of capital, but it is not significant at (-1.968) in Table 24. In Table 22, this relationship is shown as (-4.243). Both findings have the same negative sign.

The two-stage least squares test, in correlating the possible errors between the dependent and independent variables, demonstrates that there are no endogeneity problems.



### 6.8.3 Lagged

This section discusses the results of the study to estimate a lagged financial Performance corporate governance structure which would deal with any endogeneity problems that may come about because of a time-lag that may occur in the financial performance-corporate governance relationship. Tables 25 and 26 reveal the findings that deal specifically with the endogeneity problem.

**Table 25: OLS Regression Results of Lagged OECD CGI on Risk-Taking, Credit Rating and Cost of Capital**

	R&D/Assets	R&D/Sales	R&D Expenditure	ROA	Credit Rating	Cost of Capital
Adjusted $R^2$	.075	.063	.391	.144	.409	.484
Standard Error	.770	.770	.776	.062	2.210	.194
Durbin-Watson	.560	.602	.561	1.157	.678	1.051
F-Value	3.214(.000)***	2.83(.000)***	18.445(.000)***	8.472(.000)***	25.072(.000)***	36.46(.000)***
No. of Observations	490	490	490	800	627	681
Constant	.374(.321)	-.002(.125)	.555(.001)***	4.395(.000)***	.944(.418)	-6.827(.001)***
<b>Independent Variable</b>						
Corporate Governance Index	1.222(.657)	.064(.852)	1.079(.479)	3.061(.000)***	3.85(.000)***	-5.9(.000)***
<b>Control Variables</b>						
Firm Size	-.911(.878)	1.438(.474)	13.387(.005)***	-3.994(.000)***	9.595(.008)***	3.447(.000)***
Sales Growth	.911(.291)	.942(.329)	1.204(.535)	1.649(.620)	-1.779(.087)*	-.041(.872)
Audit Committee No.	-2.666(.000)***	-3.339(.008)***	-2.820(.045)**	-.283(.225)	-.752(.201)	-.482(.847)
Corporate Governance Committee No.	.962(.987)	.704(.519)	.957(.874)	3.020(.001)***	.448(.008)***	-2.202(.035)**
Leverage	-.833(.637)	-2.021(.015)**	-.987(.691)	-5.531(.000)***	-7.357(.009)***	.875(.921)
Capital Gain Yield	.222(.796)	-.005(.821)	.252(.358)	.726(.596)	-.945(.632)	.647(.281)
Stock Market Capitalisation	2.922(.000)***	1.84(.061)*	2.892(.005)***	4.781(.000)***	5.58(.000)***	-1.313(.459)
Corruption Index	-.985(.510)	-1.041(.994)	-.982(.843)	-.903(.592)	.535(.291)	7.397(.000)***
Inflation	-4.501(.001)***	-3.635(.000)***	-4.429(.006)***	-2.743(.001)***	-5.739(.009)***	.367(.304)
GDP Per Capita	-1.037(.681)	-.195(.351)	-1.092(.239)	-3.871(.000)***	-3.28(.002)***	-2.127(.025)**
Population	-1.184(.375)	-.431(.315)	-1.24(.638)	-3.372(.000)***	-5.286(.003)***	-.715(.529)
Masculinity	.197(.521)	-.206(.971)	.11(.008)***	-2.512(.021)**	5.074(.000)***	11.723(.000)***
Power Distance	-2.089(.034)**	-1.562(.171)	-2.158(.013)**	-2.952(.002)***	.636(.128)	7.306(.000)***
Anglo American	-1.542(.281)	-.863(.638)	-1.492(.258)	.952(.283)	.989(.204)	1.504(.386)
2010	-	-	-	1.042(.538)	-	.078(.140)
2011	2.681(.001)***	2.086(.031)**	2.356(.071)**	-.282(.465)	3.452(.000)***	-
2012	1.697(.061)*	1.429(.980)	1.311(.929)	1.1(.778)	1.047(.835)	1.122(.193)
2013	-.169(.969)	.134(.657)	-.326(.157)	-	-1.346(.648)	2.139(.021)**

In Table 25, the adjusted  $R^2$  for the various proxies used to represent performance are robust, as the F-Value for all show the same significance at 1%, and all are positive, although the sizes of the figures differ. In Table 25, the F-Values for R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital are (3.214), 2.83, 18.445, 8.472, 25.072 and 36.46, respectively. Since these proxies maintain the same degree of significance and the same sign (positive), it can be said that there are no endogeneity problems here. All of the Adjusted R Square are positive and not significant.

In terms of the Corporate Governance Index in Table 25, there are no endogeneity problems, as only three of the proxies have findings significant at 1%, namely, ROA at (3.061), credit rating at (3.85) and cost of capital at (-5.9), and only one of these is negative. The others are positive, at (1.222), (.064) and (1.079) for R&D/Assets, R&D/Sales and R&D expenditure, respectively.

In the lagged reports in this study, ownership structure and board structure are used to deal with any possible endogeneity problem; the results are shown in Table 26. With respect to risk-taking based on R&D/Assets, the relationship between block ownership and R&D/Assets in the lagged report is calculated as (-3.25). In Table 17, the relationship between block ownership and R&D/Assets is (-2.982). These two findings are similar, as both have a negative sign and are significant at 1%.

The lagged reports for block ownership show that the relationship between block ownership and R&D/Sales is (-3.467) in Table 26. In Table 18, that relationship is (-3.411). The similarity between the regular and the lagged report with respect to R&D/Sales shows that the same negative signs and the same degree of significance, 1%, were observed, suggesting no endogeneity problem.

In Table 26, the lagged relationship between block ownership and R&D expenditure is (-3.306); in Table 19 that relationship is shown as (-2.983). These two findings have the same negative sign and the same degree of significance of 1 %.

In the lagged reports in Table 26, the relationship between block ownership and ROA is (.327). In Table 20, the relationship between block ownership and ROA is (.009). These two findings are similar, as both have the positive sign and both are not significant.

**Table 26: OLS Regression Results of Lagged OECD Ownership Structure & Board Structure on Risk-Taking, Credit Rating and Cost of Capital**

	the R&D/Assets	R&D/Sales	R&D Expenditure	ROA	Credit Rating	Cost of Capital
Adjusted $R^2$	.180	.150	.446	.139	.409	.459
Standard Error	.735	.736	.74	.064	2.211	.190
Durbin-Watson	.663	.694	.664	1.154	.669	1.201
F-Value	4.873(.000)***	4.127(.000)***	15.241(.000)***	5.845(.000)***	17.411(.000)***	22.615(.000)***
No. of Observations	425	425	425	723	569	613
Constant	-.334(.124)	-.293(.400)	-.187(.482)	4.444(.001)***	.160(.301)	-4.383(.000)***
<b>Independent Variable</b>						
Block Ownership	-3.25(.007)***	-3.467(.002)***	-3.306(.001)***	.327(.567)	-.595(.923)	1.867(.063)*
Institutional Ownership	.344(.423)	-.630(.133)	.255(.986)	3.033(.001)***	-1.581(.345)	1.342(.254)
Director Ownership	-.597(.350)	-.248(.657)	-.420(.450)	.342(.164)	1.006(.127)	-.327(.963)
Independent Directors	3.947(.004)***	2.65(.008)***	4.034(.000)***	.582(.877)	2.2(.038)**	-3.711(.008)***
Board Size	-1.412(.123)	-2.341(.038)**	-1.419(.234)	-1.177(.271)	1.144(.987)	-1.982(.045)**
Board Diversity	2.697(.002)***	2.707(.000)***	2.765(.006)***	-.143(.589)	3.046(.003)***	-.210(.387)
Frequency of Board Meetings	-2.936(.000)***	-2.346(.017)**	-2.944(.000)***	-.342(.535)	-.949(.889)	-3.967(.003)***
<b>Control Variables</b>						
Firm Size	-.946(.811)	1.281(.196)	10.944(.009)***	-2.598(.000)***	8.663(.001)***	2.895(.000)***
Sales Growth	.517(.653)	.464(.548)	.694(.534)	.828(.411)	-2.365(.047)**	-.092(.265)
Audit Committee No.	-2.136(.021)**	-2.55(.021)**	-2.27(.036)**	-.040(.654)	-1.369(.936)	-1.135(.800)
Corporate Governance Committee No.	1.4(.136)	.954(.985)	1.322(.159)	-2.412(.044)**	-.196(.241)	-1.815(.067)*
Leverage	-.359(.944)	-1.623(.242)	-.554(.146)	-4.688(.000)***	-8.063(.001)***	1.116(.214)
Capital Gain Yield	.239(.583)	.025(.707)	.287(.580)	.702(.486)	-1.287(.257)	.954(.165)
Stock Market Capitalisation	2.315(.043)**	1.443(.193)	2.327(.042)**	3.548(.003)***	4.009(.000)***	.803(.580)
Corruption Index	-.466(.229)	-.577(.674)	-.414(.909)	-.585(.536)	.999(.546)	5.231(.009)***
Inflation	-4.273(.000)***	-3.860(.005)***	-4.246(.000)***	-1.623(.895)	-4.165(.000)***	-1.618(.567)
GDP Per Capita	-1.618(.533)	-.561(.127)	-1.738(.089)*	-2.44(.038)**	-2.399(.032)**	-1.714(.065)*
Population	-.478(.301)	.365(.865)	-.579(.624)	-1.692(.091)*	-3.822(.002)***	-1.688(.071)*
Masculinity	1.209(.140)	.419(.321)	1.153(.426)	-3.303(.008)***	4.124(.001)***	8.22(.002)***
Power Distance	1.263(.554)	-1.396(.429)	-1.309(.400)	-3.078(.004)***	.509(.185)	4.009(.000)***
Anglo American	-2.253(.032)**	-1.828(.069)*	-2.228(.031)**	-.345(.985)	.12(.149)	.65(.587)
2010	.713(.320)	.519(.354)	.86(.276)	1.138(.296)	1.526(.299)	-1.134(.343)
2011	3.014(.001)***	2.457(.048)**	2.87(.005)***	1.836(.045)**	3.434(.006)***	.435(.504)
2012	1.994(.627)	1.624(.653)	1.764(.078)*	.666(.998)	1.737(.071)*	.732(.315)

The lagged report in Table 26 shows the relationship between block ownership and credit rating at (-.595). In this table, the finding for block ownership and credit rating is (-.566). Both of these findings are not significant and have the same negative sign, and the numbers are very close, suggesting no endogeneity problem.

The lagged report for block ownership with respect to cost of capital in Table 26 shows the relationship at (1.867), significant at 1%. In Table 22, the relationship between block ownership and cost of capital is shown as (3.237), significant at 1%. What is apparent here is that there is a similarity of sign and significance in both findings. This suggests that there is no endogeneity problem.

A study of block ownership with the proxies for firm financial performance shows that the majority of the relationships were similar between the lagged reports and the regular reports, therefore suggesting that there was no endogeneity problem. In Table 26, the findings for the relationship between institutional ownership and R&D/Assets in the lagged reports show a positive relationship of .344. In Table 17, that relationship is (-.702) and negative. The findings were shown as similar in not being significant, although the signs were different. The lagged report for the relationship between institutional change and R&D/Sales is (-.630) in Table 26; in Table 18, that reading is (-1.211). Both findings have a negative sign and neither is significant.

The lagged report in Table 26 shows a finding of (.255) for the relationship between institutional ownership and R&D expenditure; in Table 19, that finding is (-.704). In the lagged report in Table 26, the relationship between institutional ownership and ROA is (3.033), significant at 1%. In Table 20, the relationship between institutional ownership and ROA is (-3.3362), also significant at 1%. Both findings have the same negative sign, both are significant at 1% and both are similar in size. There is no evidence of endogeneity.

The lagged report in Table 26 for the relationship between institutional ownership and credit rating is (-1.581). In Table 21, this relationship is (3.389), significant at 1%. There

is a difference between these findings, with the lagged report having a negative relationship, and the regular report showing a positive sign and significance at 1%. But the lagged report in Table 26 for the relationship between institutional ownership and cost of capital shows (1.342). In Table 22, this relationship is (2.531). These findings are positive and not significant. This suggests that most of the findings in Table 26 for institutional ownership and the proxies for firm financial performance show no endogeneity problem.

