The association between firm-level corporate governance and corporate cash holdings: Evidence from some emerging markets

Tebogo Meloa
13272332

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Abstract

A wealth of studies indicates that good corporate governance has a positive impact on company performance. However, it is not always understood *how* this positive relationship is achieved. In firms where shareholders and management are misaligned and agency costs are high, cash and cash equivalents can be used in ways that lead to poor company performance and to the destruction of shareholder value. In addition to this problem, very few studies on corporate governance focus on emerging markets: "most studies of corporate governance focus on one or a few wealthy economies" (La Porta, Lopez-De-Silanes, Shleifer & Vishny, 1998, p.1117). Therefore, the focus of this study was to address these two main issues.

The author of this report set out to understand the impact of corporate governance on corporate cash holdings by focusing on emerging markets. This was first done by reviewing the extensive literature on agency theory, firm-level corporate governance, cash holdings and the three hypotheses for reasons why firms hold cash. Firm-level corporate governance, corporate cash holdings and total assets data was collected for 620 firms in 17 emerging market economies using Thomson Reuters DataStream for the period 2009 to 2012. The data was then used to determine whether firm-level corporate governance, board characteristics, shareholder rights and vision and strategy are associated with corporate cash holdings.

The study found that for the selected sample, firm-level corporate governance is negatively correlated to corporate cash holdings in emerging markets. This implies that the *flexibility* hypothesis is the dominant reason why firms hold cash in emerging markets. Emerging market firms tend to hoard cash because it provides the flexibility for these firms to take advantage of profitable opportunities as they present themselves. This outcome is contrary to the results obtained in prior studies done on firms in developed economies: these firms tend to spend cash quickly on acquisitions and capital projects (*spending* hypothesis) or they keep cash to avoid under-investing in case they cannot access external credit lines.(*shareholder power* hypothesis).

Keywords

Firm-level corporate governance; corporate cash holdings; emerging markets

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Signature: _____

Name: Tebogo Meloa

Date: 10 November 2014

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Chapter 1 : Introduction to the Research Problem

1.1. Research Problem

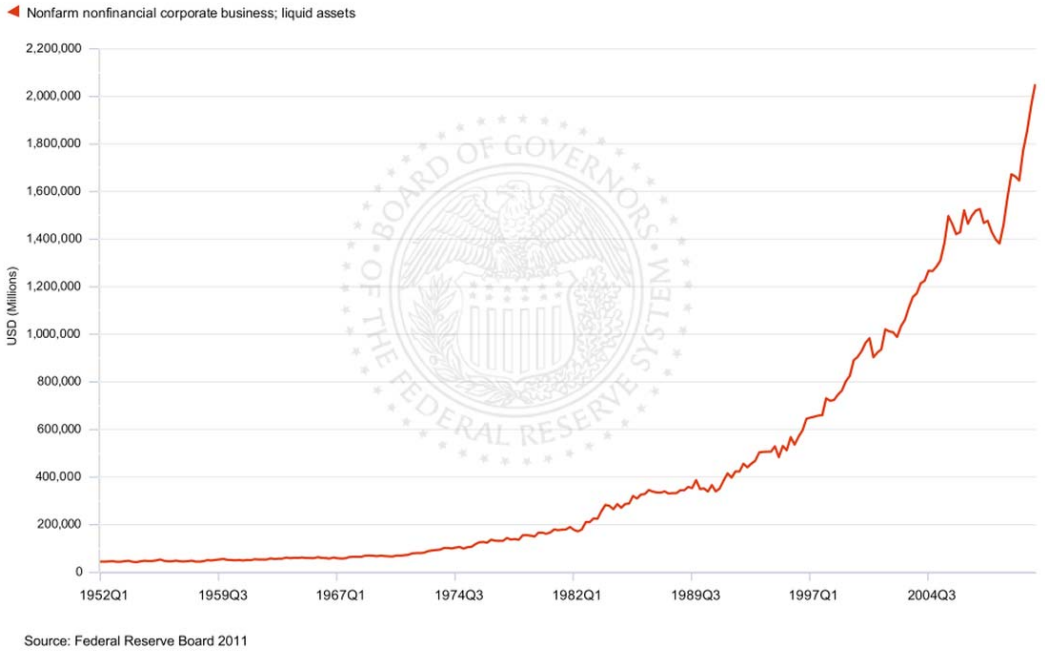
The study of the impact of corporate governance on corporate cash holdings has received much global attention in the past decade (Kuan, Li & Chu, 2011; Harford, Mansi & Maxwell, 2008; Dittmar & Mahrt-Smith, 2007; Fresard & Salva, 2010; Pinkowitz, Stulz & Williamson, 2004). It has been reported that companies outside of the financial industry in the United States of America (United States) had $1.8 trillion in cash sitting on their books by the end of the second quarter of 2013 (Casselman, 2013). In addition, Drobetz, Grüninger and Hirschvogl (2010) state that "J.P. Morgan economists estimate that corporations in rich countries increased their cash holdings by more than $1 trillion from 2000 to 2004. Compared to the last 40 years, firms never hoarded so much cash as they did during this recent time period" (Drobetz et al., 2010, p. 2168). This was concerning because the cash was lying idle and could be put to good use on alternative projects that can create shareholder wealth.

Previously, it was believed that the high cash pile was a response to the financial crisis and the recession (Goldstein, 2011). If companies did not feel confident about the economy, or they felt that the performance of the economy would be adversely affected in the coming months or years due to the recession, then it would make sense to hold a large amount of cash. However, previous trends of companies' cash holdings indicate that these cash holdings have been increasing for years, even in times when there was no recession. Figure 1-1 below shows a trend of liquid holdings in United States companies since 1952. With this in mind, other important determinants that influence companies' cash holdings need to be explored.

Corporate governance is one component of management and business that has been receiving increased attention in recent times (O'Connor, Kinsella & O'Sullivan, 2014; Munisi, Hermes & Randøy, 2014; Jameson, Prevost & Puthenpurackal, 2014; Claessens & Yurtoglu, 2013; Raelin & Bondy, 2013; Black, Gledson de Carvalho & Gorga, 2012; Cuevas-Rodríguez, Gomez-Mejia & Wiseman, 2012). Previous studies involving corporate governance have focused mainly on its impact on company performance. The results of most such studies indicate a positive result between corporate governance and company performance. Often, however, these studies do not explain *how* corporate governance results in higher performance, nor do they ask *what* levers does corporate governance influence so that companies achieve a higher performance. Cash is an important asset in companies: it can be used as a lever to

greater performance. On the other hand, cash can also be misused by management and result in the destruction of shareholder value.

Figure 1-1: Trend of US companies' liquid holdings from 1952 to 2004



Source: Goldstein (2011)

In light of the agency theory, where managers are employed by shareholders to act in a manner that increases shareholder value, cash should be used responsibly by managers. In the absence of effective monitoring and disciplining structures, managers can turn cash into private benefits (Fresard & Salva, 2010) or overpay for acquisitions (Dittmar, Mahrt-Smith & Servaes, 2003). To avoid these problems, agency conflicts, which result in managers acting in their best interest at the expense of shareholders, must be avoided. Effective corporate governance must therefore be properly implemented in firms to reduce agency costs and to result in cash being used responsibly by managers. The main question at this point is: "Is there an association between firm-level corporate governance and corporate cash holdings?" In other words: "Will stronger firm-level corporate governance result in higher or lower cash being held by firms?" The research carried out for this paper will attempt to answer this question. This has been done by studying firms in emerging markets.

1.2. Research Motivation

Prior studies on firm-level corporate governance have shown that it has an impact on companies' cash holdings (Dittmar & Mahrt-Smith, 2007; Harford et al., 2008; Kuan et al., 2011). However, these studies mainly focused on developed countries, especially in the United States. Given that 2013 was the first year in which emerging markets started accounting for more than half of the world's Gross Domestic Product (GDP) on the basis of purchasing power (Emerging Economies, 2013), similar studies need to be done for emerging markets. In addition, prior studies that focused on corporate governance in emerging markets mention that corporate governance structures in emerging markets are normally weaker and more relevant than those in developed markets (Renders, Gaeremynck & Sercu, 2010; Al-Najjar, 2013; Abdo & Fisher, 2007; Young, Peng, Ahlstrom, Bruton & Jiang, 2008; Fan, Wei & Xu, 2011; Morey, Gottesman, Baker & Godridge, 2009).

However, when it comes to corporate cash holdings, very few studies have been done in emerging market firms. In fact, Al-Najjar (2013) mentioned that his study on the financial determinants of corporate cash holdings is the first one to extend the study of corporate cash holdings to the emerging market space. Al-Najjar's (2013) study did not attempt to determine the link between corporate governance and corporate cash holdings. However, it mentioned this study as a recommendation for future research.

Therefore, in light of the discussions of the research problem and motivation, this paper contributes to the existing academic literature and to the policy debate in the following way: First, it contributes to the continuing discussion among researchers about the impact of corporate governance on company performance by focusing on one of the intermediate steps that affects company performance: cash holdings. This intermediate step is important because it explains *how* corporate governance affects company performance.

Secondly, the paper contributes to literature by focusing on emerging markets. Emerging markets have been the fastest growing economies in the past decade. In addition, the differences in firm-level corporate governance between emerging and developed economies will provide further understanding of its impact on cash holdings, and whether the impact will be the same for both types of economies. Firm-level corporate governance in this paper was measured using the ASSET4 ESG rating, which is a rating that has never been used in prior studies. This rating uses the following corporate governance categories: board structure, compensation policy,

board functions, shareholder rights and vision and strategy. There are debates among corporate governance researchers on the usefulness of governance ratings, and whether they consist of categories that are positively correlated with one another (Ward, Brown & Rodriguez, 2009; Schnyder, 2012). The investigation of the impact of these categories on cash holdings is an important contribution to literature because it has highlighted those categories that are significantly related to cash holdings.

1.3. Research Objectives

The main objective of this research was to determine if there was an association between firm-level corporate governance and the level of corporate cash holdings in emerging market firms. The reason for investigating the existence of an association between the two variables was to predict the reasons why emerging market firms hold cash, and whether these reasons are similar to those that apply to developed markets. The other objective of the study was to investigate the impact of board characteristics, shareholder rights and vision and strategy on cash holdings in emerging markets.

This paper also provided insights into the general levels of corporate governance and cash holdings in listed emerging market firms. Firms were split into different industries and analysed to determine which industries tend to hold more cash; and which industries have high levels of firm-level corporate governance. These insights were compared to similar studies which were done on developed market firms to understand the differences.

1.4. Relationship between the Research Problem and the Research Objectives

The research problem is that cash holdings in companies have been rising for a long time. There are various reasons for this rise in cash holdings and there is ongoing research to understand these reasons. The research objectives directly address the research problem by focusing on firm-level corporate governance. The link between the research problem and objectives was established as follows: “Can firm-level corporate governance explain the reason why firms hoard so much cash now than they used to?” This paper provides an answer to the above question by focusing on emerging markets.

1.5. Relevance of the Study to Businesses

Corporate cash holdings are an important part of any business. Without cash, businesses will not be able to meet their day-to-day operational requirements; in addition, they can use cash to finance investment opportunities if external finance is costly; this would prevent businesses from liquidating assets to take advantage of investment opportunities. These are the transactional and precautionary motives for holding cash that were proposed by Keynes (2006). Therefore, there is a minimum amount of cash that businesses need to hold to be able to carry out the two functions of cash described above.

Holding cash, however, has costs because it earns a lower rate of return compared to other asset classes. Businesses, therefore, should find the optimum cash holding level such that shareholder value is maximised. “Management that maximises shareholder wealth should set the firm's cash holdings at a level such that the marginal benefit of cash holdings equals the marginal cost of those holdings” (Opler, Pinkowitz, Stulz & Williamson, 1999, p. 4). This paper is relevant to businesses in many ways. Firstly, it makes businesses aware that cash holdings have an impact on company performance because of costs associated with holding cash. Businesses need to be aware of the different reasons for holding cash.

Secondly, this study highlights the importance of corporate governance and the role it plays in minimising agency costs that arise due to misalignment between shareholders and management. Many studies established a positive link between good corporate governance practices and operating performance. Poor corporate governance can result in destruction of shareholder value. Businesses need to understand the different corporate governance ratings; what categories of corporate governance they take into account and how these categories individually relate to one another and to cash holdings. This paper provided insight into these relationships using data from Thomson Reuters DataStream.

Thirdly, the study exposes the behaviour of emerging market firms with regards to their cash holding practices and how corporate governance influences these practices. “Emerging markets are characterized by volatile, but substantial returns that can easily exceed 75% per annum” (Lesmond, 2005, p. 411). Due to the importance of these markets for long-term growth, their corporate governance and cash holding practices are important for developed market firms aiming to start businesses in emerging

markets and emerging market firms aiming to start businesses in other emerging markets.

1.6. Research Scope

This paper studied the association between firm-level corporate governance and corporate cash holdings by focusing on 620 listed firms in 17 emerging countries. The impact of country-level governance, either in the form of legal protection of investors or country legal rules, is not considered in this paper. The focus is only on firm-level corporate governance and its categories. The study included companies across a range of sectors, excluding firms from financial services and insurance industries.

Chapter 2 : Literature Review

2.1. Corporate Governance

2.1.1 Introduction

"Corporate governance, a phrase that a decade or two ago meant little to all but a handful of scholars and shareholders, has become a mainstream concern—a staple of discussion in corporate boardrooms, academic meetings, and policy circles around the globe" (Claessens & Yurtoglu, 2013, p. 2). WorldCom, Enron, Lehman Brothers, Bear Stearns, Barings Bank, are some of the names that come to mind when one thinks about the consequences of poor governance in firms. The use of fraudulent accounting methods by directors to conceal losses in the past has elevated the need for corporate governance to exist at the highest level of importance. For large institutional investors, the incorporation of a corporate governance measure in potential investment destination firms is a necessity.

This chapter will outline the vast literature on corporate governance: with the focus on agency theory, measurement of corporate governance and its impact on firm performance. The section on the impact of corporate governance on firm performance outlines several studies that have been done in the past on this subject by emphasizing the authors' methods of measuring corporate governance; their sample and geography; the time period that the data refers to and the result of the study.

2.1.2 Agency Theory

Agency theory has been widely applied to corporate governance research because "it provides a unique, realistic, and empirically testable perspective on problems of cooperative effort" (Eisenhardt, 1989, p. 72); it provides a dominant logic in corporate governance (Raelin & Bondy, 2013). An agency relationship exists in a situation where an individual (the principal) engages another person (the agent) to perform a service in the principal's name, so that the wealth of the principal is benefited by the decisions adopted by the agent (Cuevas-Rodríguez et al., 2012). Millson and Ward (2005) state that agency theory can be loosely traced back to the work of Spence and Zeckhauser (1971), who provided an early analysis of the problems associated with structuring the agent's compensation to align his/her incentives with the interests of the principal. Therefore, by appointing an agent to look after the principal's interests, principals must be aware that the agent may well use the opportunity to his/her benefit, rather than the principal's. This is made worse by the fact that principals do not have access to useful

information (which lies in the hands of agents) that will allow them to make educated decisions. The underlying assumptions of agency theory are best outlined by Millson and Ward (2005, p. 74) as follows:

I. "There exists goal divergence between the principal and the agent.
II. There exists hidden information either before or after the contracting of the agent.
III. The principal and agent have different risk preferences, which may lead to different actions being taken."

Agency conflicts arise when agents or managers act in their best interest and adopt strategies that benefit themselves at the expense of shareholders. Such poor strategies are more likely to happen in companies with poor governance, characterised by the absence of effective monitoring and disciplining mechanisms (Renders, Gaeremynck & Sercu, 2010). For many, corporate governance is synonymous to solving the adverse selection and the moral hazard problems associated with the agency relationship: how to select the most able managers and to keep them accountable to the shareholders (Tirole, 2010). Corporate governance deals with how the shareholders incentivise management to effectively align management goals with shareholder goals and also to ensure that there is adequate information flow to enable proper monitoring and control of management actions (Millson & Ward, 2005). The Institute of Directors, Southern Africa (2009) define corporate governance as a set of structures and processes, with appropriate checks and balances that enable directors to discharge their legal responsibilities and oversee compliance with legislation. By installing and implementing good corporate governance, companies should reduce agency costs and minimise the problems associated with poor governance, which should result in improved company performance and increased shareholder value. Lee and Yeh (2004) found that companies with poor corporate governance had a greater probability to be in financial distress which implied that at a minimum, companies with good corporate governance practices had a greater probability to be financially healthy relative to their counterparts with poor governance.

In order to safeguard the interests of the shareholders and to promote shareholder value, various measures can be undertaken to restrict the actions of managers. Examples of these measures include: executing hostile takeovers, having large shareholders, board of directors' interventions occurring and having executive compensation contracts in place. Hostile takeovers function by concentrating

ownership of the target firm in the hands of a raider and, thereby, allow the raider to replace (or at least control) the management (Holopainen, 2006). Another common way of monitoring managerial action is to concentrate ownership in the firm by having at least one large shareholder. “Controlling shareholders have the incentive and power to monitor management, thereby overcoming the free-rider problem found in firms with more dispersed ownership structures” (Jameson et al., 2014).

The board of directors performs two main roles in firms: “monitoring management as representatives of the stakeholders of the firm, and advising and providing resources to management to help them make important decisions” (Munisi et al., 2014, p. 787). If implemented properly, these roles should minimise agency costs. The King III report and related practice notes outline best practices and principles that guide functions and responsibilities of directors and boards (Taljaard, 2013). One of the important roles and responsibilities of boards, as outlined in the King III report and related practice notes, is to "act as the focal point for, and custodian of, corporate governance by managing its relationship with management, the shareholders and other stakeholders of the company along sound corporate governance principles" (Deloitte & Touche, 2013, p. 36). Executive compensation contracts, such as share options, have a positive effect on company performance in that they lower agency costs of the company and thereby align the decisions of the managers with the goals of the shareholders (Holopainen, 2006).

2.1.3 Measurement of Corporate Governance

“Corporate governance advice is big business” (Daines, Gow & Larcker, 2010, p. 439). Prior studies on corporate governance have mainly focused on its impact on firm performance (Abdo & Fisher, 2007; Kolobe, 2010; Renders et al., 2010; Rambajan, 2011; Bebchuk, Cohen & Ferrell, 2008; Gompers, Ishii & Metrick, 2003). However, these studies have failed to yield consistent results, mainly due to the difficulty and differing methodologies of measuring corporate governance. Theoretically, firms that are better governed should perform better than poorly governed firms. However, some researchers established weak evidence for a link between corporate governance and firm performance (Renders et al., 2010). This weak evidence was attributed to econometric problems, such as endogeneity, selection bias, or lack of statistical power (Renders et al., 2010). The sections that follow will elaborate more on methodologies used by various researchers in measuring corporate governance.

2.1.3.1. Composite vs single-variable measures of corporate governance

Some researchers have attributed the problem of inconsistent correlation between corporate governance and firm performance to measurement errors and index construction (Bhagat, Bolton & Romano, 2008; Bebchuk et al., 2008; Schnyder, 2012). In certain cases, some components incorporated in this 'bundles approach' are weakly correlated with one another and they are supposed to measure the same thing (Schnyder, 2012). Therefore, this may suggest that the more simple the corporate governance index, the easier it will be to construct and the higher the probability that it will lead to accurate and consistent results. Some researchers have criticized the use of governance ratings because they do not consistently result in a correlation between corporate governance and firm performance (Daines et al., 2010) and others have found that not all provisions incorporated in these ratings are positively linked to the value of the firm (Brown & Caylor, 2006). This is especially true for composite measures of corporate governance such as complex indices that involve numerous corporate governance provisions. Bhagat and Bolton (2008) mention that single corporate governance measures related to corporate board characteristics such as board independence, stock ownership of board members and whether the chairman and CEO positions are occupied by the same or two different individuals, are important determinants of corporate governance.

However, the argument against single corporate governance measures is presented well by Schnyder (2012): the study argues that reverting to simpler measures of firm-level corporate governance practices is a step in the wrong direction because it eliminates information about interactions between different corporate governance mechanisms (Schnyder, 2012). The reason why some composite measures yield inconsistent correlations between corporate governance and firm performance can be attributed to two main criticisms: "Firstly, there is a lack of theoretical justification for the composition of these composite measures (what to include and what not); secondly, a convincing method or a theory to determine the weighting of different variables included in the index is lacking" (Schnyder, 2012, p. 1).