A look at the other independent variables, namely, director ownership, independent directors, board size, board diversity and frequency of board meetings, and their relationships with the dependent variables, namely, R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital, reveals that the findings in the lagged report in Table 26 are largely similar to the findings in Tables 17 to 22, respectively. For example, when one looks at director ownership in the lagged report in Table 26, one observes that the findings in terms of R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital, are (-.597), (-.248), (-.420), (.342), (1.006) and (-.327), respectively. When one looks at the regular findings of the relationships between director ownership and R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital, the findings are (.300), (.180), (-.463), (.342), (-.499) and (-.436), in Tables 17 to 22, respectively. A direct one-to-one comparison between the lagged and regular findings reveals that there is no significance in these findings and that most of the signs are negative. The suggestion is that, with respect to the relationship between director ownership and firm financial performance, there is no endogeneity problem.

The relationships between independent directors and R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital in the lagged report in Table 26 are (3.937), (2.65) and (4.034), all significant at 1%; (.582), not significant; (2.2), significant at 5% and (-3.711), significant at 1%, respectively. In the regular reports, the findings reveal that the relationship between independent directors and R&D/Assets, R&D/Sales,

R&D expenditure, ROA, credit rating and cost of capital are (3.698), (2.764), (3.687), all significant at 1%; (.248), not significant; (1.517), significant at 5%; and (-4.243), significant at 1%, in Tables 17 to 22, respectively. This reveals that there is similarity of signs and significance in most of the findings in both the lagged and regular reports, suggesting no problem with endogeneity.

There were similar findings for the independent variables, board size, board diversity and frequency of board meetings. When these regular findings were compared to the lagged findings, as with the other findings noted above, there were similarities. This suggests that there is no endogeneity problem in the relationships between the independent variables and the dependent variables in the regular and lagged reports.

#### **6.8.4 Fixed affect**

The third test of endogeneity in this study is that of fixed effects. Table 27 points to the results of fixed effects OECD on risk-taking, credit rating and cost of capital. The adjusted R2 is (.974), for Durbin-Watson it is (1.76), and the F-Value which is significant at 1% place is at (158.07). The effect of the corporate governance index in terms of R&D/Assets, R&D/Sales, R&D Expenditure, ROA, credit rating and cost of capital, respectively is (-.293), (-.273), (-.308), (.013), (.113) and (-.550), respectively.

Table 28 gives the breakdown in the relationship between the independent variables and the dependent variables with respect to fixed effect on ownership structure and board structure. In terms of the relationship between block ownership and the firm financial performance proxies based on fixed effects, the findings are similar to previous results. For example, in terms of the findings of the fixed effects with respect to the relationship between block ownership and R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital, the findings are (-.149), (-.388), (-.154), (.155), (-.321) and (.091), respectively. This is similar to the findings in Tables 15 to 20, which are (-2.982), (-3.411), (-2.983), all significant at 1%; (.009), (-.566), not significant; and (3.237),

significant at 1%, respectively. These findings provide evidence that in terms of fixed effects, there is no endogeneity problem.

**Table 27: OLS Regression Results of Fixed Effect OECD CGI on Risk-Taking, Credit Rating and Cost of Capital**

	the R&D/Assets	R&D/Sales	R&D Expenditure	ROA	Credit Rating	Cost of Capital
Adjusted $R^2$	.974	.971	.983	.639	.952	.697
Standard Error	.128	.134	.128	.039	.625	.129
Durbin-Watson	1.76	1.718	1.76	2.073	1.496	2.07
F-Value	158.07(.000)***	143.76(.000)***	243.558(.000)***	9.128(.000)***	89.161(.000)***	11.348(.000)***
No. of Observations	568	568	568	947	733	803
Constant	-.721(.471)	-1.352(.177)	-.702(.483)	.090(.928)	1.413(.158)	2.574(.010)**
<b>Independent Variable</b>						
Corporate Governance Index	-.293(.770)	-.273(.785)	-.308(.758)	.013(.990)	.113(.910)	-.550(.965)
<b>Control Variables</b>						
Firm Size	-2.629(.009)***	2.152(.032)**	9.434(.000)***	-3.253(.001)***	2.004(.046)**	-1.288(.198)
Sales Growth	-.857(.392)	-2.178(.030)**	-.867(.386)	7.083(.000)***	-.354(.723)	1.079(.281)
Audit Committee No.	1.133(.258)	1.487(.138)	1.148(.252)	-1.083(.279)	-1.019(.309)	-.462(.644)
Corporate Governance Committee No.	-1.636(.103)	-.991(.322)	-1.641(.102)	.083(.934)	-2.093(.037)**	-1.687(.092)*
Leverage	2.719(.007)***	1.678(.094)*	2.75(.006)***	-9.884(.000)***	-3.555(.000)***	1.121(.263)
Capital Gain Yield	.176(.861)	.008(.994)	.185(.854)	-.554(.580)	-2.778(.006)***	2.771(.006)***
Stock Market Capitalisation	1.157(.248)	.347(.729)	1.27(.205)	.788(.431)	.361(.718)	-3.202(.001)***
Corruption Index	-.480(.632)	-.772(.440)	-.586(.558)	.25(.803)	-1.447(.149)	-.550(.582)
Inflation	.468(.640)	-.588(.557)	.446(.656)	-.856(.392)	.091(.927)	-2.989(.003)***
GDP Per Capita	.731(.465)	.657(.512)	.746(.456)	1.099(.272)	.935(.350)	-.699(.485)
Population	-2.238(.026)**	-1.747(.081)*	-2.253(.025)**	-.727(.467)	2.254(.025)**	.709(.479)
Masculinity	-	-	-	-	-	-
Power Distance	-	-	-	-	-	-
Anglo American	-	-	-	-	-	-
2010	.833(.405)	2.293(.022)**	.855(.393)	1.483(.139)	2.471(.014)**	-1.255(.210)
2011	1.669(.096)*	1.353(.177)	1.764(.078)*	.879(.380)	1.466(.143)	-1.416(.157)
2012	.601(.548)	.554(.580)	.68(.497)	1.825(.068)*	1.272(.204)	-.894(.371)
2014	.924(.356)	1.457(.146)	.948(.344)	1.009(.313)	-.531(.596)	.770(.442)

In terms of institutional ownership, the finding for the relationship between institutional ownership and R&D/Assets is (-.702) in Table 17. Similarly, the finding for the relationship between institutional ownership and risk-taking based on R&D/Sales is shown in Table 18 as (-1.211). For the relationship between institutional ownership and R&D expenditure, the finding is (-.704) in Table 19. In Table 20, the relationship between

institutional ownership and ROA with respect to credit rating is (3.389), and in Table 22, the relationship between this variable and cost of capital is (2.521) and significant at 5%. A look at the corresponding finding in Table 28 for the relationship between institutional ownership and the dependent variables of R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital, reveals similarities with the findings in Tables 17 to 22 for this relationship. The findings in Table 28 for R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital, in terms of fixed effects, are (-1.553), (-1.53), (-1.568), (-.177), (.817) and (.775), respectively. The signs and significance are similar between the regular findings in Tables 17 to 22 and those in Table 28. The fact that the signs and significance for most of the findings are the same suggests that there is no endogeneity in this study.

A similar trend is observed in terms of the proxies for corporate governance in the use of independent directors, board size, board diversity and frequency of board meetings. As outlined earlier, these findings have a similar trend to the fixed effects findings. A similar pattern, with similar signs and degrees of significance, suggests that there is no endogeneity.

As mentioned earlier, endogeneity tests involved two-stage least squares, lagged reports and fixed effects findings. Our findings on the relationships between the independent variables, namely, block ownership, institutional ownership, director ownership, independent directors, board size, board diversity and frequency of board meetings, and the dependent variables, namely, R&D/Assets, R&D/Sales, R&D expenditure, ROA, credit rating and cost of capital, from two-stage least squares, lagged reports and fixed effect tests show major similarities in signs and significance. The similarities of the signs are most important because they suggest the same relationships hold between the independent and dependent variables, regardless of the endogeneity test used. Therefore, we conclude that regardless of the proxy used for corporate governance, and regardless of the proxy used for firm financial performance, the relationship between corporate governance and risk-taking,



credit rating and cost of capital holds true. This proves that there are no endogeneity problems in this study.

**Table 28: OLS Regression Results of Fixed Effect OECD Ownership Structure & Board Structure on Risk-Taking, Credit Rating and Cost of Capital**

	the R&D/Assets	R&D/Sales	R&D Expenditure	ROA	Credit Rating	Cost of Capital
Adjusted $R^2$	.972	.970	.981	.635	.951	.672
Standard Error	.133	.136	.133	.040	.634	.132
Durbin-Watson	1.79	1.787	1.798	2.07	1.490	2.06
F-Value	136.235(.000)***	126.463(.000)***	205.444(.000)***	8.549(.000)***	82.664(.000)***	9.688(.000)***
No. of Observations	504	504	504	872	681	739
Constant	-.775(.439)	-2.155(.032)**	-.76(.448)	.031(.975)	.552(.581)	2.987(.003)***
<b>Independent Variable</b>						
Block Ownership	-.149(.881)	-.388(.698)	-.154(.877)	.155(.877)	-.321(.748)	.091(.927)
Institutional Ownership	-1.553(.121)	-1.53(.127)	-1.568(.118)	.117(.907)	.817(.414)	.775(.439)
Director Ownership	.213(.831)	.052(.958)	.157(.875)	-.137(.891)	-1.065(.288)	-.026(.979)
Independent Directors	.018(.985)	.847(.397)	.023(.982)	.440(.660)	1.139(.255)	-.538(.590)
Board Size	-.834(.405)	-.942(.347)	-.829(.408)	-.088(.930)	1.956(.051)*	-.48(.631)
Board Diversity	1.744(.082)*	2.515(.012)**	1.754(.080)*	-.374(.708)	1.176(.240)	-.169(.866)
Frequency of Board Meetings	-.842(0.400)	-.155(.868)	-.806(.421)	-.484(.628)	1.524(.128)	-.673(.502)
<b>Control Variables</b>						
Firm Size	-2.204(.028)**	2.284(.023)**	8.737(.000)***	-3.162(.002)***	1.487(.138)	-1.23(.219)
Sales Growth	-1.16(.247)	-2.704(.007)***	-1.161(.246)	6.627(.000)***	-.545(.586)	.838(.402)
Audit Committee No.	1.00(.318)	1.299(.195)	1.017(.310)	-1.006(.315)	-1.45(.148)	-.394(.694)
Corporate Governance Committee No.	-1.324(.186)	-.673(.501)	-1.335(.183)	-.330(.741)	-1.503(.133)	-1.669(.096)*
Leverage	3.308(.001)***	2.741(.006)***	3.328(.001)***	-9.652(.000)***	-3.448(.001)***	1.458(.146)
Capital Gain Yield	.098(.922)	-.211(.833)	.107(.914)	-.649(.516)	-2.666(.008)***	2.664(.008)***
Stock Market Capitalisation	1.335(.183)	1.232(.219)	1.433(.153)	1.17(.242)	.422(.673)	-2.968(.003)***
Corruption Index	-.008(.994)	.072(.943)	-.108(.914)	.211(.833)	-1.141(.254)	-.617(.538)
Inflation	.359(.720)	-.146(.884)	.342(.732)	-.377(.706)	-.237(.813)	-2.694(.007)***
GDP Per Capita	.089(.929)	.343(.732)	.111(.912)	1.295(.196)	.507(.613)	-.526(.599)
Population	-1.974(.049)**	-1.785(.075)*	-1.987(.048)**	-.839(.402)	2.319(.021)**	.712(.476)
Masculinity	-	-	-	-	-	-
Power Distance	-	-	-	-	-	-
Anglo American	-	-	-	-	-	-
2010	1.003(.317)	2.811(.005)***	1.017(.310)	1.656(.098)*	2.502(.013)**	-.977(.329)
2011	1.847(.066)*	1.970(.050)**	1.925(.055)*	1.035(.301)	1.65(.100)	-1.25(.212)
2012	.85(.396)	.964(.336)	.915(.361)	1.906(.057)*	1.482(.139)	-.695(.487)
2014	.998(.319)	1.538(.125)	1.011(.313)	.883(.377)	-.341(.734)	.680(.497)

## 6.9 Chapter Summary

This chapter provides, analyses and discusses the empirical results of the study. It has accomplished the four main objectives set out at the start of the study, namely, to give a detailed description of the OECD Governance Index used in this study, and, using descriptive statistics, to show how the different firms, belonging to either Anglo or Continental European traditions, comply with the OECD Corporate Governance Code; to report on the findings of the study, using bivariate or correlational analysis and to discuss the significance of these findings in terms of how corporate governance affects risk-taking, credit rating and cost of capital; to report on the findings using multivariate regression analyses and to discuss the significance of these findings, with respect to how corporate governance impacts risk-taking, credit rating and cost of capital; and lastly to report on the robustness or sensitivity of these findings.

This chapter is broken down into sections. Section 6.2 outlines the descriptive statistics of the level of compliance of the full sample of firms with the OECD Corporate Governance Index. This section shows the firms' level of compliance with OECD corporate governance. The findings reveal a high level of compliance among all firms, consistent across the five years studied. Section 6.3 looks more closely at the comparison between Anglo-American and Continental firms, finding that they differ with respect to compliance on some of the CGI characteristics, yet they all increased their levels of corporate governance over the five years studied. In Section 6.4 three models are used. Model 1 measures risk-taking in terms of R&D/Assets as a dependent variable, R&D/Sales as a dependent variable and R&D expenditure as a dependent variable; risk-taking is also measured based on ROA as a dependent variable. In this model, to measure credit rating, S&P was used as a dependent variable. Cost of capital was also used as dependent variable. In all of these, CGI is used as the independent variable. Model 2 uses ownership structure as an independent variable and risk-taking, credit rating and cost of capital as dependent variables. Model 3 uses board structure as an independent variable, and risk-taking, credit

rating and cost of capital as dependent variables. These variables were used in the following subsections of Section 6.4.

Section 6.4.2 examines CGI and risk-taking, while Section 6.4.3 measures CGI and credit ratings. Section 6.4.4 shows the relationship between CGI and cost of capital. The findings reveal that CGI compliance lessened risk-taking. Section 6.5.1 and its subsections examine firm financial performance. Section 6.5.2 shows the summary descriptive statistics of the firm and country-level control variables based on all (200) firm-year observations. It reveals that although the firm sizes vary, their performance was not outside the normal range. Section 6.5.3 also shows that although there are differences among the firms, their performance is within the normal range.

Section 6.6 reports on the bivariate and correlational analysis in terms of internal characteristics of the firms and how corporate governance affects risk-taking, credit rating and cost of capital.

Section 6.7 reports on the multivariate analysis in terms of how independent and control variables impact firm performance as seen in risk-taking, credit rating and cost of capital, and in terms of how independent and control variables impact firm performance as seen in risk-taking, credit rating and cost of capital. The subsections of Section 6.7 deal with the relationship between the OECD mechanisms and risk-taking as measured by R&D/Assets, R&D/Sales, R&D expenditure and ROA. Credit rating is assessed in terms of the impact of characteristics of CGI on firm performance and in terms of the relationship between ownership structure and board structure on credit rating; and in terms of the impact of compliance with OECD principles on cost of capital. Section 6.8 discusses the robustness of the study, while Section 6.9 highlights the chapter summary.

## **Chapter 7: Conclusions**

### **7.1 Introduction**

This chapter provides the conclusions for the study carried out in this thesis, and sets out to achieve five major objectives. First, this chapter summarises the findings of this research study, regarding the levels of compliance with, and disclosure of, the corporate governance principles in the 2004 OECD Corporate Governance Code by firms following the Anglo-American tradition and the Continental Europe tradition; and findings of the effect of corporate governance on corporate risk-taking, credit rating and cost of capital in firms belonging to the two traditions. The findings would show how companies belonging to different traditions are able to achieve compliance, and how this compliance through different corporate governance mechanisms may impact firm performance as evidenced through risk-taking, credit rating and cost of capital. Second, this chapter examines and discusses the policy implications of these findings. Third, it cites the contribution of these findings to the field. Fourth, this chapter discusses the limitations of the study. Fifth, it highlights recommendations and avenues for future research.

The remainder of the chapter is organised as follows. Section 7.2 presents a summary of the research findings. Section 7.3 discusses the implications of this study for policy decisions. Section 7.4 discusses the contributions of this research for the field. Section 7.5 discusses the limitations of the study. Section 7.6 highlights recommendations based on the findings of this study, and recognises avenues for future research, with the expectation that there will be further improvement on these research findings. Section 7.7 provides a chapter summary.

## **7.2 Summary of research findings**

This chapter reports on the findings of this study relative to the objectives outlined in Chapter 1. The original study objectives were to assess the level of compliance with the corporate governance principles of the 2004 OECD on firms from two different traditions, to ascertain whether corporate governance is related to risk-taking, whether corporate governance is related to credit rating, and whether corporate governance is related to cost of capital. The study set about to achieve these objectives in a logical and consistent manner. It therefore outlined the history of how corporate governance developed and how various principles came to be included, and then showed how this became a global concern attracting the attention of companies in many countries. The study then explained the methodology used and the findings of the relationship between corporate governance as represented by a corporate governance index and firm performance as represented by various proxies. The overall finding of this study is that the more firms embrace corporate governance, the better their financial performance is, and is considered within the context of the different countries and the traditions that they follow, as well as cultural, legal and accounting systems used in the different countries. The study's implications, limitations, recommendations and avenues for future research are also covered in this chapter, as detailed below.

Chapters 1, 2 and 3 discuss the historical development of corporate governance under the auspices of the OECD, but also through the efforts of national organisations; for example, the U.K. Cadbury Report Commission, the U.S. Sarbanes-Oxley Act, and other national efforts, as individual countries tried to improve corporate governance in response to some high-level scandals that occurred within their economies. Going back to 1997, the first Principles of Corporate Governance were put forward by the OECD, as a means of meeting its mandate to provide a strong foundation for economic relations among nations. During this period, England and the United States had started bolstering their corporate governance. In response to globalisation and the need to attract greater investment,

countries in Europe and America, and other Western countries, as well as the Middle East and Asia, demonstrated their willingness to use the OECD Principles of Governance to strengthen their corporate governance. By 2004, the OECD had put forward its 2004 Principles of Corporate Governance, with a goal of giving nations with civil law and common law traditions, from varied accounting systems, different cultures, and both the stakeholding and shareholding models of corporate governance (Aguilera & Cuervo-Cazurra, 2004), the opportunity to become compliant. This was based on the recognition that with common standards of compliance, prospective investors have a way of determining which countries present little risk and which are too risky to invest in. The significant differences among the countries studied reveals the extent to which adoption of the OECD 2004 Principles of Governance have become an internationally acceptable set of governance rules influencing a wide variety of countries (OECD, 2004, Principles; Krenn, 2014).

However, by looking at how these firms use different corporate governance mechanisms, and measuring their financial performance in how they perform on risk-taking, credit rating and cost of capital, this study was able to identify the types of firms that performed better and to see how well they complied with the 2004 OECD Principles of Corporate Governance. This was important to the field, as there was a dearth of information available on how different corporate governance mechanisms used by companies affects their risk-taking, credit rating and cost of capital. This approach helps this study show how risk-taking, credit rating and cost of capital, aspects of firm performance, have been included by the different corporate governance mechanisms.

This study chose to examine and compare the economic performance of 200 firms drawn from 10 OECD countries, with five of the countries using the Anglo-American accounting system and five using the Continental European accounting system. This in effect meant that there were 20 large companies from each country. These firms were studied for five years after the 2007-08 global financial crisis. The fact that the companies were drawn

from different countries with different traditions, and the fact that the study was conducted over a period of five years after the financial crisis, allowed the research to remove extraneous factors that may prevent as clear an examination as possible of the impact of the use of corporate governance mechanisms on financial performance. Drawing information from the internal annual reports and websites of these firms, as well as from the external annual stock market and financial accounting performance variables, this study reveals that the corporate governance mechanisms affected corporate financial performance as evidenced in risk-taking, credit rating and cost of capital. It was important to use a full five years of stock market and accounting information to provide balanced panel data analysis, with information for consecutive years (Yermack, 1996). This information was obtained from the firms' internal annual reports and websites.

Corporate governance was represented in this study by the mechanisms of corporate governance index, ownership structure and board structure, and firm performance was represented by risk-taking, credit rating and cost of capital. The research therefore examined how each of the corporate mechanisms impacted each of the firm performance measures. While some studies have examined corporate governance and some elements of firm performance, others have examined firms of different sizes, and from different traditions and cultures. Various studies on the relationship between corporate governance and firm performance show a positive relationship. This is confirmed by our findings, but what is further highlighted is the importance of using a corporate governance index (CGI) as opposed to individual corporate mechanisms. The rationale for using a corporate index or code is the fact that countries differ in terms of accounting tradition as well as political, legal and cultural factors (Schleifer and Vishny, 1997; Licht, 2004; Holm and Zaman, 2012). Therefore, the findings from this study are based on using a corporate governance index, or CGI, as well as noting the aspects of corporate governance mechanisms, and the different aspects of ownership structure and board structure.

The important questions that were raised were whether firms that follow the Anglo-American system, based on common law, perform better or worse in terms of risk-taking, credit rating and cost of capital than firms following the Continental European system. Other questions were also raised with respect to the kinds of theories that appear most influential in explaining corporate governance.

The subsections below explain the research findings. Subsection 7.1 is the introduction, while Subsection 7.2 gives the research findings, and is further broken down into Subsections 7.2.1 to 7.2.5. Subsection 7.2.1 summarises the research findings based on the OECD Corporate Governance principles used with the full sample. Subsection 7.2.2 summarises findings based on the level of compliance with OECD Corporate Governance Principles and based on country differences. Subsection 7.2.3 summarises the findings based on the relationship between CGI and risk-taking, credit rating and cost of capital. Subsection 7.2.4 presents findings based on the relationship between ownership structure and risk-taking, credit rating and cost of capital. Subsection 7.2.5 summarises findings based on the relationship between board structure and risk-taking, credit rating and cost of capital. Subsection 7.3 presents the research implications, while Subsection 7.4 provides an account of the contributions of this research. Section 7.5 highlights the research limitations, while Subsection 7.6 summarises the research recommendations and avenues for future research.

### **7.2.1 Findings based on the OECD corporate governance principles that were used with the Full sample**

Setting up the 2004 OECD corporate governance principles for this study required selecting some of the principles that have been identified as critical to the wellbeing of stakeholders. These principles were rights of shareholders; equitable treatment of shareholders; the role of stakeholders in corporate governance, disclosure and transparency; and responsibilities of the board. For each of these principles, several



questions were asked to ensure that different dimensions of the principles were covered. Therefore, while the majority of firms in some areas showed high compliance on some dimensions, others showed low compliance, based on the different traditions that the firms follow.

In terms of rights of shareholders, the findings reveal that all firms increased their level of compliance with all dimensions of this principle over the five years of this study, 2010 to 2014. Equitable treatment of shareholders differed among firms, but the differences were relatively small, with all firms showing that their average level of compliance was around 88.5%, with small fluctuations.

In terms of the role of stakeholders in corporate governance, disclosure and transparency, and responsibility of the board, the firms all showed that they were compliant, but they differed with respect to the dimensions with which they complied. While the firms had similar compliance in terms of employee safety and welfare, they differed in terms of mentioning key stakeholders and environmental issues. Yet, as a group, the firms were compliant in terms of the role of stakeholders. However, there was disparity in the level of disclosure and transparency: while some firms complied with disclosing ownership, others did not disclose management ownership, and while there was 100% compliance with disclosing financial reports in a timely fashion from 2010 to 2014. In terms of responsibilities of the board, most of the firms showed high levels of compliance.