One corporate governance index that has been widely used in literature and has been shown to yield consistently good correlations between corporate governance and firm performance is the Gompers, Ishii and Metrick governance index (GIM Index or G-Index), developed by Gompers et al. (2003). The GIM Index was among the first indices to measure the quality of corporate governance; it uses the Investor Responsibility Research Centre (IRRC) data on 24 antitakeover provisions to construct

an index of corporate governance quality (Gompers et al., 2003). Gompers et al. (2003) establish that more antitakeover provisions included in a firm's charter are an indication of poor corporate governance. Bebchuk et al. (2008) criticised the GIM Index and found that not all the 24 provisions incorporated in the GIM Index are useful in measuring the quality of corporate governance. They cautioned against the use of larger indices and reduced the 24 provisions incorporated in the GIM Index to six provisions; they found evidence that the other 18 provisions are uncorrelated to firm performance (Bebchuk et al., 2008). From the six provisions that they deemed useful, Bebchuk et al. (2008) developed the Bebchuk, Cohen and Ferrell governance index (BCF Index or E-Index). Studies by Dittmar and Mahrt-Smith (2007) and Harford et al. (2008), which investigated the impact of firm-level corporate governance on corporate cash holdings, used the GIM and BCF indices to measure firm-level corporate governance.

Corporate governance advisory firms are starting to play an increasingly important role in business, especially in the United States (Daines et al., 2010). These firms rank the quality of the firm's corporate governance, advise shareholders how to vote and sometimes press for governance changes (Daines et al., 2010). "Unlike credit ratings, corporate-governance ratings are unsolicited and do not involve any contractual relationship between the rating agency and the company" (Renders et al., 2010, p. 101).

2.1.3.2. Corporate governance and company performance

As can be seen from the above discussion, there have been extensive discussions among academics on ways of measuring corporate governance. The paragraphs below describe selected studies investigating the link between corporate governance and firm performance.

Klapper and Love (2004) predicted the impact of corporate governance by studying 374 companies in emerging markets. In measuring corporate governance, they used data from the Credit Lyonnais Securities Asia (CLSA), who had calculated an index with corporate governance rankings for 495 firms across 25 emerging markets and 18 sectors for the 1999 time period (Klapper & Love, 2004). CLSA had constructed the index by designing a questionnaire with 57 qualitative questions that cover seven broad categories: management discipline, transparency, independence, accountability, responsibility, fairness and social awareness (Klapper & Love, 2004). Durnev and Kim (2005) did a similar study and studied 859 companies in 27 emerging markets based on CLSA data; they looked at a wider time period from 1999 to 2001. Both studies by

Klapper and Love (2004) and Durnev and Kim (2005) revealed a positive association between corporate governance and firm value.

Black, Jang and Kim (2006) constructed their own corporate governance score for 515 listed Korean firms based on the 2001 Korea Stock Exchange survey. Their overall index consisted of sub-indices that focused on the following areas: shareholder rights, board structure, board procedure, disclosure and ownership (Black et al., 2006). Good data availability in Korea was the strength of their study, unlike other studies that focus on multiple countries. The outcome of their study was a positive relationship between corporate governance and the market value of the firm. Khanchel El Mehdi (2007) studied 24 firms listed on the Tunisian Stock Exchange for the period 2000 to 2005; the study used the following eight corporate governance variables: total number of directors; ratio of outside directors to total number of board members; number of board meetings; fraction of shares owned by the CEO; percentage of capital owned by directors (excluding the CEO); percentage of capital owned by institutional investors; holdings of block holders owning more than 5% and the number of years each CEO had been in office (Khanchel El Mehdi, 2007). The outcome of the study by Khanchel El Mehdi (2007) was a positive relationship between corporate governance and firm value.

Garay and González (2008) also researched whether or not there was a positive relationship between corporate governance and the firm's market value: they studied 46 listed Venezuelan companies in 2004. Their corporate governance index was self-constructed: they answered 17 questions using publicly available information in Venezuela. The questions were grouped into four sub-indices, namely: information disclosure (five questions), the composition and performance of the board of directors (five questions), ethics and conflicts of interest (three questions) and shareholders' rights (four questions) (Garay & González, 2008). The studies by Khanchel El Mehdi (2007) and Garay and González (2008) were similar in that both papers had a small sample, they focused on transition economies characterised by low investor protection and their corporate governance indices were self-constructed based on publicly-available data. The findings of their studies were that there was a positive relation between corporate governance and firm value. The evidence shown in the papers by Khanchel El Mehdi (2007) and Garay and González (2008) is useful for firms operating in emerging markets and shows that firms can differentiate themselves by adopting better corporate governance practices and policies. As a result, they can increase their

market value even in a weak investor protection environment (Garay & González, 2008).

In South Africa, Abdo and Fisher (2007) and Kolobe (2010) used a governance disclosure scorecard that took various elements of corporate governance in firms into account. This scorecard was exclusively designed by Abdo and Fisher (2007) for analysing the impact of corporate governance disclosure on the performance of companies listed on the Johannesburg Stock Exchange (JSE). Abdo and Fisher (2007) studied the companies listed on the JSE from 2003 to 2006; while Kolobe (2010) looked at a wider time period: from 2003 to 2009. The scorecard used by Abdo and Fisher (2007) and Kolobe (2010) was based on the King Committee Report (King II). The scorecard identified seven characteristics of good corporate governance: discipline, transparency, independence, accountability, responsibility, fairness and social responsibility (Abdo and Fisher, 2007). Interestingly, the results of both these studies were contradictory; Abdo and Fisher (2007) found a positive correlation between governance disclosure and share price returns during the period reviewed. Kolobe (2010) found a negative correlation between governance disclosure and share price returns, which implies that high governance disclosure results in lower financial returns. However, both the studies by Abdo and Fisher (2007) and Kolobe (2010) found that, on average, a higher governance disclosure leads to a higher firm valuation.

Numerous studies on the impact of corporate governance on the value of the firm have focused mainly on developed economies, especially the United States. The reason for this is that most corporate governance ratings do not have sufficient data for emerging markets. Bhagat and Bolton (2008) measured corporate governance in various listed companies in the United States by using a combination of indices (GIM and BCF) and single measures of corporate governance such as board independence, stock ownership by directors and CEO-Chair separation. They found that better governance as measured by both the GIM and BCF indices, stock ownership of board members and CEO-Chair separation is significantly positively correlated with operating performance. Surprisingly, they found that board independence is negatively correlated with operating performance. However, contrary to claims made in Gompers et al. (2003) and Bebchuk et al. (2008), Bhagat and Bolton (2008) found that none of the governance measures are correlated with future stock market performance, which is in agreement with the results by Kolobe (2010). Bhagat and Bolton (2008) cautioned that inferences regarding the stock market performance and governance relationship depends on whether or not one takes into account the endogenous nature of the

relationship between governance and stock market performance (Bhagat & Bolton, 2008). The most important message conveyed by Bhagat and Bolton (2008) is that the best findings are obtained by using a combination of different methods to measure governance: for example, a combination of indices and single-variable measures of governance.

Daines et al. (2010) studied the association between the ratings produced by leading commercial corporate governance rating firms and subsequent undesirable outcomes such as accounting restatements and shareholder litigation, as well as future operating performance, stock returns and the cost of debt for the period 2005 to 2007. Their study, in particular, considered “CGQ or Corporate Governance Quotient” (a rating produced through combining Risk Metrics and Institutional Shareholder Services), “GMI or Governance Metrics International” (a rating produced by Governance Metrics International), and “TCL or The Corporate Library” (a rating produced by The Corporate Library)” (Daines et al., 2010, p. 440). They found that these widely-used commercial governance ratings do not predict the different measures of corporate performance in any reliable way. They found little evidence that these rankings are useful in predicting subsequent accounting restatements or shareholder litigation (Daines et al., 2010).

Another study that used Governance Metrics International (GMI) governance data is the study by Bauer, Frijns, Otten and Tourani-Rad (2008), which focused on Japanese companies included in the Nikkei 225 over the year 2004. The GMI rating uses approximately five hundred corporate governance data points and groups them into the following six categories: board accountability, financial disclosure and internal controls, shareholder rights, remuneration, market for control and corporate behaviour (Bauer et al., 2008). They found that firms with a significantly high rating outperform firms with a low rating by 15.12% a year (Bauer et al., 2008).

Brown and Caylor (2006) used the Institutional Shareholder Services (ISS) governance rating, which uses fifty one data points grouped into eight categories: audit, board of directors, charter or bylaws, director education, executive and director compensation, ownership, progressive practices and state of incorporation (Brown & Caylor, 2006). They analysed 1,868 United States listed firms over 2003 and found that not all provisions in the ISS index are positively correlated with firm value. Their major findings were as follows:

I. Under the “audit” category, none of the provisions are correlated with firm value.

II. Under the “board of directors” category, only three of the 17 provisions classified by ISS are linked to firm value. These are as follows:

- All directors attended at least 75% of board meetings or had a valid excuse for non-attendance;
- Board members are elected annually; and
- Board guidelines are in each proxy statement.

III. Only one provision in the “charter or bylaws” category (out of seven classified by ISS in this category) is linked to firm valuation: the firm either has no poison pill or a pill exists that was shareholder-approved.

IV. Only two of the ten provisions ISS categorises as “executive and director compensation” are linked to firm valuation. These are: option re-pricing did not occur within the last three years and the average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3%.

V. Only one of the four governance provisions ISS categorises as “ownership” is linked to firm valuation: directors are subject to stock ownership guidelines.

VI. None of the seven provisions categorised by ISS as “progressive practices” is linked to firm valuation.

The Deminor Group is another company that reports corporate governance data for companies included in the FTSEurofirst 300 Index – the largest 300 European companies included in the major indices in Europe (FTSEurofirst, 2006) for the period 1999 to 2003. The Deminor rating groups company data according to the following criteria: board structure and functioning, anti-takeover mechanisms, shareholder rights and disclosure on corporate governance (Renders et al., 2010). After controlling for both sample selection bias and endogeneity simultaneously, they found a positive association between corporate governance and the value of the firm. In another European study, but this time focusing on one country, Drobetz, Schillhofer and Zimmermann (2004) constructed a corporate governance index by compiling thirty proxies for German companies listed on the German Stock Exchange for the period 1998 to 2002. The thirty proxies were divided into five categories: corporate governance commitment, shareholder rights, transparency, management and supervisory board matters and auditing (Drobetz et al., 2004). They found a positive association between corporate governance and firm value.

In summary, good corporate governance minimises agency costs and this is achieved when management and shareholders are aligned. The consequence of this alignment should be higher firm performance and valuation. As can be seen from the review of the theory above: the majority of research on corporate governance has focused mainly on its impact on firm performance and valuation, with the results being mixed. The main cause of mixed results is the measurement of corporate governance. The highest correlations between corporate governance and firm performance/valuation are obtained when all the provisions or components of corporate governance are highly correlated with one another. The mixed results obtained in some of the studies reviewed in this literature were caused by low correlations between the corporate governance provisions. This study will close this gap and ensure that all corporate governance provisions are highly correlated with one another.

2.1.4 Conclusion

Agency conflicts arise when managers adopt strategies that benefit themselves at the expense of shareholders. This misalignment between managers and shareholders is addressed by effective implementation of corporate governance. In essence, corporate governance is about reducing agency costs and protecting shareholder value.

Nowadays, commercial agencies that provide economic, social and governance (ESG) ratings are becoming more important in investment decisions by institutional investors. Investors are making decisions based on a company's overall sustainability strategy (which includes economic, social and corporate governance pillars) and not purely on the economic strategy. The focus of this study is only on the corporate governance pillar. However, it is important to note that all three pillars are also important in making investment decisions. Researchers have also started using ESG ratings as a source of governance data in academic research, which further emphasises the importance of these ratings in creating alignment between business and academia.

Table 1 below summarises past studies on the impact of corporate governance on firm valuation and/or operating performance. The table highlights the sample of the study and time period, the method used to measure corporate governance and the outcome of the study. The next section will review literature on corporate cash holdings: a variable that has not been linked to corporate governance as much as firm performance or firm value in the past, but is becoming increasingly important: especially in light of agency theory.

Table 2-1: Summary of selected studies on the impact of firm-level corporate governance on firm valuation / operating performance

Author(s)	Sample	Time Period	Corporate Governance (CG) Measure	Correlation with Firm Value / Operating Performance
Klapper & Love (2004)	374 companies in 14 emerging countries	1999	Credit Lyonnais Securities Asia (CLSA) rating	Positive correlation with firm value
Drobetz et al. (2004)	91 German listed companies	1998 - 2002	Ratings based on 30 principles	Positive correlation with firm value
Durnev & Kim (2005)	859 companies in 27 countries	1999 – 2001	Credit Lyonnais Securities Asia (CLSA) rating	Positive correlation with firm value
Black et al., (2006)	515 listed Korean companies	2001	Self-constructed CG rating	Positive correlation with market value
Brown & Caylor (2006)	1,868 US listed companies	2003	Institutional Shareholder Services (ISS) rating	Some provisions are related to firm value
Khanchel El Mehdi (2007)	24 listed Tunisian companies	2000 – 2005	8 different CG variables	Positive correlation with marginal market value
Abdo & Fisher (2007)	97 listed South African companies	2003 - 2006	Self-constructed scorecard based on the King Committee Report (King II)	Positive correlation with firm value
Bauer et al. (2008)	Japanese listed companies	2004	Governance Metrics International (GMI) rating	Positive correlation with operating performance
Garay & González (2008)	46 listed Venezuelan companies	2004	Self-constructed CG rating	Positive correlation with firm value
Bhagat & Bolton (2008)	US listed companies	Different Time Periods	Different CG measures	Positive correlation with operating performance but no correlation with share price performance
Kolobe (2010)	74 listed South African companies	2003 - 2006	Same scorecard used by Abdo & Fisher (2007)	Positive correlation with firm value but no correlation with share price performance
Daines et al. (2010)	US listed companies	2005 – 2007	ISS, GMI, The Corporate Library (TCL) and Accounting and Governance Risk (AGR) ratings	Limited evidence of a relationship
Renders et al. (2010)	European listed companies	1999 - 2003	Deminor ratings	Positive correlation with operating performance

Source: Renders et al. (2010, p. 90). The table in Renders et al. (2010, p. 90) has been amended to include additional studies.

2.2. Corporate Cash Holdings

2.2.1 Introduction

Corporate cash holdings have been known to serve two major functions in firms: transactional and precautionary (speculative) functions. Aside from these two functions, cash should not be kept idle in firms' books because it earns low interest compared to other investment alternatives. However, as discussed in Chapter One, cash balances in firms are slowly rising and this has prompted researchers to revisit the motives for holding cash and study the determinants of corporate cash holdings in firms. The literature discussed in this section will review these determinants as well as the benefits and risks of holding cash. The last section will link cash holdings to agency theory and corporate governance, as well as review past literature that has attempted to study this link.

2.2.2 Benefits and Risks of Corporate Cash Holdings

The uses, benefits and risks of cash holdings in companies have been well studied in literature (Al-Najjar, 2013; Palazzo, 2012; Bigelli & Sánchez-Vidal, 2012; Kusnadi & Wei, 2011; Kim, Kim & Woods, 2011; Lins, Servaes & Tufano, 2010; Ramı´rez & Tadesse, 2009; D'Mello, Krishnaswami & Larkin, 2008; Han & Qiu, 2007; Opler et al., 1999). Han & Qiu (2007) cite the original work of Keynes (1936) and mention two major benefits of cash holdings. Firstly, a firm can save transaction costs by using cash to make payments without having to liquidate assets (Han and Qiu, 2007). Secondly, and possibly more importantly, a firm can reserve cash to hedge against the risk of future cash shortfalls; this is the precautionary motive for holding cash (Han & Qiu, 2007; Lins et al., 2010; Kim et al., 2011; Palazzo, 2012).

A certain level of cash holdings is required to support the day-to-day operations of the firm, because cash cannot be raised instantaneously on a daily need basis (Dittmar & Mahrt-Smith, 2007). This transactional motive for holding cash has been discussed extensively in literature. In explaining the motives for holding cash, Han & Qiu (2007) first cite Miller and Orr (1966), who showed that brokerage costs could induce firms to hold more liquid assets; secondly they cite Myers and Majluf (1984), who argued that "raising external financing is more costly than using internally generated funds in the presence of asymmetric information and that it may be optimal for firms to hold a certain level of cash to meet the need for investment expenditures" (Han and Qiu, 2007, p. 44).

In recent academic literature on cash holdings, the precautionary motive for holding cash has been the subject of extensive research. Many firms are faced with the difficult situation of determining the optimal level of cash holdings by balancing the costs of running out of cash and the costs of holding non-interest bearing cash (Bigelli & Sánchez-Vidal, 2012). Cash flow volatility can affect a firm's cash holding behaviour (Han & Qiu, 2007). As a result, firms hold too much cash to smooth out the effects of cash flow volatilities.

The main risk for companies holding too much cash is that insiders can turn cash into private benefits (Fresard & Salva, 2010). This risk arises from the agency theory, which deals with the contractual relationship between shareholders and managers. In addition to the risk of cash being turned into private benefits in the hands of managers, too much cash can also lead to over-investment (Wei & Zhang, 2008), which may not be in the best interest of shareholders. In the absence of agency costs, a firm's spending on capital investments should be determined by investment opportunities in the market. However, when agency costs are high, managers tend to over-spend excess cash flow on capital projects even if there are no real investment opportunities. This is the free-cash flow hypothesis, which states that a positive relation exists between cash flow and corporate investments (Wei & Zhang, 2008).

2.2.3 Financial Determinants of Corporate Cash Holdings

The above risks of too much cash in the hands of managers have led researchers to study various determinants of cash holdings in companies. The following determinants of cash holdings in companies will be discussed briefly below: Capital structure, dividend payments, firm size, cash conversion cycle, cash flow, investment opportunities, asset liquidity and tax implications.

Al-Najjar (2013) found evidence that capital structure is an important factor in determining cash holdings. He suggests that leveraged firms are more likely to hoard cash due to the higher probability of financial distress. This therefore suggests that companies will hold less cash if they are able to raise debt. There is thus a negative association between leverage and cash holdings (Al-Najjar, 2013). This view is supported by Acharya, Almeida and Campello (2007), who state that most of the variables that are empirically associated with high cash levels are also known to be associated with low debt. Kim et al. (2011) mention that firms should not aim to hold high cash holdings and low leverage as this is one of the causes of high agency costs.

This gives rise to the free cash flow problem and such firms are inefficient because they erode shareholder wealth through investments that are less likely to be profitable. Therefore, Kim et al. (2011) propose that leverage can remedy the free cash flow problem because debt repayments serve as a disciplining force on management's actions and their ability to keep cash levels high.

The relationship between dividend payments and cash holdings depends on whether the company is public or privately-held. Public companies often attempt to make dividend payments regularly in order to reduce managerial agency costs (Bigelli & Sánchez-Vidal, 2012). This is because public companies often have to go back to the capital markets to raise financing for investments and will consequently have to be accurately monitored (Bigelli & Sánchez-Vidal, 2012). Therefore, public companies that pay dividends will tend to hold less cash. This view was supported by Al-Najjar (2013), who state that there is a negative association between dividends and cash holdings. Private companies normally cut dividends when they have difficulties in raising funds for investments (Bigelli & Sánchez-Vidal, 2012). This means that for private firms, the payment of dividends will be associated with high levels of cash holdings. However, the results by Kim et al. (2011) contradicted these findings; it discovered that restaurant firms in the United States paying dividends were found to hold less cash. Prior studies attempting to link dividend payments and cash holdings have thus been inconclusive.

D'Mello et al. (2008) argue that firm size is another important determinant of corporate cash holdings. In their argument, they state that larger firms have easier access to capital markets relative to small firms because they raise large amounts of capital frequently and therefore can exploit scale economies related to transaction costs. In contrast, smaller firms face higher constraints because of limited collateral and are less likely to exploit scale economies in transaction costs (D'Mello et al., 2008). This difficulty in accessing funds means that smaller firms derive greater benefits in holding cash reserves than their larger counterparts (D'Mello et al., 2008). Al-Najjar (2013) and Kim et al. (2011) support this view and confirm that there is a negative relationship between the cash-holding level and firm size.

In their study on cash holdings in private firms, Bigelli & Sánchez-Vidal, (2012) found that more cash is held by firms with longer cash conversion cycles. The reason for this is that firms with shorter cash conversion cycles generate cash quickly and therefore have lower financing deficits. Firms with shorter conversion cycles, therefore, will be able to take advantage of profitable opportunities whenever they present themselves.