The findings show that these principles as included in the Corporate Governance Index (CGI) in this study were generally adhered to by the full sample, and that the general theories that supported these were agency, stewardship, resource dependence, legitimacy and institutional theories. These theories also support the relevance of including these principles in the CGI.

Agency theory is used to explain the relationship between owners/shareholders and managers, which is the principal and agent relationship (Conheady, McIlkenny, Opong

&Pignatel, 2015; Kiel & Nicholson, 2003). Therefore, agency theory applies to the responsibilities of the board (Abdullah & Valentine, 2009). Stewardship theory describes the role of the board, as the board ensures that it is a good steward for the shareholders. But the board of directors can also be described in terms of resource dependence theory, as individual board members contribute resources to the firm (Abdullah & Valentine, 2009; Letting et al., 2012). Independent board members also contribute resources in terms of the training they provide (Chen & Roberts, 2010). Legitimacy theory is used when the role of stakeholders is investigated, as it deals with firms' concern with the safety and welfare of workers, environmental issues, long-term employee incentive plans and key stakeholders in general. The firms' institutional legitimacy was also seen in how they demonstrate their concern for social values (Chen & Roberts, 2010). Therefore, the findings reveal that the principles included in the CGI in this study were relevant to adherence to the 2004 OECD Corporate Governance Principles.

This CGI contains relevant principles, namely, the importance of shareholder rights, equitable treatment of shareholders, the role of stakeholder in corporate governance, disclosure and transparency and responsibilities of the board. Our findings reveal the degree to which corporate governance has an impact on these firms in terms of risk-taking, credit rating and cost of capital, as measured by different firm and country characteristics.

### **7.2.2 Findings based on the level of compliance to OECD CGI based on country difference**

The goal of Subsection, 7.2.1 is to show the compliance level of the full sample of 200 firms. In Subsection 7.2.2., the objective is to show the differences between firms based on the level of compliance between countries. Therefore, the study examines the level of compliance for the pooled sample, as well as the percentage levels of compliance for each year under study.

When the OECD CGI was applied to all the firms, nation by nation, the findings reveal no major variations among the firms. Over the five years, the level of compliance among the pooled sample increased, with only small deviations. But when the firms were compared according to country membership, the findings reveal that the overall level of compliance was highest among the firms in the U.K. and France over 44%, lower in Germany to about 42%, lower still in Italian firms to a little above 41%, and still lower in Irish firms, to a little below 41%. These firms had compliance levels that were higher than the mean level for the pooled sample. However, the level of compliance for U.S. firms was a little above 39%, which was about the mean for all firms in the pooled sample. Firms in Spain had a compliance level of just below 37%, while Japanese firms had the lowest compliance level, of just below 27%. Over the five years, the firms with the highest levels of compliance showed only small changes. It was also shown that compliance with the OECD governance practices was strong among the firms, and were related to country characteristics

The findings also show that compliance was strong for these firms, and was based on corporate governance provisions that the countries practiced because of their traditions.

In terms of compliance with the principles related to the quality of notice to call the shareholders meeting for dividends, to the chair of the firm attending board Annual General Meetings, to having a list of board members that attended meetings available, to having firm anti-takeover defences in place, and to having board members with more than 25% of shares outstanding, firms in the Continental European tradition far outscored those firms in the Anglo-American tradition

However, the firms in the Anglo-American tradition scored higher in levels of compliance with the OECD Corporate Governance Principles than the firms in the European Continental tradition on principles of equitable treatment of shareholders; the role of stakeholders in corporate governance, disclosure and transparency; responsibilities of the board and the rights of shareholders.

The findings also reveal some principles of compliance had greater significance to firms in Anglo countries than to those in Continental countries, and vice versa. It was significant that firms from both traditions increased their level of compliance over the duration of the study.

### **7.2.3 Findings based on the relationship between CGI and risk-taking, credit rating, and cost of capital**

In studying how corporate governance impacts risk-taking, credit rating and cost of capital, three models were developed. While the first model measured risk-taking with respect to R&D/Assets, R&D/Sales, R&D expenditure and ROA as dependent variables, credit rating was measured as S&P, and cost of capital as itself. CGI was used as the independent variable in the first model. The second model used ownership structure as the independent variable, and measured risk-taking, credit rating and cost of capital as the dependent variables. In the third model, board structure was the independent variable, and risk-taking, credit rating and cost of capital were the dependent variables.

The findings reveal that there was a significant relationship between CGI as an independent variable and risk-taking as measured by proxies. The hypothesis on this relationship, Hypothesis H1a, held that there is no statistically relationship between CGI and risk-taking. But the findings reveal that there is a significant relationship; therefore, the null hypothesis is not supported, as an increase in CGI brings about a decrease in risk-taking. The significant relationship was negative, in terms of the proxies of R&D/Assets, R&D/Sales and R&D expenditure, but in terms of ROA, it was shown that there was a strong significant relationship between CGI and risk-taking.

For the relation between CGI and risk-taking based on R&D/Assets, R&D Sales, and R&D Expenditures, the overall findings for all firm years was negative and significant. However, the relation between CGI and risk-taking based on ROA showed a strong significant relation. The findings support the position that compliance with CGI lessens risk-taking.

The amount of risk that firms undertook was strongly influenced by the corporate governance in place. Firms with good governance demonstrated good investment rating, suggesting that when management displays good governance, this is reflected in the performance of the firm. The research findings show that some of those firms that were able to improve their corporate governance over the five years also showed an improvement in their level of risk-taking. This finding supports the agency role of management, as the goal of management is to improve the wellbeing of the organisation, and this involves making the firm less risky. Therefore, fulfilling its agency role, firm management tended to improve its corporate governance, with the aim of receiving a higher rating for the firm. While some researchers feel that improved corporate governance influences firm performance (Elbannan, 2009; Ashbaugh-Skaife et al., 2004), others feel that this is not necessarily the case (Shleifer and Vishny, 1997). Ntim et al. (2013), looking at corporate governance and risk-taking, conclude that there is no significant difference in corporate governance in firms in terms of risk disclosure. This raises the question of whether increasing corporate governance impacts risk-taking. Ntim et al. (2013) show that there is no significant impact of corporate governance on risk-taking. But Gompers et al. (2003) show that a corporate governance index does have a significant impact on risk-taking, suggesting that the use of a corporate index is more relevant to organisational performance than using only one measure of corporate governance. It should also be considered that when comparing different countries, it is possible that country-specific factors can be seen to have an impact on what corporate mechanisms are most used, and how they affect firm performance (Gaeremynck, 2006).

The relationship between CGI and credit rating was found to be positive. The implication here is that when there is an increase in disclosure, there is also an increase in credit rating. This finding for all firm years is measured by S&P, and is both positive and significant, supporting the hypothesis in this study and the findings of other studies.

The research findings also reveal a positive relationship between corporate governance and credit rating, and that when corporate governance improved over the period under study, this had a positive impact on the investments in the firms. These findings are in line with previous studies. For example, Alali et al. (2012) find that firms with improved corporate governance demonstrate improvements in their investment grading. However, one research study shows that this is more apparent among smaller than larger firms (Alali et al., 2012).

The research findings also reveal that the Corporate Governance Index was related to higher stock ratings among most of the firms studied. This is in line with research showing that in four elements of corporate governance, namely, CGI, type of ownership structure, board structure, and degree of financial transparency, firms were found to reveal higher corporate performance (Ashbaugh-Skaife et al., 2006). Although there were differences between the firms in terms of traditions, the research findings show a positive relationship between CGI and credit ratings.

The findings on the relation between CGI and cost of capital reveal that the hypothesis was proven. According to this hypothesis, “There is no statistically significant relationship between corporate governance index and cost of capital”. The findings reveal that the relationship is strongly significant and negative.

Our findings reveal that cost of capital as performance of a firm was clearly related to corporate performance; this was the case across all firms. The rationale is that if firms are good risk takers and have good credit, they will be able to borrow money or attract investment easily. This would mean that they would represent firms that would have investors willing to put money into. Risky or speculative firms, or firms with poor credit, would find it harder to borrow money, which would mean that they would have to pay more to borrow. Corporate governance was seen to affect credit rating and be influenced by the level of risk firms engage in. This finding is in line with previous research in this area: in their study of 4,500 firms in 50 countries between 2006 and 2012, and using as

proxy for corporate performance transparent disclosure, minority shareholder protection and corporate policy, Griffin et al. (2014) show that adherence to CGI is positively related to firm performance. Al-Malkawi et al. (2014), using evidence from the stock market, show similar finding. Our findings are therefore supported by other research showing that adherence to corporate governance has a positive effect on corporate performance.

#### **7.2.4 Findings based on the relationship between ownership structure and risk-taking, credit rating and cost of capital**

There was a relationship between block ownership and risk-taking when measured in terms of R&D/Assets, R&D/Sales and R&D expenditure.

The findings reveal that block ownership in effect gives such owners control over management, and can therefore be seen as having either a negative or positive impact on risk-taking, depending on the particular tradition in which the firm is located. Block ownership in the Anglo-American system, where the common law legal system is used, protects the rights of minority shareholders, so that large block holders are seen as not having a negative impact on risk-taking. In the Continental European system, which is based on civil law, large block holders have the power to influence management to take strategies that run counter to the wellbeing of the firm. Firms with more than 5% block ownership engage in higher risk-taking than other firms. In other words, block holders in the civil law tradition were found to have a tendency to promote more risk-taking.

These findings are in keeping with previous research showing that block holders have the power to gain privileges and benefits that small shareholders do not (Barclay and Holderness, 1989), but that some companies repurchase these shares at a price above the market value to prevent proxy fights. Therefore, risk-taking is often negatively related to block holders, particularly in countries which are based on civil law (Bebchuk, 1999). These countries tend to have higher risk-taking than common law countries.

The findings reveal a relationship between block ownership and credit rating, as shown in previous studies. The findings reveal that where block holders had ownership in a firm, this was seen as having a negative impact on credit rating. The rationale for this is that these block holders could force management to take positions that run counter to shareholders' interests. Again, this could be seen as involving agency conflict. The research findings show that fewer block holders were related to less risk-taking. This was based on the particular legal system in which the firm operates.

These findings are in line with previous research. For example, it was shown that where block holders owned at least 5% of stock in a firm, this had a negative impact on the firm's credit rating. Since block holders tend to have more control, influence and information than smaller investors, this represents an agency risk and information risk for the firm (Matthies, 2013). This is worse in firms with civil law legal systems, where there is not as much protection for minority rights.

Our findings reveal a strong positive and significant relationship between block ownership and cost of capital, suggesting that increased block ownership leads to increased cost of capital.

Previous research reveals that block ownership could have negative or positive effects on the cost of capital. Corporate governance was seen to have an effect on the costs of borrowing capital or investing in firms. When block holders were family members, this sometimes led to higher cost of capital, since family members often did not invest their own capital. This is because they preferred to borrow, because block ownership was perceived as a credit risk (Tran, 2014).

The findings also reveal that when there was an increase in block ownership, there was a tendency for a reduction in voluntary disclosure. It is possible that some block holders use this approach to obtain more information about firms than do other shareholders. This



finding is in line with previous research showing that block owners carry out greater monitoring of managers (Ntim et al., 2013).

However, the research findings also reveal that both large and small shareholders had an interest in promoting corporate governance and wanted more monitoring of management. It was also revealed that block holders were interested in getting as much information as possible about their firms, as they may have been interested in using the information to their advantage and against the interest of small shareholders. The finding with respect to block owners and cost of capital reveals that in cases where block holders want more information, they may tend to reduce voluntary disclosure, while in other cases, they do the opposite. On the other hand, it was also noted that some block holders and other investors, both large and small, wanted more monitoring. Therefore, there were different costs associated with more and less corporate governance. According to Anderson and Reeb (2004), some founding families that are block holders tend to have lower costs of capital than firms that do not have block holders that are founding families.

These research findings reveal that there is no statistically significant relationship between block ownership and cost of capital; this may have been based on the fact that block holders could be drawn from various types of investors, and that they have different incentives for investing. Consequently, these incentives have differing effects on the cost of capital for the firm.

The findings reveal no statistically significant relationship between institutional ownership and risk-taking measured by R&D; however, there is a strong negative statistically significant relationship with ROA. In fact, institutional owners are unlikely to invest in firms that display poor corporate governance, since these institutions are usually firms that are responsible for pension funds and the like. These institutional owners usually invest in companies that pay fair dividends, and not in firms with high levels of risk. The rationale is that these institutional owners have fiduciary responsibilities to their clients and so would

not take a chance by investing in risky or speculative firms. This is in line with previous research showing institutional owners as risk-averse (Tran, 2014), and as having greater incentives to monitor the behaviour of management. It follows that institutional owners would invest in firms with high corporate governance, and where risk-taking is low. Institutional owners would be interested in monitoring management and ensuring that there is no opportunity for management to display opportunistic and risky behaviour. At the same time, institutional owners may not be likely to invest in monitoring companies, which would suggest that institutional owners would very likely go for firms that are already well managed and have a record of fair dividends (Tran, 2014).

The findings reveal a strong significant relation between institutional ownership and credit rating; according to the null hypothesis, there is no statistically significant relationship between institutional ownership and credit rating. These findings show that institutional owners invest in firms with higher bond earnings and lower bond yields. Since institutional owners are responsible for other people's investment, it would follow that they would invest in firms with better credit ratings and good corporate governance. As mentioned above, there was also greater monitoring of management by institutional owners, so as to ensure that management did not display opportunistic behaviour. In addition, the findings reveal that institutional owners contribute to higher bond yields.

Some of the findings are in line with previous studies. According to Bhojraj and Sengupta (2003), institutional owners tend to invest in firms with high bond yields and high bond ratings, but these authors discovered that while institutional owners influence bond yields and ratings, they could also be influenced by bond yields and ratings. Alternative theorising points out that although there is a positive relationship between institutional ownership and credit rating, there is also a negative relationship between institutional ownership and credit rating.

This study reveals a statistically positive and significant relationship between institutional ownership and cost of capital. The findings reveal that firms with institutional owners tend to invest in firms with strong corporate governance, and that firms with strong corporate governance often have lower costs of capital. In other words, firms with institutional owners usually have various elements of corporate governance, including board independence, and also have strong financial performance. These firms also pay good dividends. More institutional owners lead to a decline in costs of capital over time.

These findings are in line with previous studies. In one study, over a period of ten years, firms were seen to exhibit strong governance mechanisms, in the form of board independence, and those with institutional ownership also revealed that costs of capital declined over time, while these companies increased their value; however, this positive relationship was only applicable to a certain level of institutional ownership (Pham et al., 2012). But this researcher noted that firms had to invest in improving their corporate structure, as failure to do so could lead to risks (Pham et al., 2012).

There was no significant relationship between director ownership and risk-taking. The research findings confirm hypothesis 4, and revealed that there is no statistically relationship between the director ownership and risk-taking. Previous research reveals that there is much risk-taking when directors own a large portion of a firm's shares, and this was found in some Asian firms, where there was less monitoring as directors were able to promote their own interests. This represents high risk for the firm. However, when director ownership was small, there was less risk.

This is in line with previous research. According to Chen and Jaggi (2000) and Ho and Wong (2001), in Hong Kong firms when owners are directors, it follows that there is not as much monitoring of management. In this setting, there is risk of management takeover (Shleiger and Vishny, 1996). Director/managers are more likely to carry out their agency responsibilities.

Both when firms have less than and more than 50% director ownership, there are different relationships between director ownership and risk-taking, which is seen as a curvilinear relationship (McConnell and Servaes, 1990). This relationship is also evident in the United States and the U.K., but there are protections offered to minority shareholders, which makes these firms more attractive to invest in than similar firms in civil law countries.

Using the different proxies for credit rating, it is shown that there is no statistically significant relationship between director ownership and credit rating in this study. This is supported by previous research findings, which also revealed no statistically significant relationship between director ownership and credit rating. These findings also reveal that firms with greater shareholder rights also have lower credit ratings. The rationale is that if shareholders have more power, the firm could also greater risks, which could lead to lower credit ratings. This is in line with some previous research (Ashbaugh et al., 2006). But other previous studies show the reverse, with Gompers et al. (2003) showing that firms with greater shareholder rights tend to have greater value contributing to higher credit ratings.

In this study, in terms of the relationship between director ownership and cost of capital, the findings reveal a negative significant relationship between the independent and dependent variables.

The findings also show that as the firm faces higher risks, the cost of borrowing increases, making the cost of capital more expensive. This is in keeping with some studies and contrary to others; as Pham et al. (2012) maintain, poor corporate governance tends to be associated with higher costs of capital (Ashbaugh et al., 2006). It was also shown that when credit ratings are high, cost of capital is low (Gompers et al. (2003).

### **7.2.5 Findings based on the relationship between board structure and risk-taking, credit rating, and cost of capital**

Subsection 7.2.5 summarises how board variables, namely board size, independent directors, board diversity and frequency of board meetings, impact risk-taking, credit rating and cost of capital. Board size, the number of independent directors, board diversity and frequency of board meetings all have an impact on the monitoring of management.

The findings reveal a statistically negative significant relationship between board size and risk-taking measured by R&D/Sales, and an insignificant relationship between board size and risk-taking measured by R&D/Assets, R&D expenditure and ROA. The findings reveal no significant relationship between board size and credit rating, or between board size and cost of capital.

The findings reveal that boards that are the right size for carrying out their role effectively, namely, monitoring and motivating management, and ensuring that directors provide pertinent and relevant information to shareholders, ensure that risk-taking is kept to a minimum, that credit rating is protected through better corporate governance and that the cost of capital decreases over time. These findings are in line with previous research, which shows that the right size of board is important (Davidson et al., 1998), and which shows that large boards hinder communication and decision making (Yawson, 2006). However, Wang (2012) shows that different board sizes impact differently on risk-taking. Some researchers believe that larger boards lead to higher firm value (Pham et al., 2012), while others believe that board size does not have an effect on credit rating and firm value (Upadhyay and Sriram, 2011). The research findings support the hypothesis that there is no statistically significant relationship between board size and risk-taking (measured by R&D/Assets, R&D expenditure and ROA), board size and credit rating, and board size and cost of capital.

Director ownership and risk-taking measured in terms of R&D/Assets show that in some instances, there is a strong positively significant relationship. The findings of this study report a strong relationship between independent directors and risk-taking in terms of R&D/Sales. There is also a strong positive relation between independent directors and risk-taking in terms of R&D Expenditure.

Independent directors were seen as having an important impact on risk-taking. This is in keeping with previous research which shows that independent directors are more objective, and bring more transparency to an organisation (OECD, 2004). Independent directors were also seen as being accountable to shareholders, as they oversee management and can prevent excessive risk-taking (Page and Spira, 2005), help promote a firm's credit rating by strengthening corporate governance (Ashbaugh-Skaife et al., 2006), and reduce the cost of capital when corporate governance is strong (Ashbaugh-Skaife et al., 2006).

The findings reveal that there is a statistically significant positive relationship between independent directors and credit rating in all firm years. The rationale for this is found in previous studies which point to independent directors as promoting corporate governance through their role of monitoring management (Davidson et al., 2005; Alali, 2012; Ashbaugh-Skaife et al., 2006). Strong corporate governance is associated with higher credit ratings.

Our findings reveal a negative significant relationship between independent directors and cost of capital. Previous studies argue that independent directors have a positive impact on firms by adding to the firm's value (Ashbaugh-Skaife et al., 2006).

Board diversity was examined in terms of risk-taking, credit rating and cost of capital. The findings report a strong positive relationship between board diversity and credit rating. The relationships between board diversity and both risk-taking and cost of capital are not significant.

The findings reveal that many European firms have noticeable board diversity in terms of gender. Firms with greater diversity were also larger and more prosperous. They had less risk-taking, greater credit ratings and lower cost of capital. Yet, the findings support the hypothesis that there is no statistically significant relationship between board diversity and risk-taking, board diversity and credit rating, and board diversity and cost of capital.

Previous studies give some insight into these findings. Gender diversity is noticeable in Europe because of legislation mandating female representation on boards (Hoel, 2008; Sealy and Vinnicombe, 2012). However, there were conflicting reports on actual experience as to whether female board members contribute to less risk-taking, higher credit rating and reduced cost of capital (Tanaka, 2014). However, de Cabo et al. (2012) show that female board directors lead to less risk-taking. The application of agency theory and resource theory supports board diversity.

A significant relationship between how frequently board meetings are held and these dependent variables of risk-taking, credit rating and cost of capital. Research shows that when board meetings are held frequently, there is more monitoring of management, which has the effect of decreasing the cost of debt (Anderson and Reeb, 2004). Similarly, Lorca et al. (2011) find that more meetings and more audit committees contribute to lower debts. Besides, those who held debts in the particular firms welcomed more frequent board meetings (Anderson and Reeb, 2004).

### **7.3 Research implications**

From this study, several implications can be drawn with respect to the use of the OECD Principles of Governance and its applications to the various countries. First, it was shown that all the different companies drawn from Anglo-American and Continental traditions tend to use many of the same corporate governance, although with different levels of importance. One implication is that regardless of the company, country, and tradition or customs, corporate governance is seen as an important concept for improving firm

performance. Another implication is the levels of compliance increased steadily for all firms during the period of this study. This implies persistent efforts by the management of these companies and the establishment of corporate governance mechanisms in these countries over the years.

Third, this research study set out to ascertain whether using different models would make a difference in the empirical findings. The study compared the three models. In Model 1, the Corporate Governance Index was used as an independent variable, and the dependent variables were risk-taking, credit rating and cost of capital. These dependent variables were measured in terms of proxies. Risk-taking was measured in terms of the proxies R&D/Assets, R&D/Sales and R&D expenditure, and risk-taking as based on ROA, all of which were dependent variables. In studying credit rating, S&P was used only in analysing the dependent variable. Cost of capital was another dependent variable. In short, while Corporate Governance Index was used as the independent variable, proxies for risk-taking, as well as credit rating and cost of capital, were dependent variables.

Model 2 used ownership structure as the independent variable, and the dependent variables were risk-taking, credit rating and cost of capital. Model 2 followed the same pattern and used the same proxies as Model 1. Credit rating and cost of capital were treated individually, as they were in Model 1.

Model 3 resembled the other two models in format, with board structure serving as the independent variable and with the same dependent variables of risk-taking, credit rating and cost of capital. The same proxies were used as in Models 1 and 2.

Fourth, the findings reveal that the relationship between Corporate Governance Index and risk-taking, credit rating and cost of capital is similar for all models. The general finding is that despite country differences, there is a close relationship between corporate governance and firm financial performance. A comparison between the three models shows very little



difference in how firm financial performance is affected by the level of corporate governance in the respective firms.

Another finding is that the use of different proxies for firm performance reveals that corporate governance does have an important impact on firm performance. Also, the different corporate mechanisms are important for the respective traditions, and have significance for companies operating in these traditions.

This research has important implications in terms of the methodology used. First, this study demonstrates that the methodology used could have had an impact on the research findings. Second, the nature of the research was time-consuming when composite corporate governance mechanisms are being constructed. Yet, there is great value in conducting research, compared to using a single corporate governance mechanism. The rationale for creating a corporate governance mechanism such as the Corporate Governance Index is that it brings together several corporate governance variables. This makes the corporate governance composite much stronger and of better in measuring corporate governance. Additionally, different aspects of the principles allow the researcher to be much more specific in reporting the findings.

There are implications here for all the firms and countries involved in this study. For example, decision and policy makers in both traditions are able to see the findings of this study and observe how they differ from other studies. Policy makers related to the use of corporate mechanisms are able to observe how well they fared in this study, and they could also learn from how other decision and policy makers operate in other countries. Knowing the advantages and disadvantages of certain corporate mechanisms could be instructional and could help countries improve their corporate governance structures. Developing countries can observe what more developed countries are doing, and on this basis develop their corporate governance structures to facilitate financial performance among their firms. Similarly, firm decision and policy makers from both traditions are able to observe

what works well for them and for others. By imitating measures used by some firms, individual firms could improve their performance.