The cash conversion cycle is closely related to cash flow, and Kim et al. (2011) argue that increased cash flow from operations sets management free by providing an easily tapped source of financing. Bao, Chan and Zhang (2012) add to this argument and state that firms experiencing positive cash flows have substantially more investment opportunities; while those experiencing negative cash flows, have fewer investment opportunities. Firms with greater investment opportunities will hold more cash in an attempt to reduce the likelihood of giving up these opportunities (Kim et al., 2011). This results in a positive relationship between investment opportunities and cash holdings and, because firms with positive cash flows have higher investment opportunities, this also suggests that firms with positive cash flows hold more cash. This inference, however, is in disagreement with the relationship established by Bigelli & Sánchez-Vidal (2012), which stated that firms with longer conversion cycles (and, as a result, lower cash flows) hold more cash..

Liquid assets are those assets that can easily be converted to cash. Al-Najjar (2013) argues that firms with more liquid assets are less likely to hoard cash because these liquid assets can be converted to cash quickly. Thus, there is a negative association between asset liquidity and cash holdings (Al-Najjar, 2013).

The tax implications of holding cash were studied by Foley et al. (2007), who found that United States corporations normally hold significant amounts of cash on their balance sheets and they attributed these significant cash holdings, in part, to the tax costs associated with repatriating foreign income (Foley, Hartzell, Titman & Twite, 2007).

2.2.4 Agency Costs, Firm-Level Governance and Corporate Cash Holdings

The concept of agency theory is applicable in the case of corporate cash holdings because, as Dittmar et al. (2003) elaborate, managers who are less concerned with shareholder wealth hoard cash and invest it in value-reducing projects or use it to overpay for acquisitions. In their study of cash holdings in family controlled firms, Kuan et al. (2011) argue that self-interested managers prefer to spend excess generated cash flows, rather than keeping it within the firm. This is in agreement with the study by Dittmar and Mahrt-Smith (2007), which studied the impact of corporate governance on the value of cash holdings and found that the value of a dollar of cash is substantially less if a firm has poor corporate governance. Their study focused on excess cash (rather than total cash) and they concluded that poorly governed firms waste excess cash resources and thus destroy firm value (Dittmar & Mahrt-Smith, 2007).

Harford et al. (2008) did a study on firm-level corporate governance using governance metrics based on anti-takeover provisions and inside ownership and found that firms with weaker governance structures have smaller cash reserves. They also found that when distributing cash to shareholders, firms with weaker governance structures choose to repurchase instead of increase dividends, avoiding future pay-out commitments (Harford et al., 2008). Harford et al.'s (2008) study was different from Dittmar and Mahrt-Smith's (2007) study in that it focused on total cash reserves in the firm and they found that poorly governed firms hold less cash. Both the studies by Dittmar and Mahrt-Smith (2007) and Harford et al. (2008) focused on firms in the United States and they used both the GIM-Index by Gompers et al. (2003) and the BCF-Index by Bebchuk et al. (2008) to measure firm-level corporate governance.

Harford et al. (2008) described three hypotheses that define the association between firm-level corporate governance and cash holdings: the *spending, shareholder power* and *flexibility* hypotheses. These hypotheses were further explained by Kuan et al. (2011), who studied the impact of corporate governance in family-controlled firms and used corporate governance data from the Taiwan Economic Journal (TEJ). The *spending* hypothesis argues that in the absence of effective control, managers would rather spend excess cash on projects, as opposed to keeping it in the firm. This theory predicts a positive association between effective corporate governance and cash holdings (Kuan et al., 2011).

The *shareholder power* hypothesis argues that due to friction in capital markets, transaction costs and information asymmetry between managers and capital markets, managers prefer to use internal cash holdings rather than using external funds (Kuan et al., 2011). Under perfect capital market assumptions, with no transaction costs and zero information asymmetry between managers and capital markets, external funds offer the same precautionary benefits as internal cash holdings (Lins et al., 2010). Under these perfect conditions, Lins et al. (2010) argue that the value of the firm would be unaffected: regardless of whether the firm uses internal or external funds to fund projects. The only difference in value would be the value of the cash itself. However, in real life, a cost is incurred when a firm makes use of external funds to fund projects. In addition, external funds are not guaranteed: they provide conditional liquidity, because a firm can only obtain these funds if it is doing well and satisfies the restrictions imposed by the lender. The *shareholder power* hypothesis argues that if a firm relies more on external credit lines than internal cash, it may end up under-investing because

of the inability to gain access to credit lines. Therefore, according to this theory, there is a positive association between corporate governance and cash holdings: shareholders who have more effective control rights, allow managers to build up cash reserves in order to prevent underinvestment (Kuan et al., 2011).

The *flexibility* hypothesis argues that managers keep enough cash so that financing is quickly available for good investments (Kuan et al., 2011). This is the precautionary motive for holding cash. Cash provides the flexibility required for managers to take advantage of lucrative opportunities as they present themselves. According to this theory, there is a negative relationship between corporate governance and cash holdings. The argument is that if the shareholders' control of managers is poor, managers tend to hold excess cash reserves (Kuan et al., 2011). In addition, one can also think about the flexibility hypothesis by considering the correlation between cash flow and an aggregate shock in the firm (i.e. the riskiness of the firm). Normally, in riskier firms, there is less effective shareholder control of managers and access to external funds is costly. Therefore, as Palazzo (2012) discovered, riskier firms tend to hoard cash as a hedge against the risk of a future cash flow shortfall.

2.2.5 Conclusion

Historically, it has been known that cash is held by firms for transactional and precautionary motives. While it may be relatively easy for firms to estimate the transactional requirements of cash, estimating the cash required for precautionary motives is not an easy task. In light of agency theory, too much cash in the hands of management can lead to actions taken that may not be in the interest of shareholders: such as spending cash on projects that do not enhance shareholder value. The application of agency theory to cash holdings argues that company insiders or managers can exploit cash holdings to suit their goals at the expense of shareholders.

Studies have been done to determine how cash is affected by capital structure, dividend payments, firm size, the cash conversion cycle within the firm, liquidity and tax implications. Several theories linking corporate governance and cash holdings have been developed to help explain the impact of corporate governance on cash holdings. As can be seen from the discussions above, one can easily predict how cash is affected by these variables. However, it is not easy to predict the impact of corporate governance on cash holdings; what makes this difficult is that what may seem to be the

'normal' cash level for one firm may be 'too much' cash for another firm. As a result, several models explaining the impact of corporate governance on cash holdings from a *spending, shareholder power* and *flexibility* points of view have been developed by (Harford et al., 2008). Table 1 below summarises past studies on the impact of firm-level and country-level corporate governance on corporate cash holdings.

Table 2-2: Summary of selected studies on the impact of firm-level and country-level corporate governance on corporate cash holdings

Firm-Level Corporate Governance

Author(s)	Sample	Time Period	Firm-Level Corporate Governance Measure	Correlation with Corporate Cash Holdings
Dittmar and Mahrt-Smith (2007)	1,952 US listed companies	1990 - 2003	Gompers et al. (2003) (GIM) and Bebchuk et al. (2008) (BCF) indices based on IRRC data	Positive correlation with cash holdings
Harford et al. (2008)	1,500 US listed companies	1998 - 2002	Indices of the following provisions: 1. Antitakeover provisions (GIM and BCF indices) 2. Ownership concentration and executive compensation 3. Board characteristics and governance	Positive correlation with cash holdings
Kuan et al. (2011)	1164 Taiwanese family-controlled firms	1997 – 2008	Taiwanese corporate govenance data from Taiwan Economic Journal (TEJ), with emphasis on separation of ownership rights, ownership structure and board structure	The effects of corporate governance on cash holdings differ between family-controlled firms and non-family controlled firms

Country-Level Corporate Governance

Author(s)	Sample	Time Period	Country-Level Corporate Governance Measure	Correlation with Corporate Cash Holdings
Dittmar et al. (2003)	11,000 firms in 45 countries	1998	Shareholder rights measure developed by La Porta, Lopez-De Silanes, Shleifer, & Vishny (1998)	Negative correlation with cash holdings
Chang and Noorbakhsh (2006)	22,000 firms in 48 countries	2000	Shareholder rights measure developed by La Porta, Lopez-De Silanes, Shleifer, & Vishny (1998)	Negative correlation with cash holdings

2.3. Corporate Governance and Corporate Cash Holdings in Emerging Markets

2.3.1 Introduction

Emerging market firms are becoming important global players in providing goods and services. Consequently, academic researchers are also starting to focus on emerging markets and are incorporating emerging market firms in their samples for analysis. This section will review some of the literature on corporate governance and corporate cash holdings that either included emerging market firms in the study or were focusing solely on emerging markets. Some of the studies focusing on emerging markets have already been discussed in prior sections. This section, therefore, will only highlight the important principles or outcomes that emerged from selected studies.

2.3.2 Corporate Governance in Emerging Markets

In recent years, researchers have been focusing their attention on studying corporate governance in emerging markets (Fan et al., 2011; Young et al., 2008; Claessens & Yurtoglu, 2013; Morey et al., 2009; Ananchotikul & Eichengreen, 2009; O'Connor et al., 2014; Black et al., 2012; Klapper & Love, 2004). A number of studies focusing on emerging countries show that companies use the weak legal environment and the leeway in corporate governance recommendations to signal their quality (Durnev and Kim, 2005; Klapper and Love, 2004). In other words, firms in emerging markets adopt good corporate governance practices to distinguish themselves from other emerging market firms. As a result, corporate governance in emerging markets has a high impact on the market value of firms. Abdo and Fisher (2007) and Renders et al. (2010) found that this is indeed the case. Abdo and Fisher (2007) indicated that corporate governance is particularly relevant in developing economies, where the injection of foreign investment is essential to economic growth. They went further and cited a study by Rose (2003), which found that investors in certain emerging market countries would pay a premium of between 23% and 28% for shares in a company with "good" corporate governance, as opposed to a poorly governed company with similar financial performance.

In developed economies, legal mechanisms protect shareholders' interests in companies and the only conflicts that arise are the agency conflicts between managers and shareholders (Jensen & Meckling, 1976). Contradictorily, the weak institutional mechanisms in emerging economies make the enforcement of agency contracts more costly and problematic (Wright, Filatotchev, Hoskisson & Peng, 2005). However, it is important to note that even in developed economies, especially in the United States,

high-profile management scandals such as Enron and WorldCom, as well as the latest subprime mortgage crisis, occur. These serve as a reminder that even countries with relatively sophisticated financial markets, have corporate governance problems (Ananchotikul and Eichengreen, 2009).

Historically, emerging markets lag behind developed economies in terms of economic significance (Fan et al., 2011) and corporate governance (Claessens & Yurtoglu, 2013). There have, however, been great improvements in corporate governance reform in emerging markets in the past few decades, but progress has been slow; some countries are progressing faster than others (Ananchotikul & Eichengreen, 2009). "Good governance is achieved principally through rules that protect minority investors" (Black et al., 2012, p. 935). Since it has been shown that legal rules in developed and emerging markets are different, then the definition of "good governance" is not the same in the two economies. In other words, one cannot apply the same legal rules to an emerging market as the ones applied to a developed market: optimal governance differs between developed and emerging markets (Black et al., 2012; Ananchotikul & Eichengreen, 2009; Claessens & Yurtoglu, 2013) and potentially also between emerging markets themselves (Durnev & Fauver, 2007; Black et al., 2012).

2.3.3 Corporate Cash Holdings in Emerging Markets

Not much literature was found on the study of corporate cash holdings which focus on emerging markets. In his research on the financial determinants of corporate cash holdings, Al-Najjar (2013) mentions that, to the best of his knowledge, his paper is among the first to study cash holdings in emerging markets. Emerging markets, because of their diverse institutional environments, are important in gaining further knowledge on corporate cash holdings. Socio-economic factors, including laws and institutional structures, are normally weak in emerging markets relative to those in developed markets such as the United States (Al-Najjar, 2013).

The impact of firm-level corporate governance on corporate cash holdings in emerging markets has not been studied before. However, the impact of country-level governance on cash holdings has been studied before by Dittmar et al. (2003) and Chang and Noorbakhsh (2006). Country-level governance incorporates variables such as legal systems and institutional protection of investors. Dittmar et al. (2003) studied 11000 firms in 45 countries and concluded that firms in countries with low levels of shareholder protection hold more cash than firms in countries with higher levels of

shareholder protection. The results of this study are in agreement with the concept of agency theory: high levels of cash holdings in a firm can be taken as evidence for an existence of an agency problem in that firm (Chang & Noorbakhsh, 2009).

Fresard and Salva (2010) argue that home-country institutional protection of investors has an impact on whether firms will hold more or less cash. They studied firms that have a dual listing both in their home countries and in the United States and they found strong evidence that a United States cross-listing significantly mitigates the risk of managers turning the firm's cash holdings into private benefits (Fresard & Salva, 2010). They attributed this finding to the strength of the United States legal rules and disclosure requirements.

2.3.4 Conclusion

"Good" firm-level corporate governance in emerging markets is much more valuable than "good" firm-level corporate governance in developed markets. This is because, in general, emerging markets have weaker legal systems than developed markets. As a result, "good" firm-level governance in emerging markets is not the same as "good" firm-level governance in developed markets. This is also clear from investors' valuation of firms in developed and emerging markets: investors usually pay a much higher premium for well-run firms with good corporate governance structures in emerging markets than for similar firms in developed markets. Thus, a very important differentiation strategy for firms in emerging markets is to adopt effective firm-level corporate governance structures.

Researchers have discovered that, in general, firms in emerging markets tend to hold larger cash balances than firms in similar industries in developed markets. This is because capital market scrutiny in emerging markets is not as intense as it is in developed markets. Emerging market firms can therefore accumulate larger cash balances and, in general, larger cash balances than the industry norms are associated with the potential for higher agency costs.

2.4. Conclusion to Chapter Two

A wealth of research has been done on the link between corporate governance and firm performance, with the results being mixed. One of the reasons for the mixed results is the use of corporate governance measures that include provisions that are uncorrelated with one another. Consequently, most researchers agree that commercial governance ratings offered by corporate governance advisory firms do not always yield consistent results. The mechanism by which corporate governance affects company performance has not been studied much in previous studies. Cash holding is one important mechanism that affects company performance and it is the focus of this study. Corporate governance practices in emerging markets are different from those in developed countries and there are differences between countries in emerging markets themselves. Generally, firm-level corporate governance is valued less in countries with strong legal systems and more highly valued in countries with weak legal systems.

Agency theory is an important element of cash holdings because cash can easily be turned into private benefits by managers. In addition, it can be invested in unprofitable projects by unconcerned managers or used to over-pay for acquisitions. Therefore, corporate governance is important in minimising agency costs and ensuring that cash is used in a manner that increases shareholder value. Most of the studies on the impact of corporate governance on the value of the firm were done in developed countries, especially in the United States; researchers are starting to focus their attention on emerging markets because of less-developed legal systems protecting minority investors. However, the impact of firm-level corporate governance on corporate cash holdings has not been studied on emerging market firms before. Such a study would be useful to emerging market firms and firms in developed markets aiming to set up businesses in emerging markets. This is because these companies will be using cash to expand their operations and the proper use of cash is one of the important determinants of firm value and shareholder wealth. Therefore, this research will add to the body of knowledge by studying the impact of firm-level corporate governance on corporate cash holdings in emerging market firms.

Chapter 3 : Research Questions

3.1. Introduction

The previous chapter discussed the literature on corporate governance, corporate cash holdings and their relevance in emerging markets. The chapter also discussed some of the earlier studies about the link between corporate governance and company performance; as well as the hypotheses explaining the relationship between corporate governance and corporate cash holdings. From the literature review, it is clear that there is a need to study the impact of firm-level corporate governance on emerging market firms because it has not been studied before. In addition, the measure of corporate governance should include provisions that are correlated with one another to avoid mixed results. This study will address these issues. Focusing on emerging markets, this chapter will present research questions aimed at establishing if a relationship between firm-level corporate governance and cash holdings exists

3.2. Research Questions

A research question is "one overall question or a number of key questions that the research process will address" (Saunders & Lewis, 2012, p. 19). The primary research question is whether the level of corporate cash holdings is influenced by firm-level corporate governance within publicly listed firms operating in emerging markets. This area of research has been done previously for firms in the United States. All studies linking firm-level corporate governance and cash holdings done in the United States indicate that a positive association exists between cash holdings and corporate governance, suggesting that the *shareholder power* and/or *spending* hypotheses are dominant themes for firms operating in this market.

A gap in the literature is the study of the impact of firm-level corporate governance on cash holdings in emerging market firms. The literature review revealed that due to differences in legal systems and institutional protection of investors in developed and emerging economies, country-level governance is not the same in both types of economies. The relationship between firm-level corporate governance and cash holdings in developed economies is known; this paper will attempt to establish if this relationship applies to emerging economies. In order to do that, the following research questions have been created:

3.2.1 Research Question One: Firm-level Corporate Governance

RQ_{CG}: Is there an association between firm-level corporate governance and the level of cash holdings in firms situated in emerging markets?

3.2.2 Research Question Two: Board of Directors

RQ_{CGBOD}: Is there an association between board characteristics and the level of cash holdings in firms situated in emerging markets?

3.2.3 Research Question Three: Shareholder Rights

RQ_{CGSR}: Is there an association between shareholder rights and the level of cash holdings in firms situated in emerging markets?

3.2.4 Research Question Four: Vision and Strategy

RQ_{CGVS}: Is there an association between vision and strategy and the level of cash holdings in firms situated in emerging markets?

3.3. Conclusion to Chapter Three

Chapter Three developed research questions to determine the impact of firm-level corporate governance and its categories on corporate cash holdings in emerging markets. These research questions will be answered by collecting and analysing data on emerging market firms.

Chapter 4 : Research Methodology

4.1. Introduction

The previous chapter developed the research questions, which focused on corporate governance and the different categories of corporate governance; and whether they are associated with corporate cash holdings. This chapter will explain the research methodology in detail that was followed to gather the data in order to answer the research questions developed in Chapter Three.

4.2. Research Design

A research design is "a master plan specifying the methods and procedures for collecting and analysing the needed information" (Zikmund, 2000, p. 59). The research design for this study was quantitative and deductive in nature. Deductive research is an approach which involves the testing of a theoretical proposition by using a research strategy specifically designed for the purpose of its testing (Saunders & Lewis, 2012). In this study, the aim was to test if the relationship between firm-level corporate governance and cash holdings established for developed market firms by previous authors, holds for emerging market firms. Two types of quantitative approaches exist: descriptive and causal studies (Chipp, 2014). Descriptive research seeks to describe events or situations, while causal or explanatory research "takes descriptive research a stage further by looking for an explanation behind a particular occurrence through the discovery of causal relationships between key variables" (Saunders & Lewis, 2012, p. 113). This study was an explanatory study because its aim was to establish if there is a relationship between firm-level corporate governance and corporate cash holdings.

A quantitative approach was chosen because the aim was not to explore new insights on firm-level corporate governance and corporate cash holdings. The aim was to establish relationships between variables that were already studied by prior authors. The type of study was a longitudinal study and focused on secondary data to establish correlations between the same variables over a certain period of time (2009 – 2012). The main purpose of the study was to establish if firm-level corporate governance is negatively or positively correlated, or uncorrelated to the level of corporate cash holdings in emerging markets. The variables that were studied in this research are described in detail below:

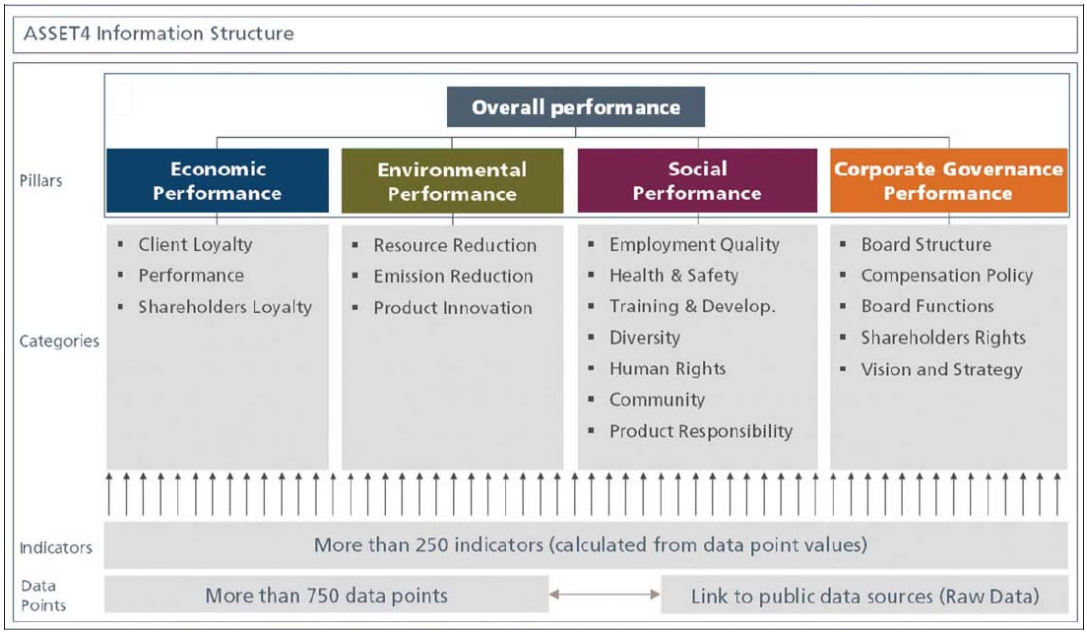
4.2.1 Independent Variable

"An independent variable is a variable that is expected to influence the dependent variable. Its value may be changed or altered independently of any other variable" (Zikmund, 2000, p. 92). The main independent variable involved in this study was firm-level corporate governance and its categories. Firm-level corporate governance is normally stable over time, its value is influenced by the strength of a company's systems and procedures aimed at reducing agency costs in the firm. This data were obtained from Thomson Reuters DataStream.