Another implication is that it is possible that some firms would adopt voluntary compliance regimes based on what they observe from other firms. In some studies by Aguilera and Cuervo-Cazurra (2009), some firms in countries that have adopted the U.K. voluntary compliance style demonstrated that they adopted the 'comply or explain' regime. Therefore, Aguilera and Cuervo-Cazurra (2009) point out that although there has been criticism that the voluntary nature of some corporate codes are limited in improving corporate governance practices, in reality, firms voluntarily adopting these codes helps promote corporate governance. One of the implications of this study is that some firms may be motivated to voluntarily adopt practices that they see as important for improving firm performance. These firms would very likely be motivated to undertake more thorough implementation of corporate governance mechanisms.

Attracting new investors is one of the things that this study could encourage. This study has shown how improving CG will reduce risk, and how with reduced risk firms can improve their financial performance. An implication of this study is to show countries how they could use this scenario to promote more investment in their firms. This study could also provide a guideline showing countries how they could reduce risk, thereby encouraging more investors to locate in them. By showing that good governance could reduce the cost of capital, governments and firms could also appeal to investors.

However, despite the fact that the findings indicate that corporate governance has improved over the years of this study, there are noticeable differences among the firms studied. Further investigation also shows that the differences in corporate governance standards emanate from the fact that firms differ in terms of size, industry, country characteristics and their particular tradition, whether Anglo-American or Continental. The rationale behind these differences in compliance among firms is based on some firms not having as

many resources as others to implement corporate governance mechanisms. Complying with corporate governance involves corporate governance mechanisms that may be costly in terms of time and money, which may preclude smaller firms from using these practices. One of the findings in Chapter 6 is that block holding is statistically significant, but not associated with firm size and corporate governance index. It is apparent from the finding that governance needs in the firms sampled appear to be based more on ownership. This may suggest that firms with different ownership styles require different levels of flexibility in their corporate governance mechanisms.

There are implications for different governments. By looking at the findings, it is possible that some governments may think of updating their firms' corporate governance mechanisms. More emphasis on corporate governance mechanisms could help nations make investment in their firms more attractive. For example, by improving the overall perception of firms' financial performance in their countries, governments could help encourage more investors to consider them. The implication here is that governments must keep updating their corporate governance mechanisms.

#### **7.4 Research contributions**

Previous studies reveal that large firms usually get favourable ratings through the subjective rankings of analysts (Beattie et al., 2004), and with fewer and narrower reportings on corporate governance rankings, it is difficult to generalise across companies. For some companies, ranking of some corporate mechanisms is less relevant for some companies than others. Besides, different corporate governance mechanisms and systems are more commonly used in some countries than in others (Andreasson, 2009). Yet, even if it were possible to standardise corporate governance rankings, this still would not solve the problem of having a common measure of corporate governance. The reason for this would be that different countries have different governance structures that are influenced by institutional, cultural and contextual differences (Andreasson, 2009).

Firstly, previous studies have made use of corporate governance rankings to compare corporate governance in different countries. Some of these studies have made use of some governance mechanisms, but as noted above, some corporate governance mechanisms are relevant to some countries and not to others. The major contribution made by this study involves the use of the corporate governance index that was manually created and included a wide variety of corporate governance mechanisms that have wide applicability among the countries studied. In this way, taking a less narrow view of corporate governance rankings allows for greater ability to compare companies from different countries with different traditions.

Secondly, previous studies have looked at the level of compliance among firms. However, the contribution that this study makes is augmented by the fact that it fills this gap in the existing literature by offering, for the first time, direct evidence on the levels of compliance with corporate governance among firms in different countries based on their traditions, cultures, legal systems and practices. This study has made it possible to compare levels of corporate governance compliance among different countries by using different measures that could test compliance in many ways.

Thirdly, although previous studies have investigated corporate governance using different mechanisms, this study makes the first comparison of findings based on corporate governance as evidenced through ownership structure and board structure. By looking at the structures that make up the boards and ownership of firms, this study examines the impact of these forms of ownership and board structures on firm performance.

Fourthly, previous studies have made looked at firm performance, but this study has made a notable contribution by dealing with firm performance as measured by risk-taking, credit rating and cost of capital. The fact that the study shows the association between corporate governance and risk-taking, corporate governance and credit rating, and corporate

governance and cost of capital is noteworthy as it looks at performance in terms of corporate governance and these measurement of risk.

Fifthly, this study is unique in that it contributes to the literature by examining how legal and accounting systems, cultural aspects of different countries, as well as the corporate governance mechanisms can influence the financial performance of firms.

Sixthly, this study would be of tremendous importance to organisational leaders as it can be recognised as making the notable contribution to the field. Organisational leaders would recognise through this study the extent to which a company's financial performance is influenced by its corporate governance. The take-away from this is that if companies want to improve their financial performance, they are encouraged to see the importance of complying with corporate governance. Managers can recognise the importance of using corporate governance mechanisms as they manage their corporations. Realising that corporate governance mechanisms vary, depending on the particular company and the particular country in which the company is located, managers would assume their responsibility in promoting disclosure and transparency to the community. This study also provides managers with information about the importance of reducing risk-taking and thereby providing an image of leading a well-managed company as a means of improving the company's financial performance.

This study also makes a notable contribution by demonstrating in practical terms the theoretical underpinnings of companies and of the relations that naturally exist between management and boards. Managers have the opportunity to understand how the particular approaches they take to carrying out their responsibilities have financial implications for their company. This study has explored the different approaches in terms of agency theory, stewardship theory and other theories, and shows how board members can be perceived as easing the conflicts between owners/shareholders and management through the use of resource dependency theory, legitimacy theory, institutional legitimacy theory and other

theories. In short, this study contributes to the field by contextualising the role of managers and boards in the operations of companies, and shows how these roles play a part in promoting financial performance of companies.

This study makes an important contribution to the field by providing most users with relevant information. Based on the empirical, practical and theoretical findings of this study, corporate managers, policy and decision makers and other authorities can recognise the contribution that this study makes towards the improvement of firms' financial operation. For investors, the findings of this study could be important in helping them in their decision-making on investment in companies. This study facilitates this by alerting investors to the relationships that they should be looking at in companies that could reveal whether these companies are a good match for their investment needs.

Lastly, this study makes a contribution to the field in that it takes a look at the differences and similarities between the various countries investigated. This study highlights the advantages and disadvantages of companies that operate in the Anglo and Continental traditions, and highlights the protections that are provided by the legal traditions in these different countries. For example, while the Anglo tradition involves common law protection, the Continental tradition uses a civil law system. This is significant information, because it allows users of this study to see how the characteristics and the cultural uniqueness of the various countries play a part in how these countries provide an environment that is conducive to investment opportunities.

## **7.5 Research limitations**

As with other empirical studies, this study has shortcomings and limitations that must be considered. Efforts were made to obtain a representative sample that would cover the criteria listed above. One limitation is that this study covers a five-year period. However, several governance reviews and reports were developed and published within this same time span, and this could affect the outcome of this study. Another limitation of this study

is the fact that when the various industries were selected, the utility and financial sectors were excluded, because they were thought to be too heavily regulated with capital structures that were unique to these industries. This could have the effect of giving results that are somewhat different from what they would have been if these industries were included. These limitations can also limit the generalisability of this study.

The third limitation of this study pertains to the reliability and validity of the governance index used. When the various corporate governance provisions were used, the decision was made to assign them equal weight. This was the use of unweighted indices. The rationale for using it was that it did assign more weight to one of the indices over the other. This use of unweighted indices could constitute a limitation, since in real life, not all corporate governance indices have the same weight; some indices have greater influence than others.

Fourth, a further limitation may be the sample selection procedure and the sample itself. The size of the sample is not particularly large, since only 20 companies were chosen from 10 of the 34 OECD countries. Since they are drawn from several industries, this means that there is not a large selection of companies from the same industry. Besides, the sample selection was done manually and obtained using annual reports only. The information provided in these reports was obtained from the companies themselves, and could have been self-serving. It is possible that the information from the annual reports could have been verified. One way of doing this could have been to use other sources to support the information obtained from the annual reports. A questionnaire survey or face-to-face interviews could have been used.

Another limitation is the manner in which the sample was selected. The selection of the final 200 firms was carried out in a stratified manner, based on the premise that larger firms are thought to disclose more than smaller firms (Haniffa and Cooke, 2002). Assuming that larger firms tend to be more likely to be compliant, this study decided in the interest of

fairness and balance to select firms from the top, middle and bottom. The sample therefore included firms of different sizes.

Another limitation may also be evident with respect to the corporate governance variables used. Only some of the variables that were thought to be important were used, but it is possible that these variables may not have been able to truthfully identify the purposes for which managers had selected them.

Lastly, the corporate governance data was collected manually, and the questions related to each corporate governance dimension were also manually developed. This could have contributed to some discrepancy how the corporate governance data is interpreted in the study.

## **7.6 Research recommendations and avenues for future research**

In light of the research carried out in this study, there is room for further study. One important avenue for further study could be developing a corporate governance index using more corporate governance mechanisms and more dimensions. These dimensions could be used in conjunction with the ones used in this study, or could be used separately. A comparison could be carried out between the two sets of corporate governance mechanisms to see whether the differences would impact the empirical findings. Another approach could be to carry out a comparison between countries following the same traditions, to see what factors could contribute to different results based on using the same corporate governance mechanisms or others. A variety of studies could follow these research suggestions.

Another avenue that could be pursued is that of using different measures of firm performance, again following the recommendations above, to see whether the empirical findings differ.



Further research could be carried out examining how external corporate governance mechanisms, such as the managerial labour force, can affect firm financial performance. A comparison could also be made between the effects of external and internal corporate governance mechanisms on firm financial performance.

Fourth, this study was carried out after the global economy recovered from financial crisis. It would be interesting to pursue similar research several years beyond the financial crisis to see if there are factors that would have different effects on the financial performance of firms.

Fifth, this study focused on 10 countries and 200 firm years. Future research could focus on fewer countries, or explore the relationship between corporate governance and the financial relationship, but with a much larger sample that includes small, mid-size or large companies.

While this study uses a quantitative approach to study the effect of corporate governance on financial performance, it is highly possible that a qualitative study would produce some elements not highlighted in this study. Therefore, a recommendation would be for a qualitative study to be carried out, obtaining more input from individuals associated with the companies in the research process.

## **7.7 Chapter summary**

This chapter has provided conclusions for this thesis, and has achieved the five major objectives that it set out. This chapter also points to its own objectives outlined in Chapter 1 of the thesis. It can be stated that the objectives outlined in Chapter 1 are clearly shown to have been achieved. The study carried out these objectives by giving a historical account of the rise of the OECD, and the role that it played in developing the 2004 OECD Principles of Corporate Governance, which have become the gold standard around the world as a means of dealing with ethical practices among firms in different countries. The study also

showed how different member countries, for example, Britain, France and the United States, contributed to the development of these principles, as the OECD was influenced by the efforts of these countries in developing its Principles of Corporate Governance. It is based on this document that the study developed its own Corporate Governance Index, used to achieve the other three study objectives. This chapter discusses how the study achieved its objectives of ascertaining the relationship between corporate governance and risk-taking, corporate governance and credit rating, and corporate governance and cost of capital. Therefore, this chapter demonstrates that the five objectives of the thesis have been achieved. In carrying out its four objectives, the study followed a plan.

First, this chapter summarised the findings of this research, which concern the levels of compliance with, and disclosure of, the corporate governance principles contained in the 2004 OECD Corporate Governance Code by firms following the Anglo-American tradition and the Continental European tradition. In doing so, it reported on the findings of the effect of corporate governance on corporate risk-taking, credit rating and cost of capital in firms following the two traditions. This chapter details findings that reveal how firms from the different traditions achieved compliance. It also reports on how compliance was shown through different corporate governance mechanisms and how this compliance had an impact on the firms' financial performance. Risk-taking, credit rating and cost of capital were used to measure the impact of corporate governance on firm performance.

Second, this chapter examines and discusses the policy implications of these findings. Section 7.2 presents a summary of the research findings, showing that regardless of the model or method used, corporate governance had a positive impact on firm financial performance, and that the representative, or compliance, model provided better empirical findings than the ownership model.

Third, this chapter cites the contribution of these findings to the field, including empirical, practical, theoretical and methodological improvements. The findings show that

contributions were made with respect to how corporate governance could be better represented through an index rather than by individual mechanisms, and how the different measures used to represent corporate governance and firm performance helped to provide stronger empirical findings. The findings also have practical application, as there are lessons to be learned by managers, decision makers, board members, and other authorities and investors. There are theoretical contributions, as shown through the use of various theories such as agency theory, stewardship theory, resource dependency theory, legitimacy theory and institutional legitimacy theory, which show the various responsibilities of managers and board members, and their impact on firm performance.

Next, this chapter discusses the limitations of the study. Some of the limitations highlighted include methodological limitations in the choice of sample, and the manual selection of the firms that were studied. Also, not all sectors in the economy were chosen, because of the nature of these sectors, including banking and utilities, but also because of the nature of disclosure in these sectors.

Fifth, the chapter highlights recommendations and avenues for future research. Major recommendations were to carry out further studies using different measures for corporate governance and firm performance, to increase the size of the study, focusing only on certain countries, or even to use a different methodology, primarily doing a qualitative study. The overall objective of these studies would be to see whether the overall finding was that corporate governance adherence leads to better financial performance, regardless of the tradition and other characteristics of the firms involved.

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## Appendices

### Appendix 1: The OECD 2004 Corporate Governance Index

Score Item	Governance Provision	Provision Code	Scoring	References
Section A -- Rights of Shareholders				OECD principles, 2004
A1	Does the company provide other ownership rights besides voting?		1 if yes; 0 if missing	
A2	Do the shareholders approve annually the decision on how much to remunerate board members or executives?		1 if yes; 0 if missing	
A.3	Are shareholders presented with board remuneration?		1 if yes; 0 if missing	
A.4	Are the names and backgrounds of the directors appointed presented in a Quality of Notice to call Shareholders Meeting in the past one year?		1 if yes; 0 if missing	
A.5	Are the names and fees of the auditors appointed presented in a Quality of Notice to call Shareholders Meeting in the past one year?		1 if yes; 0 if missing	
A.6	Is the amount and explanation for Dividend policy presented in the Quality of Notice to call Shareholders Meeting in the past one year?		1 if yes; 0 if missing	
A.7	In the last two years, did the Chairman of the Board attend at least one of the AGMs?		1 if yes; 0 if missing	
A.8	In the last two years, did the CEO/Managing Director attend at least one of the AGMs?		1 if yes; 0 if missing	
A.9	Does the company make available a list of the board members in attendance at AGMs?		1 if yes; 0 if missing	
A.10	Do the minutes from the AGM show whether shareholders had an opportunity to ask questions or raise issues with respect to the past year?		1 if yes; 0 if missing	
A.11	Dividend policy amount and explanation for payment are clear		1 if yes; 0 if missing	
A.12	Does the company have anti-takeover defences "Cross shareholding"?		1 if yes; 0 if missing	
A.13	Board members hold more than 25% of share outstanding		1 if yes; 0 if missing	
Section B -- Equitable Treatment of Shareholders				OECD principles, 2004
B.1	Is one-share, one-vote a rule that the company uses?		1 if yes; 0 if missing	
B.2	Is there any mechanism to allow minority shareholders to influence board composition?		1 if yes; 0 if missing	
B.3	Have there been any cases of insider trading involving company directors and management in the past two years?		1 if yes; 0 if missing	

B.4	Are explanations or rationales provided by the company for any related-party transactions affecting the corporation?		1 if yes; 0 if missing	
B.5	Is the company part of an economic group in which the economic group or controlling shareholder is in control of the key suppliers and customers of the company and/or are in similar businesses as the company?		1 if yes; 0 if missing	
B.6	Has the company been involved in any non-compliance case pertaining to related-party transactions in the past one year?		1 if yes; 0 if missing	
B.7	Does the company facilitate voting by proxy?		1 if yes; 0 if missing	
B.8	Are the documents needed to give proxy specified in the notice to shareholders?		1 if yes; 0 if missing	
B.9	Does the company ensure that shareholders receive notice of general shareholders' meeting 30 days or more in advance of these meetings?		1 if yes; 0 if missing	
Section C -- The Role of Stakeholders in Corporate Governance				OECD principles, 2004
C.1	Are the safety and welfare of its employees explicitly mentioned by the company?		1 if yes; 0 if missing	
C.2	Are the role of key stakeholders such as customers or the community at large, including creditors or suppliers mentioned explicitly by the company?		1 if yes; 0 if missing	
C.3	Are environmental issues explicitly mentioned by the company in its public communications?		1 if yes; 0 if missing	
C.4	Are ESOP (employee share option program), or other long-term employee incentive plan linked to shareholder value creation, provided to employees by the company?		1 if yes; 0 if missing	
Section D -- Disclosure and Transparency				OECD principles, 2004
D.1	Is there a transparent ownership structure available for the company? Breakdown of shareholdings		1 if yes; 0 if missing	
D.2	Is it easy to identify beneficial ownership of the company?		1 if yes; 0 if missing	
D.3	Does the company disclose director shareholdings?		1 if yes; 0 if missing	
D.4	Does the company disclose management shareholding?		1 if yes; 0 if missing	
D.5	Does the company possess a dispersed ownership structure?		1 if yes; 0 if missing	
D.6	Is the company's actual ownership structure obscured by cross-shareholdings?		1 if yes; 0 if missing	
D.7	Is it possible to assess the quality of the annual report, in particular, financial performance?		1 if yes; 0 if missing	
D.8	Is it possible to assess the quality of the annual report, in particular, business		1 if yes; 0 if missing	

	operations and the company's competitive position?			
D.9	Is it possible to assess the quality of the annual report, in particular, the backgrounds of board members?		1 if yes; 0 if missing	
D.10	Is it possible to assess the quality of the annual report, in particular, the basis of the remuneration of board members?		1 if yes; 0 if missing	
D.11	Is it possible to assess the quality of the annual report, in particular, operating risks?		1 if yes; 0 if missing	
D.12	Are there any statements requiring directors to report their transactions of company stock?		1 if yes; 0 if missing	
D.13	Is the company's accounting carried out in accordance with an internationally recognised accounting standard?		1 if yes; 0 if missing	
D.14	Is the company's auditing carried out in accordance with an internal audit operation that is established as a separate unit in the company?		1 if yes; 0 if missing	
D.15	Does the company perform an annual audit using independent and reputable auditors?		1 if yes; 0 if missing	
D.16	Does the audited financial statements have any accounting qualifications apart from the qualification on Uncertainty of Situation?		1 if yes; 0 if missing	
D.17	Does the company offer multiple channels of access to information?		1 if yes; 0 if missing	
D.18	Does the company disclose the financial report in a timely manner?		1 if yes; 0 if missing	
D.19	Does the company have a website, disclosing up-to-date information?		1 if yes; 0 if missing	
Section E -- Responsibilities of the Board				OECD principles, 2004
E.1	Does the company have its own written corporate governance rules?		1 if yes; 0 if missing	
E.2	Does the company's board of directors have a code of ethics or statement of business conduct that all directors and employees must adhere to?		1 if yes; 0 if missing	
E.3	Does the company have corporate vision/mission statements?		1 if yes; 0 if missing	
E.4	Does the regulatory agency have any evidence from the regulatory agency over the past three years that the company has been non-compliant with rules and regulations?		1 if yes; 0 if missing	
E.5	Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Attendance		1 if yes; 0 if missing	
E.6	Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Internal control		1 if yes; 0 if missing	
E.7	Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Management control		1 if yes; 0 if missing	

E.8	Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Legal compliance		1 if yes; 0 if missing	
E.9	Is it possible to assess the quality and content of the Audit Committee Report in the annual report for Conclusion or opinion		1 if yes; 0 if missing	
E.10	Have board members participated in the Securities Regulation Committee (or equivalent) training on corporate governance?		1 if yes; 0 if missing	
E.11	How many board meetings does the company have per year?		1 if 4 or more; 0 if less than 4	
E.12	Is the chairman and the CEO the same person?		1 if yes; 0 if missing	
E.13	Does the company provide an option scheme with incentives for top management?		1 if yes; 0 if missing	
E.14	Does the board appoint independent committees with independent members to carry out various critical responsibilities such as: audit, compensation and director nomination?		1 if yes; 0 if missing	
E.15	Does the company provide contact details for a specific investor relations person?		1 if yes; 0 if missing	
E.16	Does the company have a board of directors' report?		1 if yes; 0 if missing	
E.17	Does the company disclose the amounts paid to the independent nonexecutive directors?		1 if yes; 0 if missing	
E.18	Do the company provide training to directors (including executive and nonexecutive directors)?		1 if yes; 0 if missing	

**Appendix 2: A List of the Names and Industries of the 200 Sampled Firms from the FORBES 2000**

	Full Company Name	Industry	Country
1.	ANGLO AMERICAN	Diversified Metals and Mining	UK
2.	BP P.L.C.	Oil & Gas Operations	UK
3.	BT GROUP	Telecommunication Services	UK
4.	DIXONS RETAIL PLC	Computer & Electronics Retail	UK
5.	EVRAZ GROUP S.A.	Iron & Steel	UK
6.	GLAXOSMITHKLINE PLC	Pharmaceuticals	UK
7.	HAMMERSON PLC	Real Estate	UK
8.	IMPERIAL TOBACCO GROUP PLC	Tobacco	UK
9.	InterContinental Hotels	Hotels & Motels	UK
10.	INTU PROPERTIES PLC	Real Estate	UK
11.	JOHNSON MATTHEY	Diversified Chemicals	UK
12.	MARKS & SPENCER	Department Stores	UK
13.	NEXT PLC	Retail	UK
14.	ROLLS-ROYCE HOLDINGS	Aerospace & Defense	UK
15.	SAB MILLER	Beverages	UK
16.	TESCO	Food Retail	UK
17.	TULLOW OIL	Oil & Gas Operations	UK
18.	VODAFONE	Telecommunication Services	UK
19.	WEIR GROUP	Other Industrial Equipment	UK
20.	WM MORRISON SUPERMARKETS PLC	Food Retail	UK
21.	ACCENTURE	Computer Services	Ireland
22.	ACTAVIS / WATSON Pharma	Pharmaceuticals	Ireland
23.	AER LINGUS	Airline	Ireland
24.	ARYZTA AG	Food Producer	Ireland
25.	COVIDIEN PLC	Health Care	Ireland
26.	CRH	Construction Materials	Ireland
27.	DCC	Conglomerates	Ireland
28.	DIAGEO	Beverages	Ireland
29.	DRAGON OIL PLC	Oil & Gas Operations	Ireland
30.	EATON	Other Industrial Equipment	Ireland
31.	FYFFES PLC	Produce	Ireland
32.	GLANBIA PLC	Food Producer	Ireland
33.	INGERSOLL-RAND PUBLIC LIMITED COMPANY	Conglomerates	Ireland
34.	IRISH CONTINENTAL GROUP	shipping and transport	Ireland
35.	KERRY GROUP	Food Processing	Ireland
36.	PERRIGO	Pharmaceuticals	Ireland
37.	RYANAIR HOLDINGS	Airline	Ireland
38.	SEAGATE TECHNOLOGY	Computer Storage Devices	Ireland
39.	SHIRE	Pharmaceuticals	Ireland
40.	UDG HEALTHCARE	Pharmaceutical	Ireland
41.	BOEING	Aerospace & Defense	USA
42.	CF INDUSTRIES HOLDINGS	Specialised Chemicals	USA
43.	CHEVRON	Oil & Gas Operations	USA
44.	COCA-COLA ENTERPRISES INC	Beverages	USA
45.	DEAN FOODS	Food Processing	USA
46.	EASTMAN CHEMICAL	Specialised Chemicals	USA
47.	FMCTECHNOLOGIES	Specialised Chemicals	USA
48.	FORD MOTORS	Auto & Truck Manufacturer	USA
49.	GENERAL ELECTRIC	Conglomerates	USA