4.2.1.1. Firm-level corporate governance

ASSET4 ESG is a combination of ratings that show the performance of a company's activities that affect the environmental, social and governance (ESG) spheres. The ratings belong to ASSET4, which is a company that was founded in Switzerland in 2003. The company has been collecting ESG data since 2002 and it was acquired in late 2009 by Thomson Reuters. After this acquisition was complete, ASSET4 ESG data was available in Thomson Reuters DataStream. The Asset4 ESG ratings are both qualitative and quantitative and cover 3100 global companies and score them on four pillars: Environmental, Social, Corporate Governance and Economic (Ribando & Bonne, 2010). Figure 4-1 below shows the four pillars of the ASSET4 ESG ratings and the categories that fall under each pillar.

Figure 4-1: ASSET4 ESG measure showing the Corporate Governance categories



Source: Thomson Reuters DataStream

ESG investing is becoming popular as an investment strategy and in its early stages it was referred to as Socially Responsible Investing (SRI). “Companies practising good ESG policies decrease their environmental impact by reducing carbon emissions and water usage, are socially responsible in their treatment of employees and their role in the community, and establish corporate governance best practices for an independent, fairly compensated board that protects shareholders’ rights” (Ribando & Bonne, 2010, p. 1). Companies that adhere to ESG principles are viewed in high regard by investors. From a risk mitigation point of view, such companies have a low risk of being subjected to costly events such as environmental clean-ups and corporate fraud (Ribando & Bonne, 2010). In the short term, it may appear costly for a company to make changes in order to adhere to ESG principles, but the long term benefits have been shown to outweigh these costs. Consequently, institutional and individual investors are increasingly making use of ESG data and incorporating it in their investment process.

The ASSET4 ESG ratings were used in gathering firm-level corporate governance data. The ratings have 18 categories grouped into four pillars that are integrated into a single overall score (see Figure 4-1 above). However, the focus of this study was only on the corporate governance pillar. Data on the other pillars (economic, environmental and social performances) were not collected in this study because the aim of the study is to determine the impact of firm-level corporate governance on cash holdings. The corporate governance pillar has 5 categories: board structure, compensation policy, board functions, shareholder rights and vision and strategy. The first three categories of corporate governance performance include the characteristics and the actions of the board of directors, while shareholder rights include management’s commitment to protecting minority shareholders. Vision and strategy is part of the overarching role of integration. The definitions of these categories are explained in detail in Table 4-1 below.

Appendix 1 shows all the indicators of each category under the Corporate Governance Performance, which are the questions that need to be answered in order for each company to be able to calculate a category score. Answers to these questions are sourced from publicly available information and consolidated into Thomson Reuters DataStream. Most of these questions require a Yes or No (= 1 or 0) answer, which is converted into a percentage (%) using z-scoring. “A Z Score, or "standard score" is a relative measure comparing one company with a given benchmark. It expresses the value in units of standard deviation of that value from the mean value of all companies” (Thomson Reuters, 2012, p. 1). The values for pillars, categories and indicators were

calculated by equally weighting and z-scoring all underlying data points and comparing them against all companies in the ASSET4 universe (Thomson Reuters, 2012). The fourth column in Appendix 1 shows whether a high percentage obtained signifies a negative or positive attribute. For all pillar and category scores (highlighted in yellow in Appendix 1), a high percentage signifies a positive attribute.

Table 4-1: Definitions of the ASSET4 ESG Corporate Governance Pillar and its categories

Pillar / Score	Name of Pillar / Score	EXPLANATION OF PILLAR/CATEGORY	Measurement Unit
Pillar Score	Corporate Governance	The corporate governance pillar measures a company's systems and processes, which ensure that its board members and executives act in the best interests of its long term shareholders.	Percent
Category Score	Board of Directors / Board Structure	The board of directors/board structure category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to a well-balanced membership of the board.	Percent
Category Score	Board of Directors / Compensation Policy	The board of directors/compensation policy category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to competitive and proportionate management compensation.	Percent
Category Score	Board of Directors / Board Functions	The board of directors/board functions category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to board activities and functions.	Percent

Category Score	Shareholders / Shareholder Rights	The shareholders/shareholder rights category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to a shareholder policy and equal treatment of shareholders.	Percent
Category Score	Integration / Vision and Strategy	The integration/vision and strategy category measures a company's management commitment and effectiveness towards the creation of an overarching vision and strategy integrating financial and extra-financial aspects.	Percent

Source: ASSET4 ESG Data Glossary (Thomson Reuters, 2010)

4.2.2 Dependent Variable

"A dependent variable is a variable that is to be predicted or explained" (Zikmund, 2000, p. 91). The dependent variable involved in this research was the ratio of cash and cash equivalents (marketable securities) to total assets. The rationale behind this ratio is that a firm's ability to generate future profits is a function of its assets in place. This data was obtained from Thomson Reuters DataStream.

4.2.2.1. Corporate cash holdings

Corporate cash holdings appear on the asset side of a firm's balance sheet. As per the studies involving cash holdings by Dittmar and Mahrt-Smith (2007); Arslan, Florackis and Ozkan (2006); Guney, Ozkan and Ozkan (2007); Kim et al., (2011); Kusnadi and Wei (2011); Bao et al. (2012); Bigelli and Sánchez-Vidal (2012) and Al-Najjar (2013), cash holding by each firm was measured by the ratio of cash and cash equivalents to total assets.

4.3. Universe / Population

Saunders and Lewis, (2012) state that a universe is a complete set of group members. In this study, the universe was all the publicly listed companies that operate in emerging markets. The world is dominated by emerging economies in terms of population and geographic size (Fan et al., 2011). However, the bulk of research in corporate governance and finance is still concentrated in advanced economies. In addition, over the past few decades, more and more institutional differences have been discovered between emerging markets and advanced economies, and between

emerging markets themselves. Therefore, a universe of firms in emerging markets was chosen because of its wide variation in corporate governance systems.

4.4. Unit of Analysis

The unit of analysis was the single publicly listed company operating in emerging markets during the period 2009 - 2012. This unit of analysis was chosen because the level of investigation of the problem focused on the collection of data regarding organisations.

4.5. Sampling

"Sampling involves any procedure that uses a small number of items or that uses parts of the population to make a conclusion regarding the whole population" (Zikmund, 2000, p. 64). In this research, the aim was to form a conclusion about the influence of firm-level corporate governance on cash holdings in emerging markets. A sample consisting of firms in selected emerging countries was chosen. The selection criteria for these countries were based on the availability of data, in particular corporate governance data. The countries chosen are shown in Table 4-2 below:

Table 4-2: List of emerging countries studied in this research

Number	Country
1	Abu Dhabi
2	Brazil
3	Chile
4	China
5	Colombia
6	Egypt
7	Hong Kong
8	India
9	Indonesia
10	Mexico
11	Philippines
12	Russia
13	Singapore
14	South Africa
15	Taiwan
16	Thailand
17	Turkey

All of these countries were included in prior studies involving corporate governance in emerging countries; only Abu Dhabi and Colombia were not part of prior studies and were studied for the first time in this paper. An important part of sampling was to ensure that the firms chosen in the sample were listed on their home country's stock exchange. This was done to ensure that the firm-level corporate governance data collected correctly reflected the general strength of corporate governance within the firms in the countries chosen. This is important because the study by Fresard and Salva (2010) found that emerging market firms with cross-listing in the United States are better governed than firms only listed on the home-country stock exchange.

To get an idea of the regional and overall influence of the stock exchanges of the countries selected in the sample, the World Federation of Exchanges (2014) was consulted. The Federation divides countries into three regions: The Americas, Asia-Pacific and Europe-Africa-Middle East. Appendix 2 shows the domestic market capitalisations of 56 countries (which includes emerging and developed countries) included in the World Federation of Exchanges (2014). It also shows the market capitalisations of the countries' stock exchanges for 2013 and 2014 (in millions of local currencies) and the percentage changes from 2013 to 2014. Emerging countries included in the sample were extracted from Appendix 2. Table 4-3 lists all the countries included in the sample, the market capitalisation of the country's exchange(s) in 2014 in the local currency and in US dollars, the country's overall ranking (out of 56 stock exchanges) and the ranking of the countries in their respective regions (i.e. within The Americas, Asia-Pacific and Europe-Africa-Middle East). The local currencies were changed to US dollars using the exchange rates on the 31st January 2014.

Most of the emerging markets selected were from Asia-Pacific (8 countries), followed by Europe-Africa-Middle East (5 countries) and The Americas (4 countries). As with prior studies, Hong Kong was shown as a separate country, rather than forming part of China. Table 4-3 reveals that emerging market stock exchanges with the highest market capitalisations are mostly situated in the Asia-Pacific region, while those with the lowest market capitalisations are mostly situated in the Europe-Africa-Middle East region. Overall, the sample of countries selected was roughly spread throughout the spectrum of 56 countries included in the World Federation of Exchanges (2014).

Table 4-3: Market capitalisations, regional and overall rankings of emerging countries to be included in the sample

Country	Stock Exchanges	Region	Domestic Currency ('000 000)	Domestic Currency (Millions of USD)	Overall Ranking (Out of 56 Stock Exchanges)	Regional Ranking
Hong Kong	Hong Kong Exchanges	Asia-Pacific	22,971,999	2,958,216	5	2
China	Shanghai SE	Asia-Pacific	14,631,212	2,397,270	6	3
China	Shenzhen SE	Asia-Pacific	9,151,356	1,499,416	10	4
India	Bombay SE	Asia-Pacific	67,443,984	1,077,177	15	7
India	National Stock Exchange	Asia-Pacific	65,907,848	1,052,643	16	8
Brazil	Sao Paulo (BM&FBOVESPA)	Americas	2,206,593	910,250	17	4
South Africa	Johannesburg SE	Europe-Africa-Middle East	9,674,094	859,996	18	6
Taiwan	Taiwan SE (Taipei)	Asia-Pacific	24,137,806	794,713	19	9
Singapore	Singapore Exchange	Asia-Pacific	915,784	717,839	20	10
Russia	Moscow Exchange	Europe-Africa-Middle East	24,779,258	706,431	21	7
Mexico	Mexican Exchanges	Americas	6,589,945	492,776	22	5
Indonesia	Indonesia SE (Jakarta)	Asia-Pacific	4,382,396,369	360,670	25	12
Thailand	The SE of Thailand (Bangkok)	Asia-Pacific	11,437,544	347,354	26	13
Chile	Santiago SE	Americas	131,584,686	240,338	28	6
Philippines	Philippine SE	Asia-Pacific	9,902,947	218,873	29	14
Colombia	Colombia SE	Americas	364,180,917	181,185	32	7
Turkey	Borsa Istanbul	Europe-Africa-Middle East	391,500	172,963	33	12
Egypt	Egyptian Exchange (Cairo)	Europe-Africa-Middle East	433,881	65,259	43	15
Abu Dhabi	Abu Dhabi	Europe-Africa-Middle East	453,163	118,146	36	19

Source: Market capitalisation data comes from the World Federation of Exchanges (2014), after converting currencies to a common currency (USD)

4.6. Research Instrument / Measurement

Secondary, or historical data, are data “gathered and recorded by someone else prior to (and for purposes other than) the current project" (Zikmund, Babin, Carr & Griffin, 2008). Secondary data with financials of publicly listed companies in emerging markets was collected from the Thomson Reuters DataStream. The main limitation of using secondary data for this study is the lack of control over the quality of data. However, Thomson Reuters DataStream is a reputable database used by researchers and business leaders all over the world. Therefore, this limitation does not negatively impact this study. This database consists of firm financial data from different industry groups identified by the Standard Industry Codes (SIC) shown in Table 4-4 below.

Table 4-4: Industries which were studied and their respective industry codes

Industry Code	Industry Group
1300	Aerospace
1600	Apparel
1900	Automotive
2200	Beverages
2500	Chemicals
2800	Construction
3100	Diversified
3400	Drugs, Cosmetics & Healthcare
3700	Electrical
4000	Electronics
4600	Food
4900	Machinery & Equipment
5200	Metal Producers
5500	Metal Product Manufacturers
5800	Oil, Gas, Coal & Related Services
6100	Paper
6400	Printing & Publishing
6700	Recreation
7000	Retailers
7300	Textiles
7600	Tobacco
7900	Transportation
8200	Utilities
8500	Miscellaneous

Source: Thompson Reuters DataStream

4.7. Data Collection

Data collected for each company consisted of static and time-series data. Static data are data that did not change with time, while time-series data varied from year to year. Tables 4-5 and 4-6 show the data collected and the data type mnemonics used as search codes in DataStream to search for the data.

Table 4-5: Static data collected (categorical data)

Data Type Name	Data Type Mnemonic
General Industry Classification	WC06010
Industry Group	WC06011
Stock Exchange(s) Listed	WC05427

Source: Thompson Reuters DataStream

Table 4-6: Time-series data collected (continuous data)

Data Type Name	Data Type Mnemonic
Cash & Equivalents (i.e. Cash & Short-Term Investments)	WC02001
Total Assets	WC02999
Corporate Governance Score	CGVSCORE
Board of Directors/Board Structure	CGBS
Board of Directors/Compensation Policy	CGCP
Board of Directors/Board Functions	CGBF
Shareholders /Shareholder Rights	CGSR
Integration/Vision and Strategy	CGVS

Source: Thompson Reuters DataStream

Firms in the financial industry were excluded from the sample because their businesses imply holding marketable and statutory capital requirements that could have affected their investment choices (Fresard & Salva, 2010). The process followed in cleaning and transforming the data is explained in detail in Chapter Five (section 5.2).

4.8. Data Analysis Approach

The data analysis tool used in this study is the Statistical Package for the Social Sciences (SPSS). This is a software package used for statistical analysis owned by the International Business Machines (IBM) Corporation. The main analysis approach that was used in this study was the determination of the strength and direction of the linear relationship between the independent variable(s) and a dependent variable. This technique is called correlation analysis. "The simple correlation coefficient is a

statistical measure of the co-variation, or association between two variables" (Zikmund et al., 2008). It is important to note that this research was not meant to determine causality between the independent and dependent variables, rather it was meant to determine the association between the variables (i.e. correlation coefficients).

The study involved bivariate (research questions one, three and four) and multivariate (research question two) correlation analyses. Bivariate correlation analysis determines the linear association between two variables at a time, while multivariate analysis determines the linear association between multiple independent variables and a single dependent variable. Statistical testing to answer the research questions has been done at 95% confidence level. The reason for this is that all results that are significant at 99% confidence level are also significant at 95%. The assumptions and limitations for using the data collected in this study, to conduct statistical tests and answer the research questions, are explained in detail in Chapter Five. Table 4-7 below, taken from Cohen (1988), was used in assigning strengths of associations to values.

Table 4-7: Guideline used for strengths of associations

Coefficient Value	Strength of Association
$0.1 < \| r \| < 0.3$	small correlation
$0.3 < \| r \| < 0.5$	medium/moderate correlation
$\| r \| > 0.5$	large/strong correlation

Source: Cohen (1988)

Data analysis for the research questions were as follows:

- Research question one was answered by determining the Pearson correlation coefficient between firm-level corporate governance and cash to total assets. Data for firm-level corporate governance, cash and cash equivalents and total assets were obtained from Thomson Reuters DataStream. The aim of this research question was to determine if there was any association between firm-level corporate governance and cash holdings.

- Research question two was answered by determining the association between board structure, compensation policy and board functions (Independent variables) and cash to total assets (dependent variable). This association has been tested using a multiple linear regression to explore the association between one continuous dependent variable (cash to total assets) and a number of independent variables. The theory behind this association is that board structure, compensation policy and board functions are scores that relate

to actions of the board of directors; and the aim was to explore the relationship between the actions of the board of directors and cash to total assets. Data for the individual scores of independent and dependent variables were obtained from Thomson Reuters DataStream. There were a number of requirements that the data had to meet prior to using them to perform a multiple regression: the data had been tested to ensure that they met these requirements. The aim of this research question was to determine if there was any association between board characteristics (board of directors) and cash holdings.

- Research questions three and four were answered by determining the Pearson correlation coefficient between shareholder rights (research question three); vision and strategy (research question four) and cash to total assets. Data for shareholder rights, vision and strategy, cash and cash equivalents and total assets were obtained from Thomson Reuters DataStream. The aims of these research questions were to determine if there was any association between shareholder rights / vision and strategy and cash holdings.

4.9. Data Limitations

The main data limitation was the unavailability of corporate governance data and its relevant categories. Time-series data was initially planned to be collected as annual data for the period starting from 1st January 2003 to 31st December 2013. However, it was then discovered that for most companies, ASSET4 ESG corporate governance data only started appearing in DataStream from 2009 onwards because Thomson Reuters acquired ASSET4 ESG in that year. In addition, corporate governance data for 2013 was also missing for most companies. Therefore, the time period of data collection was narrowed to the period 1st January 2009 to 31st December 2012 and was collected annually.

4.10. Conclusion to Chapter Four

This chapter discussed the methodology that was used to conduct this research. Secondary data on 17 emerging market economies were collected from Thomson Reuters DataStream. The independent variables involved in this research were firm-level corporate governance and its categories, while the dependent variable was corporate cash holdings, represented as a fraction of the total assets held in cash and marketable securities.

The remainder of this paper is structured as follows: Chapter Five presents the research results: including descriptive data and the results of the tests to answer the research questions; Chapter Six presents an analysis of the results using the theoretical foundation presented in Chapter Two; and Chapter Seven concludes the research and discusses the limitations of the research as well as highlighting areas for future research.

Chapter 5 : Results

5.1. Introduction

The previous chapter explained the methodology which was used to answer the research questions outlined in Chapter Three. Chapter Five will present the results obtained from the research process. The first part of the chapter describes the basic data collected on 17 emerging market economies using Thomson Reuters DataStream and the process followed in cleaning the data; the second part presents descriptive data and the third part presents the results for each of the research questions.

5.2. Cleaning and Transforming Data

Two types of data were collected from Thomson Reuters DataStream for each company in the 17 emerging market economies selected: Time-series and static data (shown in Tables 4-5 and 4-6). The process followed in cleaning up the data collected is briefly described below:

5.2.1 Missing Data and Data Cleaning

The companies included in the sample were chosen based on the availability of data. Any company that had all the data types shown in Tables 4-5 and 4-6 was included in the sample. The original sample collected from Data Stream was aggressive and consisted of 15,845 companies situated in 26 emerging markets as shown in Table 5-1.

The initial period of consideration was 2003 – 2013. However, it was then discovered that most companies in emerging markets do not have corporate governance data at all. Those that have corporate governance data, do not have it for the full period of consideration; the data only started appearing in DataStream from 2009 onwards. The period of consideration was then reduced to 2009 – 2012. No corporate governance data was available in any of the companies in Ecuador, Azerbaijan, Bangladesh, Bulgaria, Vietnam, Romania, Sri Lanka, Malaysia and Pakistan. As a result, these countries were removed from the sample. The set of actions taken to clean up the data in Table 5-1 are discussed below.

Table 5-1: Original data set collected from Thompson Reuters DataStream

Country	Number of Companies
India	2985
China	1988
Hong Kong	1568
Taiwan	987
Malaysia	939
Romania	837
Singapore	764
Vietnam	763
Russia	634
Thailand	618
Pakistan	436
South Africa	397
Indonesia	394
Turkey	379
Bulgaria	300
Brazil	277
Bangladesh	246
Sri Lanka	232
Chile	207
Philippines	203
Egypt	193
Mexico	169
Azerbaijan	166
Colombia	60
Ecuador	55
Abu Dhabi	48
Total	**15845**

From the above sample, companies with the following anomalies were removed:

- Companies with no data for cash holdings, total assets, corporate governance or any of its categories. If some data in the period 2009 – 2012 is available, the company was included in the sample and the mean substitution method was used to impute the missing data. “The rationale of this approach is that the mean is the best single replacement value” (Hair, Black, Babin & Anderson, 2009, p. 53).
- Companies without a general industry classification, not in an industry group or without a stock exchange listing were removed.

- Companies not listed in any of the stock exchanges shown in Table 4-3 were removed. Dual-listed companies that included any of the stock exchanges shown in Table 4-3 as one of their listings were left in the sample.
- Companies whose general industry classification is Bank/Savings and Loan, Insurance or Other Financial were removed. These are classified as firms operating in the financial industry and were excluded from the sample.

After applying the changes above, 620 companies in 17 emerging markets remained. The process of cleaning the data in Table 5-1 above was a lengthy exercise that lasted approximately two weeks. After cleaning the data, it was then transformed to a format suitable for exporting to SPSS. The final data set arranged by country is shown in Table 5-2 below.

Table 5-2: Final data set arranged by country

Country	**Number of Companies**
Hong Kong	131
South Africa	96
India	59
Brazil	54
China	54
Taiwan	50
Singapore	37
Mexico	25
Indonesia	20
Chile	18
Thailand	18
Russia	16
Turkey	16
Philippines	13
Colombia	6
Egypt	6
Abu Dhabi	1
Total	**620**

Most of the countries included in the sample were also included in the sample studied by Klapper and Love (2004), who studied the impact of corporate governance on company performance in emerging markets. Their sample included Malaysia, Pakistan and South Korea. South Korea was not included in this research because the researcher felt that the country has progressed to a level where it can be regarded as a

developed country. Tables 5-3 to 5-4 show the final dataset classified by general industry classification and industry group. Within each industry group, companies are also classified into different categories and this classification is shown in Appendix 3 (Detailed industry grouping). Cash and total assets data were first collected in the home-country currencies of each of the various countries and thereafter converted to US Dollars using the exchange rates at the end of each year: 31st December 2009, 2010, 2011 and 2012 were used.

Table 5-3: Final data set arranged by general industry classification

General Industry Classification	Number of Companies
Industrial	500
Utility	83
Transportation	37
Total	**620**

Table 5-4: Final data set arranged by industry group

Industry Group	Number of Companies
Utilities	83
Construction	59
Metal Producers	52
Miscellaneous	51
Retailers	46
Oil, Gas, Coal and Related Services	38
Transportation	37
Food	35
Chemicals	32
Diversified	24
Drugs, Cosmetics & Health Care	22
Electronics	22
Recreation	18
Aerospace	16
Automotive	16
Beverages	15
Electrical	13
Paper	12
Machinery & Equipment	11
Apparel	7
Textiles	5
Tobacco	3
Metal Product Manufacturers	2
Printing & Publishing	1
Total	**620**

5.2.2 Checking for Errors in the Final Sample

After the final sample was obtained, it was checked for errors, the first of which was categorical data. A general descriptive data check was run in SPSS for company codes, country, general industry classification, detailed industry grouping, industry group and stock exchange(s) listed. The following was observed:

- There was no missing data for the variables listed above. All 620 cases for each variable were valid.
- The frequency of use for each company code is 1, meaning that no company code was accidentally duplicated.
- All percentages, valid percentages and cumulative percentages for all of the variables made sense and add up to 100%.
- It was not expected that the stock exchange(s) listed match the number of companies in each country because some companies are cross-listed in other exchanges (including exchanges in developed countries) and SPSS shows these companies separately. It was checked that one of the company's listings is in the home country.

Continuous data was also checked by generating descriptive statistics. This data is shown in Table 5-5 below. The following was observed when checking for errors:

- It was checked whether the minimum and maximum values for all variables make sense. The data reveals that the minimum cash held in the sample was approximately US$859 in 2009 and US$187 in 2012, while the maximum cash held was approximately US$39m in 2009 and US$65m in 2012. The minimum value of total assets was approximately US$11m in 2009 and US$25m in 2012, while the maximum value of total assets was approximately US$212m in 2009 and US$343m in 2012. These minimum and maximum values indicate that a wide range of companies were included in the sample.
- All cash to total assets data lies correctly between 0 and 1, while all corporate governance data lies correctly between 0 and 100%.

From the checks above, it can be concluded that there are no "out of range" scores and that all of the 620 data points for each variable are valid. Therefore, there are no errors in the data.

5.3. Results: Descriptive Statistics

Basic descriptive statistics were first done to analyse and describe the sample of companies selected to gain some insight into the levels of cash holdings, total assets, corporate governance pillar and category scores and to see how these changed during the period of investigation. Table 5-5 below summarises the descriptive statistics for all data collected for 2009 – 2012.

Table 5-5: Descriptive statistics for the period 2009 - 2012

Descriptive Statistics				
	Minimum	Maximum	Mean	Std. Deviation
Cash 2009 (US$)	858.53	38,738,364.40	988,646.88	2,230,350.34
Total Assets 2009 (US$)	10,598.32	212,074,972.21	7,707,252.34	16,673,201.83
Cash to Total Assets 2009	0.00	0.83	0.16	0.13
Corporate Governance Score 2009 (%)	1.42	95.25	26.97	22.10
Board Structure Score 2009 (%)	2.62	91.68	27.89	23.04
Compensation Policy Score 2009 (%)	1.98	90.47	28.62	21.80
Board Functions Score 2009 (%)	2.14	88.85	35.62	25.82
Shareholder Rights Score 2009 (%)	10.29	94.12	45.91	29.34
Vision and Strategy Score 2009 (%)	0.79	96.71	33.57	26.29
Cash 2010 (US$)	2,835.82	44,296,851.79	1,210,936.83	2,765,245.54
Total Assets 2010 (US$)	17,177.86	307,401,598.37	9,390,182.64	21,203,263.98
Cash to Total Assets 2010	0.00	0.90	0.17	0.13
Corporate Governance Score 2010 (%)	1.55	93.44	28.89	23.29
Board Structure Score 2010 (%)	2.77	91.54	30.02	24.19
Compensation Policy Score 2010 (%)	2.35	89.97	28.60	22.17
Board Functions Score 2010 (%)	2.58	89.86	37.58	26.86
Shareholder Rights Score 2010 (%)	9.37	94.29	47.59	29.71
Vision and Strategy Score 2010 (%)	0.81	98.18	33.63	27.32
Cash 2011 (US$)	417.21	52,888,863.26	1,232,103.24	2,917,240.63
Total Assets 2011 (US$)	20,162.87	316,642,382.69	10,429,341.43	23,502,007.17
Cash to Total Assets 2011	0.00	0.68	0.15	0.12
Corporate Governance Score 2011 (%)	1.64	92.83	31.24	24.29
Board Structure Score 2011 (%)	2.80	90.02	31.79	24.75
Compensation Policy Score 2011 (%)	2.31	89.50	29.94	22.94
Board Functions Score 2011 (%)	2.10	89.27	39.04	27.70
Shareholder Rights Score 2011 (%)	9.19	93.55	48.66	30.86
Vision and Strategy Score 2011 (%)	0.67	98.15	36.42	29.31
Cash 2012 (US$)	186.63	64,654,685.79	1,374,976.01	3,371,063.85
Total Assets 2012 (US$)	24,659.08	343,161,556.21	11,648,247.91	25,843,721.55
Cash to Total Assets 2012	0.00	0.77	0.15	0.12
Corporate Governance Score 2012 (%)	1.29	94.53	36.58	25.02
Board Structure Score 2012 (%)	2.46	91.23	35.87	25.75
Compensation Policy Score 2012 (%)	2.11	87.62	32.73	23.54
Board Functions Score 2012 (%)	2.18	89.01	40.39	27.77
Shareholder Rights Score 2012 (%)	8.49	93.27	49.47	31.17
Vision and Strategy Score 2012 (%)	0.76	97.84	48.34	30.01
Cash Mean (US$)	2,966.22	50,144,691.31	1,201,665.74	2,765,320.12
Total Assets Mean (US$)	18,149.53	286,228,649.30	9,793,756.08	21,708,680.83
Cash to Total Assets Mean	0.01	0.73	0.16	0.12
Corporate Governance Score Mean (%)	1.55	92.81	30.92	22.31
Board Structure Score Mean (%)	2.77	90.62	31.40	22.66
Compensation Policy Score Mean (%)	2.35	82.80	29.97	21.02
Board Functions Score Mean (%)	2.35	86.79	38.16	25.52
Shareholder Rights Score Mean (%)	9.55	93.62	47.91	29.03
Vision and Strategy Score Mean (%)	0.95	97.05	37.99	25.14

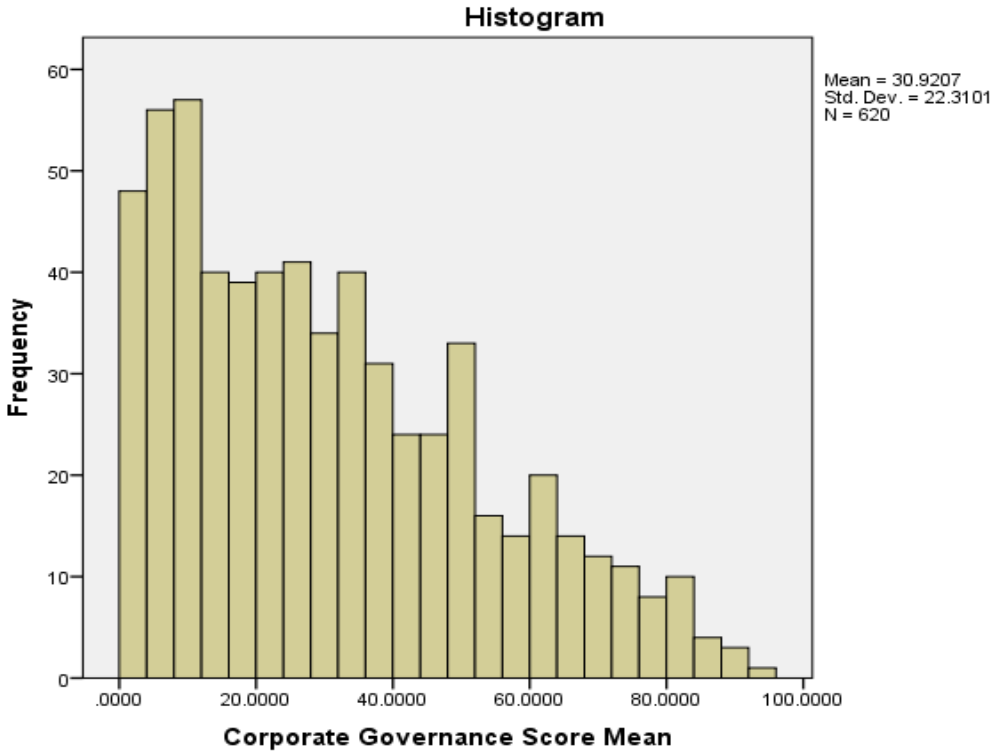
The mean data (in the last section of Table 5-5 above) for each variable were determined by calculating the average of the variables from 2009 to 2012. Before applying any statistical analyses to the data, the first step was to check for normality.

5.3.1 Test of Normality

Appendix 4 shows descriptive data, test of normality, histograms and normal Q-Q plots for the mean scores of corporate governance, board structure, compensation policy, board functions, shareholder rights and vision and strategy. The 5% trimmed mean indicated under “Descriptives” in Appendix 4 was obtained by removing the top and bottom 5% of the cases (Pallant, 2005). The 5% trimmed means compare well with the original means of all the variables under “Descriptives” in Appendix 4, indicating that some of the more extreme scores did not have a strong influence on the means.

Skewness and kurtosis give an indication of the distribution of the scores. “The skewness value provides an indication of the symmetry of the distribution. Kurtosis, on the other hand, provides information about the ‘peakedness’ of the distribution” (Pallant, 2005, p. 51). The skewness is positive for all the variables, indicating that the data is clustered to the left at the low values. The kurtosis values are negative for all the variables, indicating that the distribution is relatively flat and data points are clustered at the extremes. These conclusions on skewness and kurtosis can also be confirmed by visual observation of the histogram of corporate governance mean scores in Figure 5-1 below.

Figure 5-1: Histogram of corporate governance mean scores



The Kolmogorov-Smirnov statistic, which assesses the normality of the distribution of scores, showed a significant result (Sig value of less than 0.05). This result suggests that the data is not normally distributed. However, this result is quite common in larger samples (Pallant, 2005). Therefore, the data was assumed to be normally distributed for statistical calculations. If this assumption is not made, the non-parametric equivalents of the statistics for research questions one to four below would have to be done.

5.3.2 Descriptive Statistics: Corporate Governance

Figure 5-2 below reveals that South African firms, compared to firms from other countries, score consistently high in the quality of corporate governance and its categories except in the quality of vision and strategy, which is led by Turkey, Thailand and Brazil. South African firms are followed by firms in Thailand and Singapore in terms of overall corporate governance quality. Corporate governance results in Klapper and Love (2004), which was collected by Credit Lyonnais Securities Asia (CLSA) for 14 emerging markets, revealed that South Africa, Singapore and Brazil had the highest overall mean scores in that group.

Figure 5-2: Mean corporate governance and its category scores per country

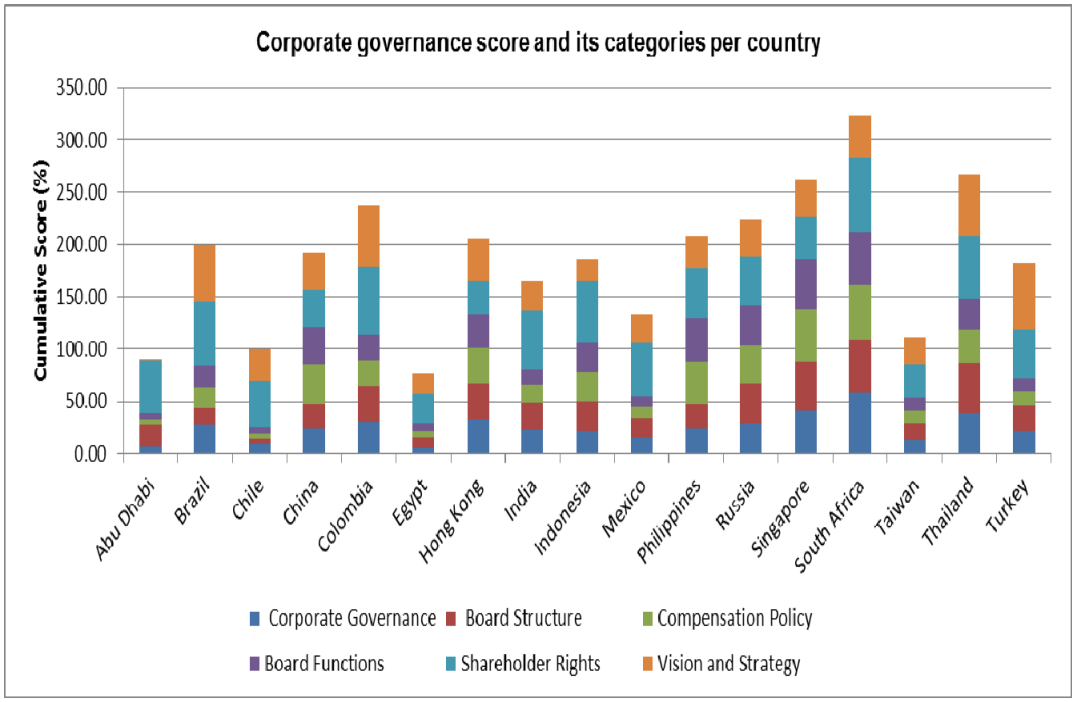
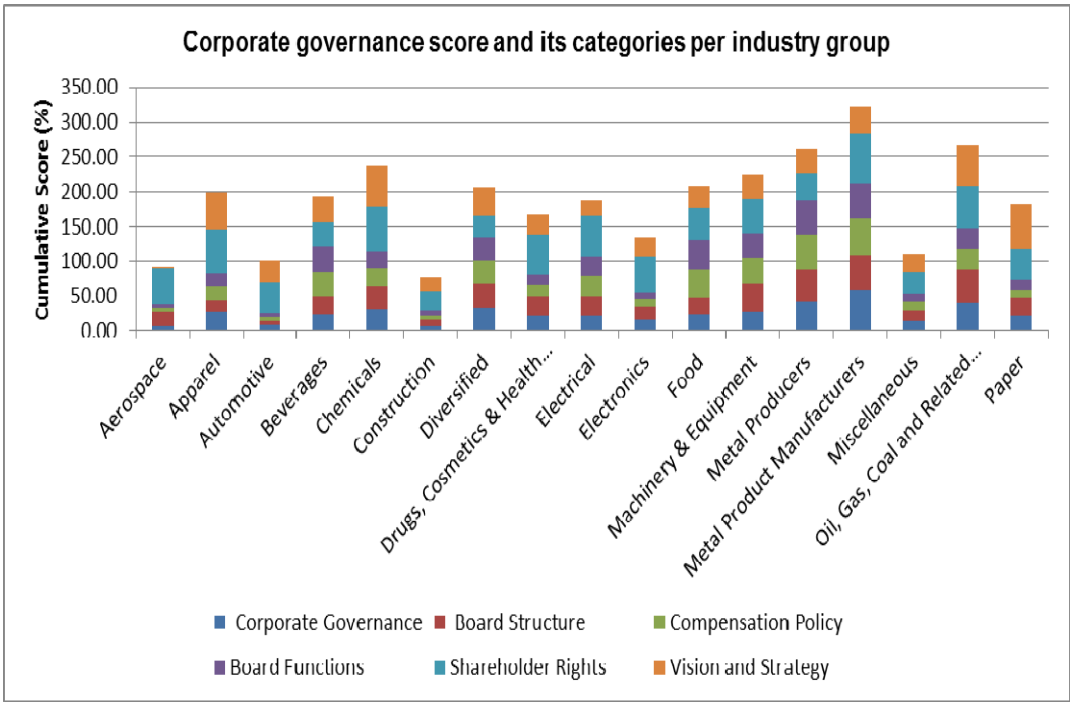


Figure 5-3 below reveals that metal producers, metal product manufacturers, oil, gas, coal and related producers score higher in corporate governance than firms in other industries. The reason is that firms in these heavy industries are often owned by

foreign companies from developed countries. In most cases, these firms are dual-listed and, as Fresard and Salva (2010) have discovered, investors associate a dual-listing with a reduction of insiders' inefficient actions. Fresard and Salva (2010) argue that cross-listing in a United States stock exchange provides stricter legal rules, greater transparency and increased monitoring; this means managers will act in the best interest of shareholders and, as a result, the firm's corporate governance score increases.

The other reason why firms in these industries rank high in corporate governance is that often they have to raise funds for machinery and heavy assets from investors who are often situated overseas in developed nations. For investors to buy into the firms and invest money, the quality of corporate governance has to be superior. In addition, these industries often export final products to customers in industrialised nations for processing. These customers want to do business with firms that practice good corporate governance principles. From Table 5-3, in terms of corporate governance, it is also clear that aerospace, automotive and construction firms rank lower than firms in other industries.