50.	GENERAL MOTORS AND CO	Auto & Truck Manufacturer	USA
51.	JOHNSON&JOHNSON	Medical Equipment & Supplies	USA
52.	MICROSOFT	Software & Programming	USA
53.	NEWMONT MINING	Diversified Metals & Mining	USA
54.	OCEANEERING INTERNATIONAL	Oil Services & Equipment	USA
55.	OSHKOSH	Heavy Equipment	USA
56.	PFIZER	Pharmaceuticals	USA
57.	PROCTER & GAMBLE	Household/Personal Care	USA
58.	STAPLES	Specialty Stores	USA
59.	WALL-MART STORES	Discount Stores	USA
60.	WW GRAINGER	Electrical Equipment	USA
61.	AMCOR	Containers & Packaging	Australia
62.	AURIZON	Rail Transport	Australia
63.	BHP BILLITON Group	Diversified Metals & Mining	Australia
64.	CALTEX AUSTRALIA	Oil & Gas Operations	Australia
65.	CCAMATIL	Manufacturer	Australia
66.	CSL	Medical	Australia
67.	GPT Group	Real Estate	Australia
68.	LEIGHTON HOLDINGS LTD	Construction	Australia
69.	METCASH	Food Retail	Australia
70.	NEWCREST MINING	Diversified Metals & Mining	Australia
71.	ORICA LIMITED	Diversified Metals & Mining	Australia
72.	QANTAS AIRWAYS	Airline	Australia
73.	SANTOS	Oil & Gas Operations	Australia
74.	STOCKLAND AUSTRALIA	Real Estate	Australia
75.	TELSTRA	Telecommunications Services	Australia
76.	TPG TELECOM LTD	Telecommunications Services	Australia
77.	WESFARMERS	Food Retail	Australia
78.	WESTFIELD GROUP	Real Estate	Australia
79.	WOODSIDE PETROLEUM	Oil & Gas Operations	Australia
80.	WOOLWORTHS	Food Retail	Australia
81.	BARRICK GOLD	Diversified Metals & Mining	Canada
82.	BELL CANADA	Telecommunications	Canada
83.	BOMBARDIER	Aerospace & Defense	Canada
84.	CAMECO CORPORATION	Diversified Metals & Mining	Canada
85.	CANADIAN OIL AND SAND	Oil & Gas Operations	Canada
86.	CANADIAN TIRE	Specialty Stores	Canada
87.	CRESCENT POINT ENERGY	Oil & Gas Operations	Canada
88.	EMPIRE COMPANY LIMITED	Food Retail	Canada
89.	ENCANA	Oil & Gas Operations	Canada
90.	FIRST QUANTUM MINERALS	Diversified Metals & Mining	Canada
91.	GEORGE WESTON	Food Retail	Canada
92.	GOLDCORP	Diversified Metals & Mining	Canada
93.	METRO INC	Food Retail	Canada
94.	POTASH OF SASKATCHEWAN	Specialised Chemicals	Canada
95.	ROGERS COMMUNICATIONS	Telecommunications Services	Canada
96.	SAPUTO	Food Processing	Canada
97.	SILVER WHEATON	Diversified Metals & Mining	Canada
98.	SNC- LAVALIN GROUP	Construction Services	Canada
99.	TIM HORTONS	Restaurants	Canada
100.	VALEANT PHARMACEUTICALS	Pharmaceuticals	Canada
101.	AIR FRANCE KLM	Aviation	France
102.	ARKEMA	Chemicals and advanced materials	France
103.	CARREFOUR	Retail Stores	France

104.	EADS N.V.	Aviation	France
105.	EUTELSAT	Telecommunication	France
106.	GECINA	Real Estate Investment Trust	France
107.	HERMES INTERNATIONAL	Consumer goods	France
108.	LOREAL	Consumer goods	France
109.	MICHELIN GROUP	Automotive	France
110.	ORANGE	Telecommunication	France
111.	PERNOD RICARD	Beverages	France
112.	PEUGEOT	Automotive	France
113.	RENAULT	Automotive	France
114.	SAINT GOBAIN	Constructions	France
115.	SANOFI	Pharmaceutical	France
116.	SCHNEIDER ELECTRIC	Energy	France
117.	TOTAL	Oil & Gas Operations	France
118.	VALEO	Automotive	France
119.	VINCI	Constructions	France
120.	ZODIAC AEROSPACE	Aerospace	France
121.	AURUBIS	Diversified Metals & Mining	GERMANY
122.	BASF SE	Diversified Chemicals	GERMANY
123.	BAYER GROUP	Chemicals and advanced materials	GERMANY
124.	BAYWA AG	Specialty Stores	GERMANY
125.	BILFINGER SE	Construction Services	GERMANY
126.	BMW GROUP	Auto & Truck Manufacturer	GERMANY
127.	BRENTAG	Specialised Chemicals	GERMANY
128.	DAIMLER	Auto & Truck Manufacturer	GERMANY
129.	DEUTSCHE LUFTHANSA AG	Airline	GERMANY
130.	DEUTSCHE TELECOM	Telecommunications Services	GERMANY
131.	FRAPORT AG	Transportation	GERMANY
132.	GEA GROUP	Conglomerates	GERMANY
133.	Heidelberger Druckmaschinen AG	Construction Materials	GERMANY
134.	INFINEON TECHNOLOGIES AG	Semiconductors	GERMANY
135.	KULICKE AND SOFFA INDUSTRIES, INC.	Diversified Chemicals	GERMANY
136.	SAP	Software & Programming	GERMANY
137.	SIEMENS AG	Conglomerates	GERMANY
138.	SUEDZUCKER AG	Food Processing	GERMANY
139.	THYSSENKRUPP AG	Conglomerates	GERMANY
140.	VOLKSWAGEN	Auto & Truck Manufacturer	GERMANY
141.	ABENGOA S.A	Constructions	SPAIN
142.	ABERTIS INFRAESTRUCTURAS, S.A	Transportation	SPAIN
143.	ACCIONA S.A.	Construction	SPAIN
144.	ACERINOX S.A.	Stainless Steel Manufacturing	SPAIN
145.	ACS GROUP	Construction	SPAIN
146.	AMADEUS IT HOLDING S.A.	Software & Programming	SPAIN
147.	CEPSA GROUP	Oil & Gas Operations	SPAIN
148.	DIA S.A.	Food Retail	SPAIN
149.	DIASORIN GROUP	Industrial	SPAIN
150.	EBRO FOODS, S.A	Food Manufacturer	SPAIN
151.	FCC S.A.	Constructions	SPAIN
152.	FERROVIAL S.A.	Transportation	SPAIN
153.	GAMESA CORPORACIÓN TECNOLÓGICA, S.A.	Manufacturer	SPAIN
154.	GRIFOLS, S.A.	Biotech's	SPAIN
155.	IAG	Airline	SPAIN



156.	INDITEX GROUP	Retail Stores	SPAIN
157.	OHL GROUP	Construction	SPAIN
158.	REPSOL, S.A.	Oil & Gas Operations	SPAIN
159.	TELEFONICA GROUP	Telecommunication	SPAIN
160.	ZARDOYA OTIS	Manufacturing	SPAIN
161.	ACEA S.P.A	Automotive	ITALY
162.	ATLANTIA GROUP	Other Industrial Equipment	ITALY
163.	AUTOGRILL GROUP	Food & Beverage	ITALY
164.	BUZZI UNICEM S.P.A	Construction	ITALY
165.	CNH INDUSTRIAL	Construction	ITALY
166.	DAVIDE Campari-Milano S.P.A.	Beverages	ITALY
167.	ENI GROUP	Oil & Gas Operations	ITALY
168.	FIAT	Automotive	ITALY
169.	FINMECCANICA	Aerospace & Defense	ITALY
170.	GTECH S.P.A.	Information Technology	ITALY
171.	ITALCEMENTI	Construction	ITALY
172.	Luxottica Group S.P.A.,	Specialty Stores	ITALY
173.	MEDIASET S.P.A.	Mass Media	ITALY
174.	PARMALAT S.P.A.	Food Processing	ITALY
175.	PIRELLI & C. S.P.A.	Auto & Truck Parts	ITALY
176.	PRADA GROUP	Apparel/ Accessories	ITALY
177.	PRYSMIAN S.P.A.	Electrical Equipment	ITALY
178.	SAIPEM GROUP	Oil & Gas Operations	ITALY
179.	SARAS S.P.A.	Oil & Gas Operations	ITALY
180.	TELECOM Italia Group	Telecommunication	ITALY
181.	CANON INC.	Business Products & Supplies	JAPAN
182.	FUJIELECTRIC Co. Ltd	Electrical Equipment	JAPAN
183.	FUJITSU LIMITED	Technology	JAPAN
184.	HITACHI LTD	Electronics	JAPAN
185.	HONDA MOTOR CO. LTD	Automotive	JAPAN
186.	J POWER ELECTRICAL POWER DEVELOPMENT	Power & Energy	JAPAN
187.	JAPAN Tobacco Inc	Tobacco	JAPAN
188.	KAWASAKI KISEN KAISHA	Other Transportation	JAPAN
189.	MEIJI HOLDINGS	Food Processing	JAPAN
190.	MITSUBISHI CORP	Automotive	JAPAN
191.	MITSUMI & CO. LTD	Oil & Gas Operations	JAPAN
192.	NIPPON Paper Industries Co. Ltd.	Other Industrial Equipment	JAPAN
193.	NIPPON STEEL & SUMITOMO METAL	Iron & Steel	JAPAN
194.	NIPPON TELEGRAPH & TEL	Telecommunications Services	JAPAN
195.	OSAKA GAS GROUP	Energy	JAPAN
196.	OTSUKA HOLDINGS CO. LTD	Pharmaceutical	JAPAN
197.	TERUMO CORP	Medical Equipment & Supplies	JAPAN
198.	TOKYO ELECTRON LIMITED	Semiconductors	JAPAN
199.	TOYO TIRE & RUBBER CO. LTD	Consumer Goods	JAPAN
200.	TOYOTA Motor Corporation	Automotive	JAPAN

### Appendix 3: Credit Rating

Moody's		S&P		Fitch		rating description
Long-term		Long-term		Long-term		
Aaa		AAA		AAA		Prime
Aa1		AA+		AA+		High grade
Aa2		AA		AA		
Aa3		AA-		AA-		
A1		A+		A+		
A2		A		A		Upper medium grade
A3		A-		A-		
Baa1		BBB+		BBB+		
Baa2		BBB		BBB		Lower medium grade
Baa3		BBB-		BBB-		
Ba1		BB+		BB+		Non-investment grade speculative
Ba2		BB		BB		
Ba3		BB-		BB-		
B1		B+		B+		Highly speculative
B2		B		B		
B3		B-		B-		
Caa1		CCC+		CCC+		Substantial risks
Caa2		CCC		CCC		
Caa3		CCC-		CCC-		
Ca		CC		CC		Extremely speculative
		C		C		Default imminent
C		RD		DDD		In default
/		SD		DD		
/		D		D		

#### Appendix 4: Computing implied cost of capital

The implied cost of equity is computed as the average of the two commonly used metrics,  $ICC_{GM}$  and  $ICC_{PEG}$ .

##### ICC based on the OJ Model: $ICC_{GM}$ and $ICC_{PEG}$

Ohlson and Juettner – Nauroth (2005) show ICC can be expressed as:

$$r_e = A + \sqrt{A^2 + \frac{eps_1}{P_0} (g_2 - (\gamma - 1))}$$

$$\text{Where } A = \frac{1}{2} \left( (\gamma - 1) + \frac{dps_1}{P_0} \right) \text{ and } g_2 = \frac{eps_2 - eps_1}{eps_1}$$

Gode and Mohanram (2003) make the following assumptions. They set  $(\gamma - 1)$  to  $r_f - 3\%$  where  $r_f$  is the risk free rate.

Additionally,  $ICC_{PEG}$  computed as a simplified version of the OJ model that ignores dividends as:

$$ICC_{PEG} = \sqrt{\frac{g_2}{(PRICE/eps_1)}} \text{ Where } g_2 \text{ is defined as above.}$$