Figure 5-3: Mean corporate governance and its category scores per industry group

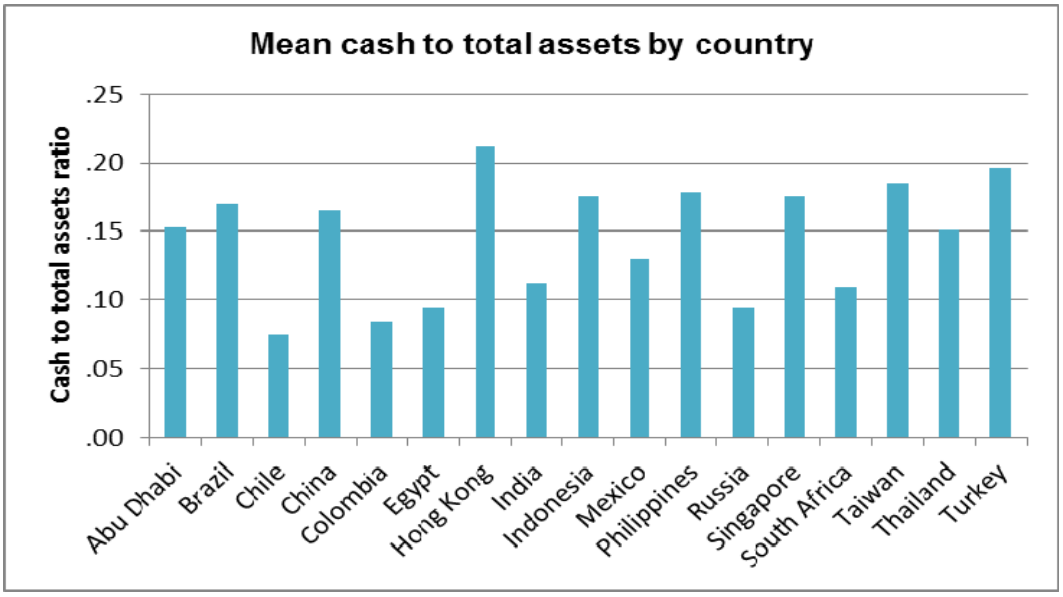


5.3.3 Descriptive Statistics: Corporate Cash Holdings

Table 5-5 (Descriptive statistics for the period 2009 – 2012) above shows, that the mean cash and marketable securities, total assets and cash to total assets for firms in the sample during the period 2009 to 2012 were approximately US$ 1.2m, US$ 9.8m and 0.16 respectively. However, as was seen in Figure 5-1 (Histogram of corporate governance mean scores) above, the data is highly skewed. Therefore, it is also necessary to report median values. After sorting the mean values of cash and equivalents, total assets and cash to total assets in ascending order in SPSS, the median cash and equivalents, median total assets and median cash to total assets were found to be approximately US$ 0.54m, US$ 4.2m and 0.131 respectively.

Figure 5-4 below indicates that companies in Hong Kong and Turkey held mean cash and marketable securities of 21.1% and 19.6% of assets from 2009 to 2012, which were higher than all the other countries in the sample. At 7.5% and 8.4% of assets respectively, companies in Chile and Colombia held less cash and marketable securities relative to assets than all of the other countries in the sample from 2009 to 2012.

Figure 5-4: Comparison of cash to total asset ratios by country

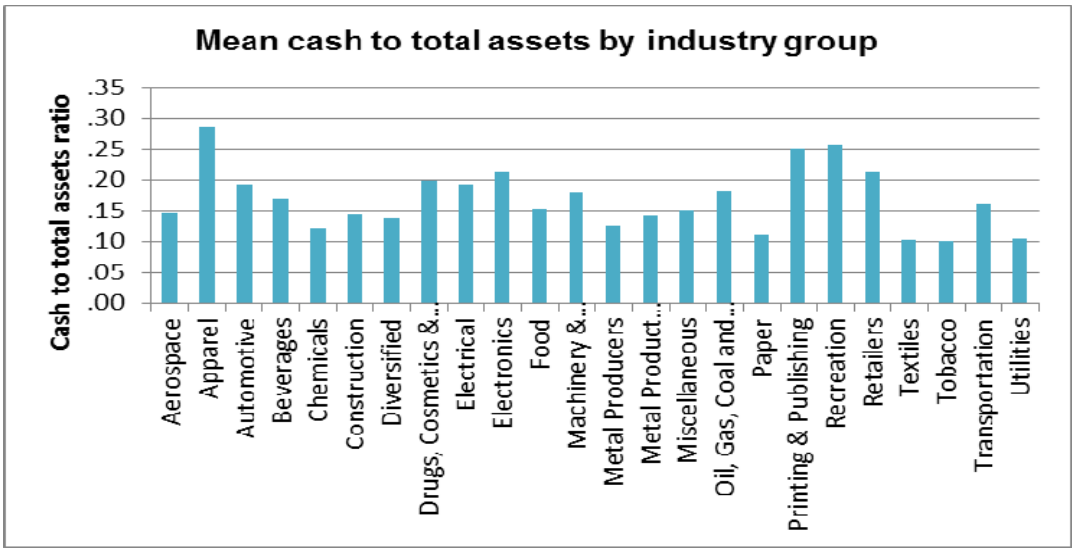


In Figure 5-4 above, Hong Kong's mean cash to total assets ratio is in agreement with the country summary statistics in the sample by Chang and Noorbakhsh (2006). In their study, Hong Kong, Japan and Israel held more cash relative to net assets than all of the other countries in the high corporate governance group. Figure 5-5 below indicates

that firms in the apparel, recreation, printing and publishing industries held more cash relative to assets than firms in other industries from 2009 to 2012. The reason for this is that these industries do not usually use large machinery and other heavy physical assets to carry out their business activities. On the other hand, they need cash for transactional and precautionary reasons. Therefore, relative to assets, cash held by these firms tends to be high.

However, this finding is in contrast to the sample in Dittmar and Mahrt-Smith (2007), which indicated that United States firms in precious metals, business services, computers and electronic equipment industries held more cash relative to assets than firms in other industries. Figure 5-5 below also reveals that firms in the textiles, tobacco and utility industries tend to hold lower cash balances relative to assets than all of the other emerging markets in the sample.

Figure 5-5: Comparison of cash to total asset ratios by industry group



5.4. Results: Research Questions

This section shows the results of statistical tests that were done to answer research questions one to four. The results have been shown per research question. Research question one focused on the relationship between overall firm-level corporate governance, while research questions two to four were centred around the five categories of firm-level corporate governance reported in the ASSET4 ESG database. The five categories are board structure, compensation policy, board functions, shareholder rights and vision and strategy. The first three of these five categories relate to research question two and refer to characteristics and actions of the board of directors, while research question three refers to management's commitment to

protecting minority shareholders. Research question four refers to vision and strategy, which is the integration of the economic (financial), social and environmental dimensions. The results for each research question are presented below.

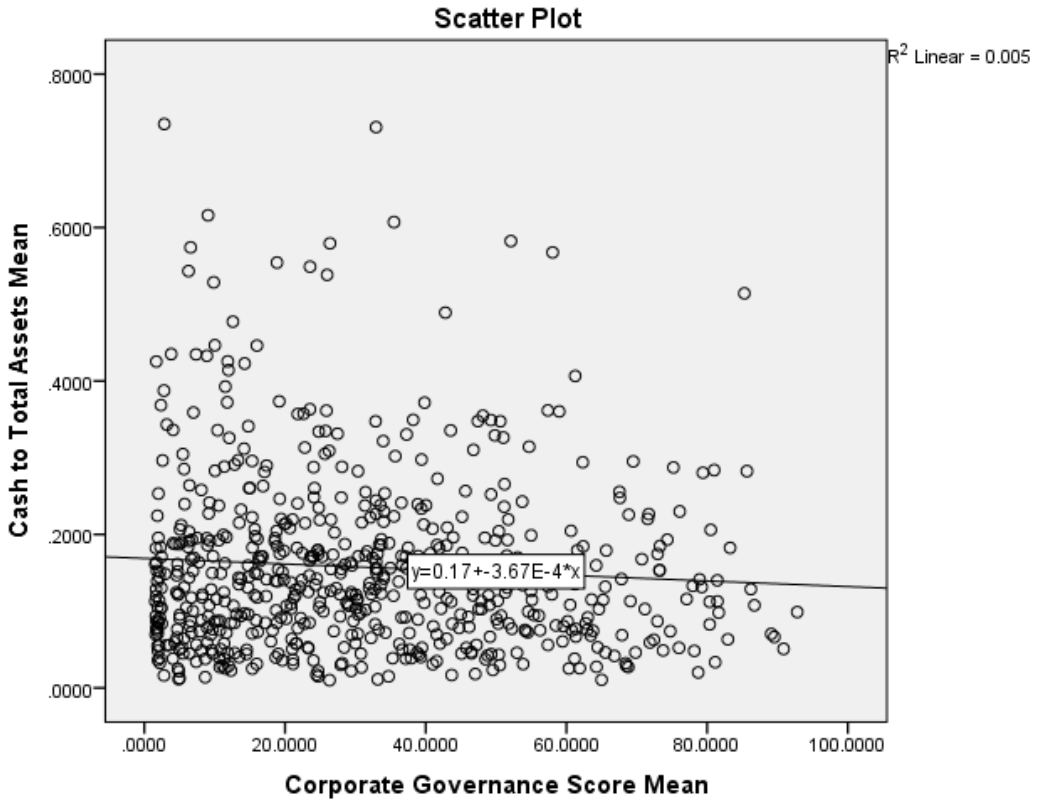
5.4.1 Research Question One

Research question one is as follows:

RQ_{CG}: Is there an association between firm-level corporate governance and the level of cash holdings in firms situated in emerging markets?

To answer this research question, the Pearson's product-moment correlation analysis was used. This correlation analysis is widely used to describe the strength and direction of the linear relationship between two continuous variables (Pallant, 2005; Laerd Statistics, 2013). The first step in answering research question one was to do a preliminary correlation analysis of the relationship between mean scores of corporate governance and cash to total assets for the total period 2009 to 2012. The scatter plot in Figure 5-6 below shows this relationship.

Figure 5-6: Scatter plot of mean scores of corporate governance and cash to total assets for 2009 to 2012



From Figure 5-6 above, it can be concluded that there was a negative relationship between mean corporate governance and mean cash to total assets scores for the period 2009 to 2012. The size of the negativity is 0.000367 (slope of the straight line in Figure 5-6). However, the distribution of data points indicates that there are outliers scattered away from the main cluster of data points, suggesting a very weak relationship between the two variables. This very weak relationship can also be confirmed by the very small Pearson correlation (| r | < 0.1) in Table 5-6 below. The coefficient of determination (r^2) is 0.005, which means that corporate governance statistically explained 0.5% of the variability in cash to total assets during the period 2009 to 2012. Table 5-6 also shows that the p-value is 0.077; as p > 0.05, it can be concluded that the correlation coefficient is not statistically significantly different from zero.

Table 5-6: Correlation matrix of mean scores of corporate governance and cash to total assets for 2009 to 2012

Correlations

		Cash to Total Assets Mean
Corporate Governance Score Mean	Pearson Correlation	-0.071
	Sig. (2-tailed)	0.077
	N	620

Appendix 5 shows the correlation matrices for corporate governance and cash to total assets scores for each of the years from 2009 to 2012. There was a very small and negative relationship between the two variables (| r | < 0.1) in each of the years aside from 2010, when the relationship was small (0.1 < | r | < 0.3) and negative with a Pearson correlation (r) of -0.117. In that year (2010), 1.4% of the variability in cash to total assets was explained by firm-level corporate governance. In addition, since the p-value is less than 0.05, it can be concluded that the correlation coefficient in 2010 is statistically significantly different from zero at the 0.01 level. The answer to research question one is that there is a negative association between firm-level corporate governance and corporate cash holdings in firms situated in emerging markets. The strength of the association is very small.

Table 5-7 below shows a correlation matrix for corporate governance and its categories. It is clear from Table 5-7 that overall corporate governance is highly positively correlated to all its category scores (| r | > 0.5). In addition, all the corporate

governance categories are positively correlated with one another. All the Pearson correlation coefficients are statistically significantly different from zero at the 0.01 level.

Table 5-7: Summary of correlation analyses involving mean scores of corporate governance, board structure, compensation policy, board functions, shareholder rights and vision and strategy

Correlations

		Corporate Governance Score Mean	Board Structure Score Mean	Compensation Policy Score Mean	Board Functions Score Mean	Shareholder Rights Score Mean	Vision and Strategy Score Mean
Corporate Governance Score Mean	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	620					
Board Structure Score Mean	Pearson Correlation	.823**	1				
	Sig. (2-tailed)	.000					
	N	620	620				
Compensation Policy Score Mean	Pearson Correlation	.712**	.630**	1			
	Sig. (2-tailed)	.000	.000				
	N	620	620	620			
Board Functions Score Mean	Pearson Correlation	.712**	.585**	.562**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	620	620	620	620		
Shareholder Rights Score Mean	Pearson Correlation	.603**	.353**	.187**	.226**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	620	620	620	620	620	
Vision and Strategy Score Mean	Pearson Correlation	.523**	.304**	.206**	.161**	.222**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	620	620	620	620	620	620

**. Correlation is significant at the 0.01 level (2-tailed).

An interesting observation from Table 5-7 above is that all the categories that form the characteristics of board of directors: board structure, compensation policy and board functions are strongly positively correlated with each other (I r I > 0.5). However, all of these board characteristics are either moderately or weakly positively correlated with shareholder rights and vision and strategy. In other words, the Pearson correlation coefficient between board structure and both shareholder rights and vision and strategy is moderate and positive (0.3 < I r I < 0.5); the Pearson correlation coefficient between compensation policy and both shareholder rights and vision and strategy is small and positive (0.1 < I r I < 0.3) and the Pearson correlation coefficient between board functions and both shareholder rights and vision and strategy is also small and positive (0.1 < I r I < 0.3). This observation supports the fact that board structure, compensation policy and board functions are congruent with one another and relate to the actions of a single entity: the board of directors. This observation leads us into the second research

question, which tests whether these activities of the board of directors are positively or negatively associated with cash holdings.

5.4.2 Research Question Two

Research question two is as follows:

RQ_{CGBOD}: Is there an association between board characteristics and the level of cash holdings in firms situated in emerging markets?

In this research question, the aim was to determine if there was any association between board characteristics and cash to total assets. The impact of board characteristics was predicted by the combination of board structure, compensation policy and board functions scores. The assumption here was that together, these independent variables partially predict the impact of the board of directors on cash to total assets. This relationship is shown in equation 1 below:

Equation 1: Equation depicting the relationship between board characteristics

CGBOD = CGBS + CGCP + CGBF + Other Characteristics

According to Laerd Statistics (2013), the following assumptions need to be met for a multiple regression analysis to work properly.

- Independence of errors (residuals)
- A linear relationship between the predictor variables (and composite) and the dependent variable
- Homoscedasticity of residuals (equal error variances) and normality
- No multicollinearity
- No significant outliers, high leverage and influential points

The above assumptions will be tested below.

5.4.2.1. Checking for independence of errors

Table 5-8 shows the regression model summary results for research question two.

Table 5-8: Regression model summary for research question two

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.068[a]	.005	.000	.1152178	1.474

a. Predictors: (Constant), Board Functions Score Mean, Compensation Policy Score Mean, Board Structure Score Mean

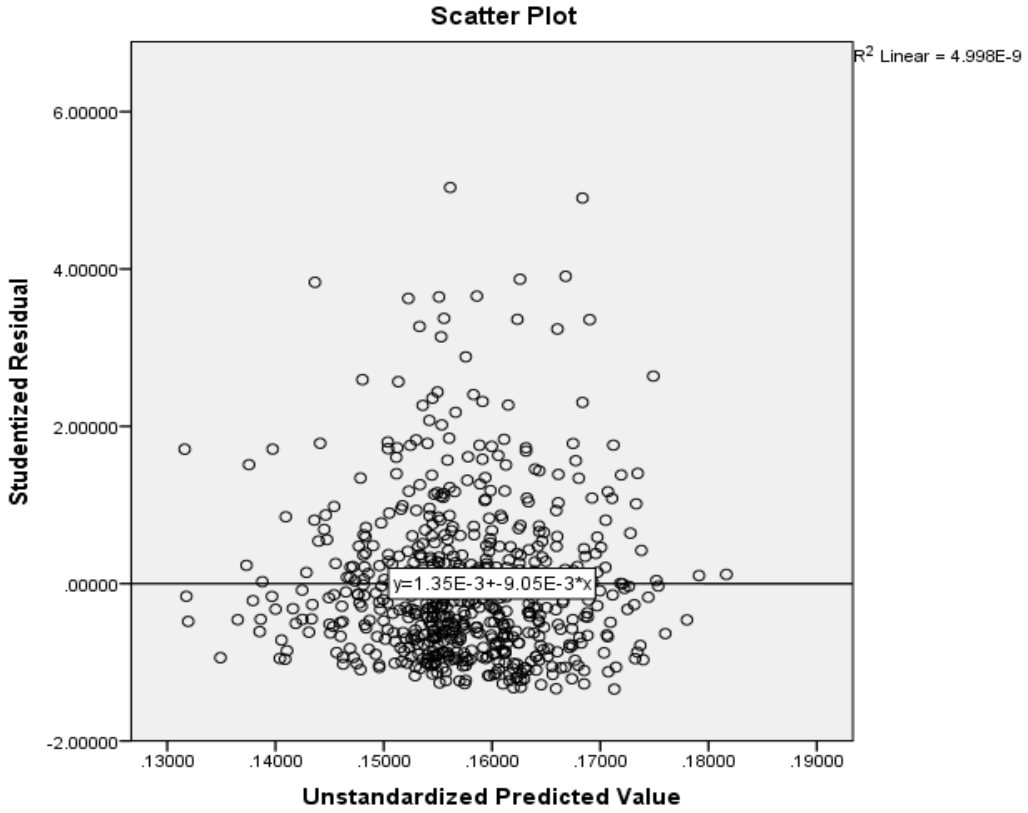
b. Dependent Variable: Cash to Total Assets Mean

The Durbin-Watson statistic for this analysis is 1.474. A Durbin-Watson statistic can range from 0 to 4; a value of approximately 2 indicates that there is no correlation between the residuals. In this analysis, a Durbin-Watson statistic is close to 2, so it can be accepted that there is independence of errors (residuals).

5.4.2.2. Checking for a linear relationship

The second assumption of multiple linear regression is that the independent variables collectively (board structure, compensation policy and board functions) are linearly related to the dependent variable (cash to total assets) and also that each independent variable is linearly related to the dependent variable. Figure 5-7 below shows a scatter plot of the studentised residuals and the unstandardised predicted values.

Figure 5-7: Scatter plot of studentised residuals against the unstandardised predicted values for research question two



According to Laerd Statistics (2013), if the residuals form a horizontal band, then the relationship between the dependent variable and independent variables is likely to be linear. The scatter plot in Figure 5-7 shows that the residuals roughly form a horizontal band, indicating that the relationship between the board characteristics (combination of

board structure, compensation policy and board functions) and cash to total assets is likely to be linear. Table 5-9 below shows the correlation matrix involving the individual variables of board characteristics and cash to total assets.

Table 5-9: Correlation matrix of variables involved in research question two

Correlations

		Cash to Total Assets Mean	Board Structure Score Mean	Compensation Policy Score Mean	Board Functions Score Mean
Pearson Correlation	Cash to Total Assets Mean	1.000			
	Board Structure Score Mean	-.022	1.000		
	Compensation Policy Score Mean	.001	.630	1.000	
	Board Functions Score Mean	.039	.585	.562	1.000
Sig. (1-tailed)	Cash to Total Assets Mean				
	Board Structure Score Mean	.293			
	Compensation Policy Score Mean	.492	.000		
	Board Functions Score Mean	.164	.000	.000	
N	Cash to Total Assets Mean	620			
	Board Structure Score Mean	620	620		
	Compensation Policy Score Mean	620	620	620	
	Board Functions Score Mean	620	620	620	620

From Table 5-9 above, the following can be concluded regarding the linearity of the variables involved:

- There was a very small and negative relationship between the mean scores of board structure and cash to total assets. The correlation coefficient is not statistically significantly different from zero ($|r| < 0.1$, $n = 620$, $p > 0.05$).
- There was a very small and positive relationship between the mean scores of compensation policy and cash to total assets. The correlation coefficient is not statistically significantly different from zero ($|r| < 0.1$, $n = 620$, $p > 0.05$).
- There was a very small and positive relationship between the mean scores of board functions and cash to total assets. The correlation coefficient is not statistically significantly different from zero ($|r| < 0.1$, $n = 620$, $p > 0.05$).

Appendix 6 shows the full results of the multiple regression analysis. The partial regression plots in Appendix 6 also confirm that the strength of the relationship between the individual independent variables and cash to total assets is very small.

5.4.2.3. Checking for homoscedasticity and normality

From Figure 5-7 (Scatter plot of studentised residuals against the unstandardized predicted values for research question two) above, it can be seen that the residuals are roughly distributed to form a rectangle, with most of the scores concentrated in the centre (along the 0 point). According to Pallant (2005), a clear or systematic pattern to the residuals (e.g. curvilinear) would suggest a violation of homoscedasticity. In this case, it seems that the residuals do not form a clear pattern.

The histogram in Appendix 6 (Full SPSS results of multiple linear regression) shows that the standardised residuals are approximately normally distributed, but they also appear to be skewed to the left. However, in the normal P-P Plot of standardised residuals in Appendix 6, it is clear that the points lie in a reasonably straight diagonal line from the bottom left to top right, which suggests that there are no major deviations from normality.

5.4.2.4. Checking for multicollinearity

Multicollinearity occurs when there are two or more independent variables that are highly correlated with each other. According to Laerd Statistics (2013), correlation coefficients greater than 0.7 would suggest that the variables are highly correlated. From Table 5-9 (Correlation matrix of variables involved in research question two) above, none of the independent variables have correlation coefficients greater than 0.7, which suggests that there is no multicollinearity.

The second part in proving that multicollinearity does not exist is by looking at collinearity statistics in the “Coefficients” table in Appendix 6. VIF and tolerance are reciprocals of each other, so only one of the measures is sufficient to check for multicollinearity. If the tolerance value is less than 0.1 (i.e. VIF of greater than 10), there might be a collinearity problem (Laerd Statistics, 2013). In this case, none of the tolerance values are less than 0.1. Therefore, there is no problem of collinearity in this dataset.

5.4.2.5. Checking for outliers

The casewise diagnostics table in Appendix 6 highlights any cases where the case's standardised residual is greater than 3.0 or less than –3.0. A value of greater than 3.0 or less than –3.0 is a common cut-off criteria used to define whether a particular residual might be representative of an outlier or not (Laerd Statistics, 2013). Tabachnick and Fidell (2001) define outliers as cases that have a standardised residual of more than 3.3 or less than –3.3. With large samples, it is not uncommon to find a number of outlying residuals (Pallant, 2005). Considering that the outliers in the casewise diagnostics table in Appendix 6 are few (14 cases) relative to the total number of residuals (620), no action was taken to remove them.

5.4.2.6. Checking for leverage and influential points

"To determine whether any cases exhibit high leverage, a general rule of thumb is to consider leverage values less than 0.2 as safe, 0.2 to less than 0.5 as risky, and values of 0.5 and above as dangerous" (Laerd Statistics, 2013, p.5 in Multiple regression in SPSS). Influential points were determined using Cook's Distance values for each case. Cook's Distance is a measure of influence (Laerd Statistics, 2013).

When the regression was set up in SPSS, the variables LEV_1 and COO_1 were created. These variables measure leverage and influence. As a rule of thumb, if there are Cook's Distance values above 1, they should be investigated (Pallant, 2005). When these two variables were checked, it was found that there were three points whose leverage lies between 0.2 and 0.5, suggesting that they were risky. However, there were no Cook's Distance values above 1. This suggests that none of the data points had major influence on the dataset. More importantly, the three points identified with risky leverage also had no influence on the dataset. Therefore, no action was taken to remove these points.

5.4.2.7. Results

From the above assessment of assumptions, no transformations to the data were done because no major violations of assumptions were found. Therefore, the multiple linear regression was run and the results are described below:

From Table 5-8 (Regression model summary for research question two) above, the multiple correlation coefficient (R) is 0.068. This is the correlation between the predicted scores of the dependent variable and the actual dependent variable (cash to total assets). This correlation coefficient is positive and very small (I R I < 0.1), which

suggests that the predicted values are very weakly, but positively correlated to the dependent variable. The coefficient of determination (R^2) is 0.005, which means that the proportion of variation in the dependent variable (cash to total assets) that can be explained by the independent variables (board structure, compensation policy and board functions) is 0.05%.

Table 5-10: Table of statistical significance of the multiple regression model

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.038	3	.013	.951	.416[b]
	Residual	8.177	616	.013		
	Total	8.215	619			

a. Dependent Variable: Cash to Total Assets Mean

b. Predictors: (Constant), Board Functions Score Mean, Compensation Policy Score Mean, Board Structure Score Mean

The F-ratio in Table 5-10 above is the “ratio of the mean sum of squares for the regression to the mean sum of squares for the residuals” (Laerd Statistics, 2013, p. 7 in Multiple regression in SPSS). It tests whether the regression model is a good fit for the data. The table shows that the independent variables do not statistically significantly predict the behaviour of the dependent variable, $F(3, 616) = 0.951$, $p > 0.0005$ (the regression model is not a good fit of the data). The unstandardised coefficients (B) in the “Coefficients” table in Appendix 6 are zero, which indicates that the dependent variable does not vary with any of the independent variables when all of the other independent variables are held constant. In addition, the "Sig." column in the coefficients table in Appendix 6 shows that all independent variable coefficients are not statistically significantly different from zero ($p > 0.05$).

The answer to research question two is that there is a positive association between the board of directors score (board characteristics) and corporate cash holdings in firms situated emerging markets. The strength of the association is very small.

5.4.3 Research Question Three

Research question three is as follows:

RQ_{CGSR}: Is there an association between shareholder rights and the level of cash holdings in firms situated in emerging markets?

In this research, the aim was to determine if there was any association between the shareholder rights score and cash to total assets.

Table 5-11 below reports the results of the correlation analysis for the mean shareholder rights and cash to total assets scores for 2009 to 2012. Appendix 7 shows the correlation analyses for the individual years from 2009 to 2012.

Table 5-11: Correlation matrix of mean scores of shareholder rights and cash to total assets for 2009 to 2012

Correlations

		Shareholder Rights Score Mean
Cash to Total Assets Mean	Pearson Correlation	-.231**
	Sig. (2-tailed)	0
	N	620

**. Correlation is significant at the 0.01 level (2-tailed).

From Table 5-11 above, it is clear that there was a negative relationship between mean shareholder rights and mean cash to total assets; however, the strength of the relationship is small (0.1 < l r l < 0.3). Appendix 7 shows that there was a negative relationship between the two variables in each of the years from 2009 to 2012 and the strength of the relationship was small (0.1 < l r l < 0.3). Table 5-11 reveals that 5.3% (r^2) of the variability in cash to total assets is explained by the strength of shareholder rights. In addition, since the p-value is less than 0.05, it can be concluded that the Pearson correlation coefficient is statistically significantly different from zero.

The answer to research question three is that there is a negative association between shareholder rights and corporate cash holdings in firms situated emerging markets. The strength of the association is small.

5.4.4 Research Question Four

Research question four is as follows:

RQ_{CGVS}: Is there an association between vision and strategy and the level of cash holdings in firms situated in emerging markets?

In this research question, the aim was to determine if there was any association between the vision and strategy score and cash to total assets.

Table 5-12 below reports the results of the correlation analysis for the mean vision and strategy and cash to total assets scores for 2009 to 2012. Appendix 8 shows the correlation analyses for the individual years from 2009 to 2012.

Table 5-12: Correlation matrix of mean scores of vision and strategy and cash to total assets for 2009 to 2012

Correlations

		Cash to Total Assets Mean
Vision and Strategy Score Mean	Pearson Correlation	0.047
	Sig. (2-tailed)	0.239
	N	620

From Table 5-12 above, it is clear that there is a very weak, positive relationship between vision and strategy and cash to total assets (l r l < 0.1). Appendix 8 shows that the relationship between the two variables in each of the years from 2009 to 2012 has been positive and very weak (l r l < 0.1). Table 5-12 reveals that 0.22% (r^2) of the variability in cash to total assets is explained by the existence of a vision and strategy in the firm. In addition, since the p-value is greater than 0.05, it can be concluded that the Pearson correlation coefficient is not statistically significantly different from zero.

The answer to research question four is that there is a positive association between vision and strategy and corporate cash holdings in firms situated in emerging markets. The strength of the association is very small.

5.5. Conclusion to Chapter Five

Firm-level corporate governance and its categories have been improving in emerging markets during the time period of the study. The results revealed that South Africa, Thailand and Singapore had the highest mean corporate governance scores, while Abu Dhabi, Chile and Egypt scored the lowest in terms of firm-level corporate governance. The results also revealed that metal producers; metal product manufacturers and oil, gas, coal and related producers scored higher in firm-level corporate governance than firms in other industries, while aerospace, automotive and construction firms scored lower in firm-level corporate governance.

It was found that Hong Kong and Turkey held higher cash balances relative to assets than all other emerging market firms in the sample, while Chile and Colombia held the lowest cash balances. In addition, firms in the apparel, recreation, printing and publishing industries held higher cash balances relative to assets than firms in other industries, while firms in the textiles, tobacco and utility industries held the lowest cash balances.

It was found that there was a negative association between firm-level corporate governance and corporate cash holdings. The strength of the association, however, is very small. It was also found that corporate cash holdings were positively associated with board characteristics and vision and strategy, but were negatively associated with shareholder rights.

Table 5-13 below summarises the results of the tests done to answer the research questions in this paper:

Table 5-13: Summary of the results obtained from the statistical tests

Research Question	**Variables**		**Result**	
	Independent	**Dependent**	**Is there an association?**	**Strength of association**
One	Firm-level corporate governance	Cash to total assets	Yes - negative	Very Small (| r | < 0.1)
Two	Board structure, Compensation policy, and Board functions	Cash to total assets	Yes - positive	Very Small (| r | < 0.1)
Three	Shareholder rights	Cash to total assets	Yes - negative	Small (0.1 < | r | < 0.3)
Four	Vision and strategy	Cash to total assets	Yes - positive	Very Small (| r | < 0.1)

Chapter 6 : Discussion of Results

6.1. Introduction

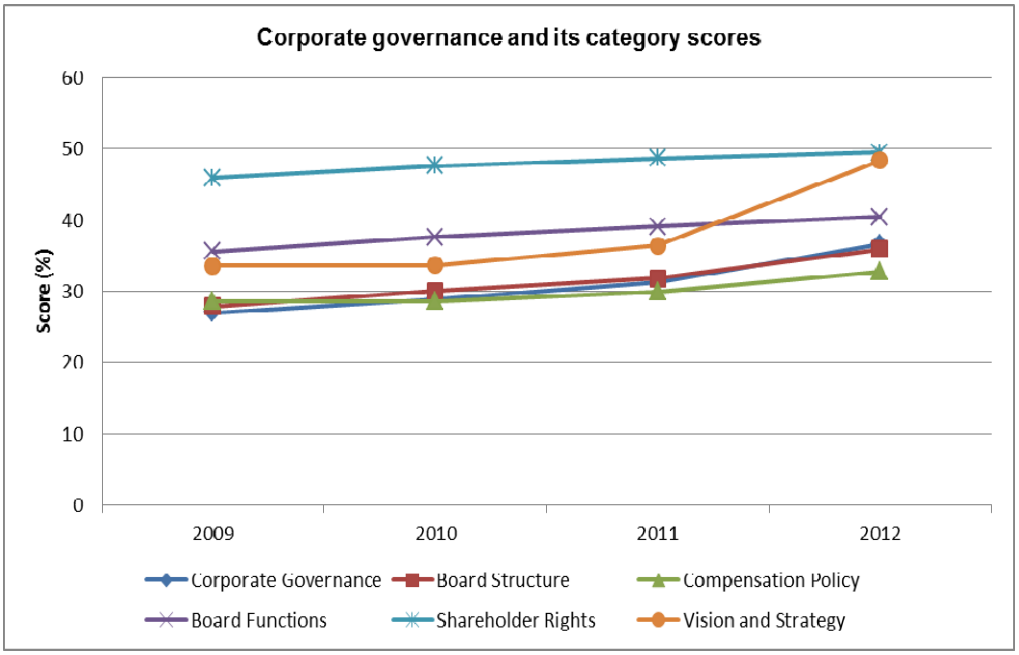
The previous chapter presented the results from the research process. The research process included deriving the research questions from the gap in the literature and these were answered by collecting and testing secondary data on firm-level corporate governance and its categories; cash and cash equivalents; and total assets for 17 emerging market firms. This chapter will analyse the results obtained using the literature presented in Chapter Two. The analysis will follow the same format as in Chapter Five: the first part is an analysis of the descriptive statistics, followed by an analysis of the results obtained from statistical tests. After the analyses, an overall model explaining the relationship between firm-level corporate governance and corporate cash holdings will be presented.

6.2. Discussion of Descriptive Statistics

6.2.1 Corporate Governance

Figure 6-1 shows the trend in corporate governance and its categories from 2009 to 2012.

Figure 6-1: Mean scores of corporate governance and its categories from 2009 to 2012



Referring to Figure 6-1 above, it is clear that the corporate governance pillar score and individual corporate governance category scores increased from 2009 to 2012. This indicates that the quality of corporate governance in emerging market firms improved

over this period. Figure 6-1 also reveals that none of the scores are over 50%: this indicates that overall governance in emerging market firms was still low. It was impossible to compare these corporate governance scores with previous studies to check how these emerging markets compare with developed economies and other emerging markets because the researcher could not find any previous studies that used the ASSET4 ESG corporate governance rating. The various corporate governance ratings used in literature use different criteria and assumptions from the ASSET4 ESG corporate governance rating.

As an example, the corporate governance mean scores obtained in this study were lower than the scores obtained in the study by Klapper and Love (2004), which also studied firms in emerging markets. The mean corporate governance score in Klapper and Love (2004) was 54.11%, while the mean score in this study was 30.92% (See Table 5-5 - Descriptive statistics for the period 2009 – 2012) and the median score 26.52%. The corporate governance data in Klapper and Love (2004) was collected by Credit Lyonnais Securities Asia (CLSA) and the categories which were emphasised were discipline, transparency, independence, accountability, responsibility, fairness and social awareness. The categories emphasised in the ASSET4 ESG rating, however, are board structure, compensation policy, board functions, shareholder rights and vision and strategy.

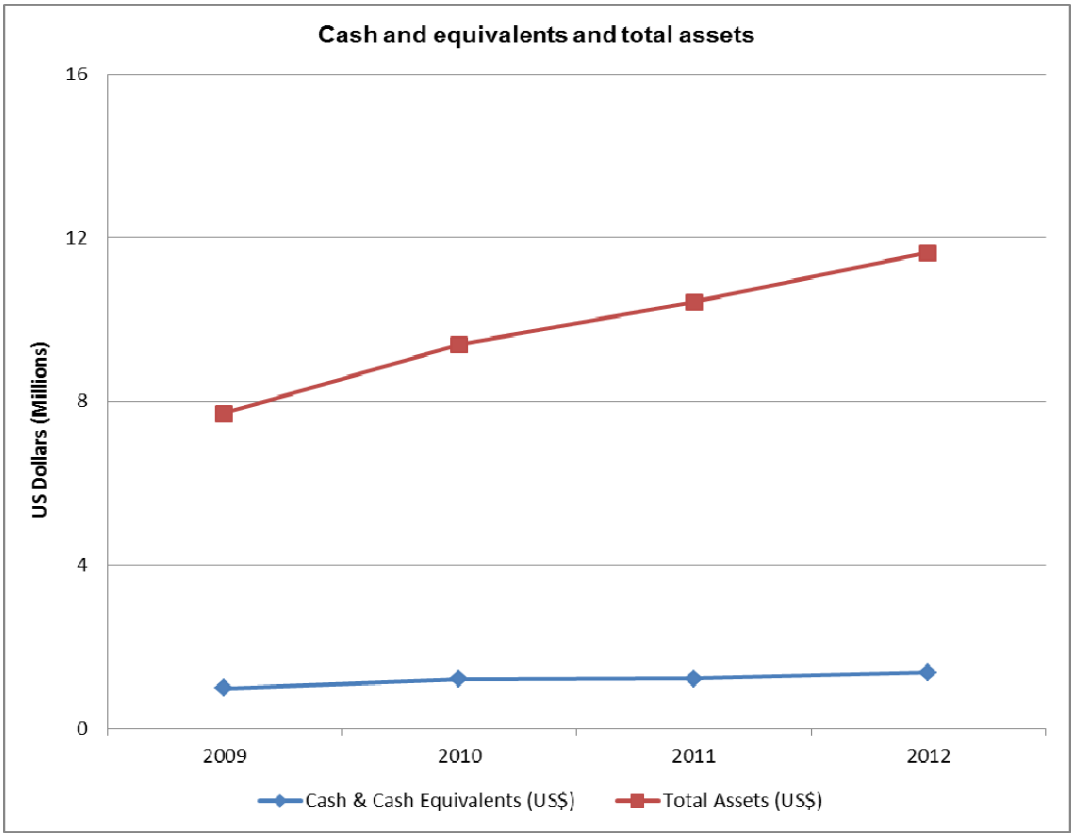
For studies done on firms in the United States, Brown and Caylor (2006) used the Institutional Shareholder Services (ISS) governance rating to measure firm-level corporate governance in 1,868 United States companies in 2003. The rating in their study ranges from 13 to 38 and the mean score achieved in their sample was 22.52, which translates to a mean percentage of 59.26%. The ISS governance rating categories are audit, board of directors, charter/bylaws, director education, executive and director compensation, ownership, progressive practices and state of incorporation (Brown & Caylor, 2006). Daines et al. (2010) went a step further and measured corporate governance in United States companies using four governance ratings – Audit Integrity's Accounting and Governance Risk (AGR) rating; ISS's Corporate Governance Quotient (CGQ); Governance Metrics International (GMI) and The Corporate Library's TCL rating. The mean firm-level governance results achieved, converted to mean percentage, were 63.67%, 51.61%, 70.80% and 64.40%.

When the mean corporate governance rating results for studies done in the United States were contrasted with the CLSA and ASSET4 ESG corporate governance rating results for studies done in emerging markets, it can be concluded that, in general, firm-level corporate governance in emerging markets is lower than that in the United States and other developed markets. This finding supports prior studies done in this field by Ananchotikul and Eichengreen (2009), Black et al. (2012) and Claessens and Yurtoglu (2013). This paper also shows that optimal governance also differs between emerging markets themselves, which supports prior studies by Durnev and Fauver (2007) and Black et al. (2012). Evidence of this can be seen in Figure 5-2 (Mean corporate governance and its category scores per country), where firms in South Africa, Thailand and Singapore scored higher in corporate governance compared to all of the firms in other countries in the sample. However, as Ananchotikul and Eichengreen (2009) state, and as can be observed in Figure 6-1, corporate governance in emerging market firms is improving.

6.2.2 Corporate Cash Holdings

Figure 6-2 shows the trend in cash and cash equivalents and total assets from 2009 to 2012.

Figure 6-2: Mean scores of cash and equivalents and total assets from 2009 to 2012



From Figure 6-2 above, it is clear that companies in emerging markets significantly grew their asset bases from 2009 to 2012. In the same time period, cash and equivalents grew, but at a lower rate compared to the growth of assets. This suggests that eventually, assuming these growth trajectories in cash and equivalents and total assets continue, cash to total assets will start decreasing. The results of the recent study by Quiry, Dallocchio, Le Fur and Salvi (2014), shown graphically in Appendix 9, indicate that cash and cash equivalents as a percentage of total assets in companies other than those in Europe, Japan and the United States, has been increasing from 2006 and started decreasing in 2011. The results in this paper, therefore, complement the results in Quiry et al. (2014). Table 5-5 (Descriptive statistics for the period 2009 – 2012) shows that the cash to total assets ratio peaked at 0.17 in 2010 and then started decreasing to 0.15 in 2011 – 2012, resulting in an overall mean for the entire period of 0.157. However, considering that the data is highly skewed, it made sense for the researcher to work with the median instead of the mean. The median cash to total assets in the sample decreased from 0.133 in 2009 to 0.121 in 2012. Table 6-1 compares the results from this paper with the results from previous studies done in developed markets where cash to total assets ratios were calculated.

Table 6-1: Comparison of cash to total asset ratios in various studies

Study	Sample and Time Period	Mean Cash to Total Assets
Dittmar and Mahrt-Smith (2007)	US firms (1990 – 2003)	0.060*
Guney et al. (2007)	France, Germany, Japan, UK, US (1996 – 2000)	0.112
Kim et al. (2011)	US restaurants (1997 – 2008)	0.084
Bigelli & Sánchez-Vidal (2012)	Italian private firms (1996 – 2005)	0.100
Bao et al. (2012)	US manufacturing firms (1972 – 2006)	0.122
This paper	Emerging market firms (2009 – 2012)	0.131*

*Median instead of mean (because of highly skewed data)

Table 6-1 only includes studies that calculated cash holdings as cash to total assets. Studies where cash holdings were calculated as the ratio of cash to net assets were not included to ensure a simpler comparison between cash to total assets in emerging and developed countries could be made. Opler et al. (1999) calculated the mean cash to net assets when they studied publicly traded firms in the United States in the 1971 – 1994 period, where net assets were defined as total assets less cash and marketable securities (Opler et al., 1999). The mean cash to net assets ratio in their study was calculated as 0.17. This would mean that the cash to total assets ratio would be lower than 0.17.

Table 6-1 shows that emerging market firms hold more cash than firms in developed markets. This finding supports prior studies by Dittmar et al. (2003) and Chang and Noorbakhsh (2009). Additionally, this finding supports the study by Quiry et al. (2014), which indicated that firms in Europe, Japan and the United States hold less cash and cash equivalents as a percentage of total assets compared to firms in the rest of the world (See Appendix 9). Dittmar et al. (2003) argue that because of the lower levels of shareholder protection in emerging markets, firms tend to hold higher cash balances. Chang and Noorbakhsh (2009) argue that higher cash balances may open doors for agency problems in these firms. To prevent potential agency problems from arising due to higher cash balances, certain emerging market firms prefer to cross-list in stock exchanges based in developed markets. Fresard and Salva (2010) found that firms that have a United States cross-listing, significantly mitigate the risk of managers turning the firm's cash holdings into private benefits.

Some studies that involved calculating cash to total assets for emerging markets yielded different results from this paper. Kusnadi and Wei (2011) studied emerging market firms in the 1995 - 2004 period and found that firms held 10% of their total assets in cash and marketable securities. Arslan et al. (2006) found that Turkish firms held approximately 10.4% of their total assets in cash and marketable securities in the 1998 – 2002 period: this percentage is lower than the cash holdings of 19.6% of total assets for Turkish firms included in this paper's sample. In addition, Al-Najjar (2013) found that Brazil, Russia, India and China held approximately 2%, 5%, 3% and 3.5% of their total assets in cash respectively during the period 2002 – 2008, compared to approximately 10% and 8% in the United States and United Kingdom over the same period. Contradictorily, whilst still referring to firms in Brazil, Russia, India and China, Ramı´rez and Tadesse (2009) found that they held approximately 9%, 7%, 6% and

18% of assets in cash respectively during the 1990 – 2004 period. These differences may well be due to the different sample sizes, different time periods and/or different industries included in the sample.

6.3. Discussion of Research Question One

It was discovered in section 6-2 above that, in general, emerging market firms are poorly governed and they hold larger cash balances compared to firms in developed markets (based on prior studies). Figure 5-6 (Scatter plot of mean scores of corporate governance and cash to total assets for 2009 to 2012) and Table 5-6 (Correlation matrix of mean scores of corporate governance and cash to total assets for 2009 to 2012) indicate that there is a negative relationship between overall firm-level corporate governance and corporate cash holdings. This means that within emerging markets, weakly governed firms tend to hold more cash. From a firm-level corporate governance perspective, this finding does not correlate with the findings of Dittmar and Mahrt-Smith (2007) and Harford et al. (2008).

Dittmar and Mahrt-Smith (2007) argue that firms with poor corporate governance dissipate cash quickly in ways that significantly reduce operating performance. Harford et al. (2008) found that weakly governed firms in the United States hold less cash because they quickly spend cash on acquisitions and capital expenditures, rather than hoard it. It must be noted, however, that the difference between this study and studies by Dittmar and Mahrt-Smith (2007) and Harford et al. (2008) is that this study was done on emerging market firms where, in general, legal rules are poor and minority shareholders are not as protected as they are in developed markets (Ananchotikul and Eichengreen, 2009; Black et al., 2012; Claessens & Yurtoglu, 2013). Therefore, because of the differences between legal rules, the definition of good governance cannot be the same in emerging markets and developed markets.

Both Dittmar and Mahrt-Smith (2007) and Harford et al. (2008) used the Gompers, Ishii and Metrick (GIM Index or G-Index) and the Bebchuk, Cohen and Ferrell (BCF Index or E-Index) governance indices, which are based on antitakeover provisions, in their studies. The two indices are based on the same raw data, but the BCF index is a reduced version of the GIM index with fewer provisions. The higher these indices are, the higher the number of antitakeover provisions, which is an indication of poor corporate governance. In the case of ASSET4 ESG, the corporate governance pillar measures the company's systems and procedures that ensure that the company's

long-term shareholders are taken care of. A higher ASSET4 ESG corporate governance score is thus an indication of good governance. Therefore, although the correlation coefficients between the GIM and BCF indices in the studies by Dittmar and Mahrt-Smith (2007) and Harford et al. (2008) were negative, it actually signals that poorly governed firms in the United States tend to hold lower cash reserves. In emerging markets, as it has been proved in this paper, poorly governed firms tend to hold higher cash reserves.

Prior researchers have been interested in understanding what factors motivate managers to hold large amounts of cash relative to assets. As a result, three hypotheses describing the reasons why companies stockpile cash were discussed in the literature review: the *spending*, *shareholder power* and *flexibility* hypotheses. According to both the *spending* and *shareholder* power hypotheses, corporate governance is positively associated with cash holdings; while according to the *flexibility* hypothesis, corporate governance is negatively associated with cash holdings. The results of research question one indicate that the latter hypothesis is the dominant theme in emerging markets. This means that emerging market firms stockpile cash to take advantage of future investment opportunities.

Chang and Noorbakhsh (2009) argue that corporations hold larger cash and liquid balances in countries where people tend to avoid uncertainty and have a long term orientation. By holding larger cash balances, emerging market firms may be avoiding uncertainty against possible future cash flow shortfalls. “One of the main benefits of holding a large cash balance is that it helps to fund capital investments in the future, especially when there is a deviation between the internal and external costs of financing” (Kusnadi & Wei, 2011, p. 727).

One must also take the sizes of companies into account when considering the results; emerging market firms are usually smaller in size compared to firms in similar industries in developed markets. Opler et al. (1999), for example, argue that firms that have the greatest access to capital markets, such as larger firms and those with high credit ratings, hold lower ratios of cash to total non-cash assets. This view was supported by D’Mello et al. (2008), who argue that smaller firms have difficulty accessing external funds because of limited collateral and scale economies and as a result, they hoard cash in an attempt to hedge against the risk of running out of cash in future. The effect of firm size on cash holdings was not tested in this study. However, if

one looks at firm size as the value of total assets in place, a comparison can be made between this study and prior studies done in developed markets.

In this study, the mean value of total assets is approximately US$ 9.8m, while the median firm has approximately US$ 4.2m worth of assets. The study by Dittmar and Mahrt-Smith (2007) on United States firms reports the mean value of assets in their sample as US$ 3,488m, while the median firm has approximately US$ 850m worth of assets. The study by Kim et al. (2011) on United States firms reports the mean value of assets in their sample as US$ 719m, while the median firm has approximately US$ 117m worth of assets. From this observation, it is clear that emerging market firms are smaller in size compared to their developed counterparts. This also supports the finding that emerging market firms hold larger cash balances. It is important to note that studies that investigated the effects of firm size on cash holdings mostly used the logarithm (or natural logarithm) of total assets as an indication of firm size.

Opler et al. (1999) provide evidence that shows that firms with strong growth opportunities and riskier cash flows, in general, hold more cash. This can also be used as the explanation for why higher cash balances are observed in emerging market firms. Emerging market economies are the fastest growing economies in the world today; while developed economies are normally saturated markets and firms in these markets look for growth opportunities in emerging markets. This can be observed in Africa today: firms in developed markets tend to look for growth in African economies because of the higher economic growth rates in these economies. Firms in African countries (excluding South African and Egyptian firms) were not included in this study because corporate governance data was not available. It would be expected that African firms would hold more cash than their developed counterparts because growth opportunities are immense and access to capital markets is limited.

In conclusion, from a firm-level perspective, the data in this study does not correlate with the literature on the impact of firm-level corporate governance on cash holdings in the United States. The negative association between firm-level corporate governance and cash holdings in this paper suggests that the *flexibility* hypothesis is the dominant theme in emerging market firms, which highlights that firms in emerging markets and developed markets behave differently when it comes to the reasons for holding cash.

6.4. Discussion of Research Question Two

Research question two asked whether board characteristics (board structure, board functions and compensation policy) have any impact on cash holdings. The results indicated that board characteristics are positively correlated to cash holdings. However, the dependent variable (cash holdings) does not vary with any of the independent variables (board characteristics) when all of the other independent variables are kept constant. This result is in agreement with the results from the study by Harford et al. (2008), which found that board size and board independence are insignificantly related to cash holdings. Munisi et al. (2014) argue that the structure of the board is usually decided in accordance with the agency costs in place. As an example, if the chances of management using company resources for their own benefit are high, the board structure will consist of a high proportion of independent directors and a low proportion of inside directors.

At first glance, the high cash holdings relative to assets in emerging markets observed in Table 6-1 (Comparison of cash to total assets ratios in various studies) may signal that agency costs in emerging markets are higher than those in developed markets. This is because the combination of weaker governance and high cash holdings might lead self-interested managers to use cash in ways that destroy shareholder value. Therefore, where corporate cash holdings are concerned, the actions and the characteristics of the board of directors should prevent self-interested managers from using cash for their own benefit. In other words, as board structure improves (increases) to a well-balanced board membership; as compensation policy improves (increases) to force alignment between management and shareholders and as board activities of monitoring and advising increase, cash holdings should decrease because high cash holdings are a signal that possible agency problems exist.

Thus, based on this explanation, there should be a negative correlation between board characteristics and cash holdings. However, when the individual components of board characteristics were viewed separately (Table 5-9 - Correlation matrix of variables involved in research question two), it was found that the Pearson correlation coefficients between board structure, compensation policy and board functions are negative, positive (but almost zero) and positive. The effects of board structure and board functions seem to cancel each other out, resulting in a slightly positive, but insignificant impact on cash holdings. From these results, it is clear that in the case of board functions, increased monitoring and advice by the board of directors results in higher cash balances being held by management. This reveals an important feature

about the composition and actions of boards of directors in emerging markets compared to developed markets. Boards in emerging markets are “expected to be smaller and to consist of more inside directors because this decreases the coordination costs and the costs of free-riding behaviour, and increases the effectiveness of monitoring, as insiders are expected to have better information sets” (Munisi et al., 2014, p. 787).

Boards in emerging markets tend to have more internal rather than external directors and their monitoring activities tend to be more operational as opposed to strategic. If boards in emerging markets are more likely to be extensions of management, then more cash and liquid holdings would be to their benefit. After studying the independence of boards in Brazil and Turkey, Black et al. (2012) cautions that “some nominally independent directors are not independent in fact, and firms appoint these directors to provide cover for self-dealing” (Black et al., 2012, p. 947). Therefore, the nature of emerging markets is such that the information environment is not yet fully developed, cross shareholding is common and family control is pervasive (Ananchotikul & Eichengreen, 2009). For example, controlling shareholders’ (such as founders and family members) board membership is common in India, with founders owning over 50% of outstanding shares on average, with costly consequences for minority shareholders (Jameson et al., 2014).

In conclusion, the data from the study supported the literature on the impact of board characteristics on cash holdings. Boards of directors have a positive impact on cash holdings in emerging markets.

6.5. Discussion of Research Question Three

Figure 6-1 (Mean scores of corporate governance and its categories from 2009 to 2012), shows that management’s commitment to shareholder rights in emerging markets is higher than the other firm-level categories of corporate governance. In Table 5-11 (Correlation matrix of mean scores of shareholder rights and cash to total assets for 2009 to 2012), it can be seen that shareholder rights are negatively correlated to corporate cash holdings and that the Pearson correlation coefficient is statistically significantly different from zero at the 0.01 level. This inverse relationship between shareholder rights protection and cash holdings is consistent with the findings by Dittmar et al. (2003) and Chang and Noorbakhsh (2006). This means that as shareholder rights increase, cash holdings decrease.

However, it is important to note that the studies by Dittmar et al. (2003) and Chang and Noorbakhsh (2006) focused on corporate governance from a country-level perspective, and not from a firm-level perspective. In other words, their studies were concerned with differences in country-level governance, and country-level protection of investors and legal rules are some of the differentiators between good and poor country-level governance, and these have an impact on cash holdings in firms. “Country specific characteristics such as corruption, country risk or shareholder rights explain a significant portion of the cross-country variation in cash holdings” (Ramı´rez & Tadesse, 2009, p. 389). In this paper, shareholder rights refer to management’s commitment to ensuring that minority investors are protected, which is a firm-level governance characteristic. However, the impact on cash holdings is expected to be the same as the country-level shareholder rights measure because both measures aim to achieve the same result: protection of minority investors.

In general, it is known that emerging markets lag behind developed markets in terms of shareholder rights (Claessens & Yurtoglu, 2013). Therefore, if management in emerging market firms show an increased commitment to the protection of all shareholders, the quality of firm-level governance will improve and this will translate to higher firm valuations (Abdo & Fisher, 2007). It is thus clear that firm-level governance matters more in emerging markets than in developed markets because of the opportunities for firms to differentiate themselves from each other by adopting good governance practices. A number of prior studies in emerging countries show that companies use the weak legal environment and the leeway in corporate-governance recommendations to highlight their quality (Durnev & Kim, 2005; Renders et al., 2010).

For example, Figure 5-2 (Mean corporate governance and its category scores per country) indicates that South African firms score the highest in terms of shareholder rights and overall corporate governance in the sample. There were no other African firms in the sample aside from Egypt, but it can be concluded that South African firms also score the highest in terms of corporate governance in Africa because of the highly developed stock market (Munisi et al., 2014). Therefore, in terms of investor attraction, it makes sense as to why South African firms and the Johannesburg Stock Exchange currently attract more investor funds than any other stock exchange in Africa. “Good corporate governance benefit firms through greater access to financing, lower cost of capital, better performance, and more favourable treatment of all stakeholders” (Claessens & Yurtoglu, 2013, p. 1).

The relationship between shareholder rights and cash holdings is central to the agency theory and it has been shown to apply to both samples drawn from developed and emerging markets. According to this relationship, the stronger the commitment of management towards ensuring that there is a proper policy on the equal treatment of shareholders, the lower the cash balances held by management. With regards to agency theory, higher cash balances are viewed in a negative light by shareholders. Management would therefore rather spend the cash quickly on acquisitions or return it to shareholders in the form of dividends or share repurchases. “The combination of excess cash and weak shareholder rights leads to increases in capital expenditures and acquisitions” (Harford et al., 2008). Stronger shareholder rights reduce agency costs by forcing management to use cash in a manner that increases shareholder value. When comparing emerging and developed markets, the fact that emerging markets tend to hold more cash than developed markets (Table 6-1 - Comparison of cash to total assets ratios in various studies) means that minority shareholders are much more protected in developed markets than in emerging markets. This is evident from prior studies.

To conclude, the data from the study supported the literature concerning the impact of shareholder rights on cash holdings. Shareholder rights protection has a significant impact on cash holdings in emerging markets.

6.6. Discussion of Research Question Four

Research question four asked whether vision and strategy has any impact on cash holdings. The results revealed a positive association between vision and strategy and cash holdings. This suggests that as management’s commitment towards the creation of an overarching vision and strategy integrating financial and extra-financial aspects increases, so do cash holdings. The vision and strategy view of corporate governance concerns whether or not the company has an integrated policy to integrate economic, social and governance (ESG) issues into its strategy and day-to-day decision making.

From a country perspective, Li, Fetscherin, Alon, Lattemann and Yeh (2010) argue that a country’s governance environment is the most important driving force behind corporate social responsibility (CSR) communications intensity; they also argue that firms communicating more CSR tend to be larger firms in the manufacturing industry. As discussed in prior sections of this chapter, developed countries tend to have a good governance system and also have a higher proportion of very large manufacturing

firms. It can therefore be argued that CSR communications are much more intense in developed markets than in emerging markets.

The vision and strategy score in Figure 6-1 (Mean scores of corporate governance and its categories from 2009 to 2012) significantly increases from 2011 to 2012. This shows that emerging market firms were becoming more committed to incorporating ESG issues into their strategies and day-to-day decision making. In fact, Baskin (2006) argues that reported CSR in emerging markets (especially those in South Africa, Brazil, India and parts of Eastern Europe) is more developed than commonly thought, often exceeding standards in some high-income countries. Furthermore, Cheung, Tan, Ahn & Zhang (2010) found that there was a positive relation between CSR activities among Asian firms and firm valuations, and added to this argument by stating that Asian firms were already being rewarded by the market for improving their CSR practice.

From the discussion above, it can be concluded that there is not much difference between the CSR statuses in emerging and developed economies. Therefore, the positive relation between vision and strategy and cash holdings in emerging markets is in line with the positive correlation obtained between firm-level corporate governance and cash holdings by Dittmar and Mahrt-Smith (2007) and Harford et al. (2008). This is because this category of corporate governance is at an advanced stage in emerging markets and can be considered to be on par with developed markets.

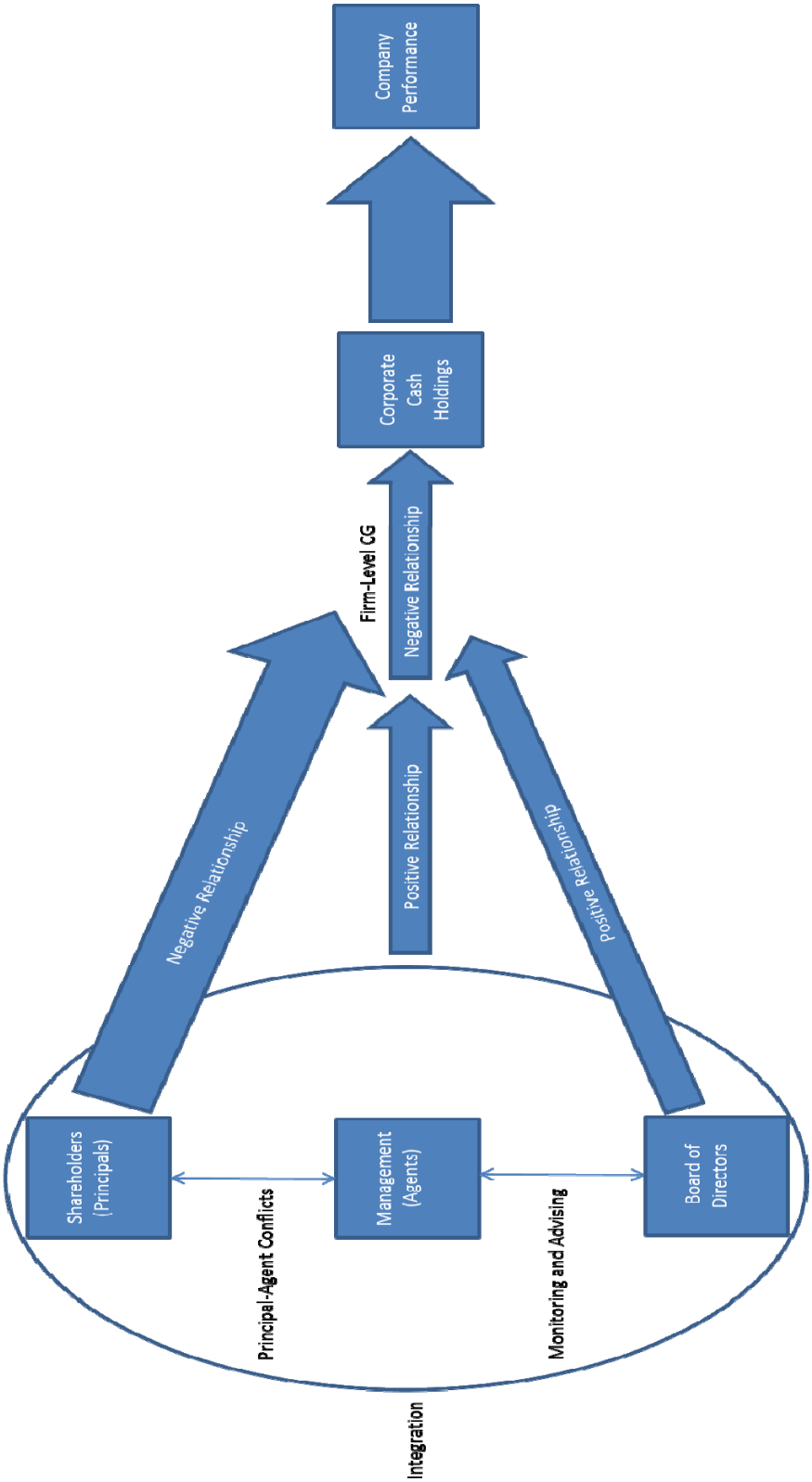
In conclusion, the data from the study supported the literature on the impact of vision and strategy on cash holdings. Vision and strategy, as part of firm-level corporate governance, has a positive impact on cash holdings in emerging markets.

6.7. Conclusion to the Discussion of Research Questions

Overall, it was found that firm-level corporate governance is negatively associated with corporate cash holdings in emerging markets. Figure 6-3 below shows a diagrammatical depiction of the relationships between shareholder rights, board of directors, vision and strategy (integration), firm-level corporate governance and corporate cash holdings in emerging markets. The size of the arrows in the diagram represents the strength of the association between the variables. Shareholders have the highest impact on cash holdings, while the strengths of the impact of the other corporate governance categories and overall firm-level corporate governance on cash holdings is low.

The other relationships shown in the diagram are principal-agent conflicts (agency problems) between management and shareholders; monitoring and advising of management by the board of directors and the overarching role vision and strategy, which integrates ESG aspects of the firms. Ultimately, as can be seen in the diagram, how management uses the firm's cash holdings will eventually impact on the overall performance of the firm.

Figure 6-3: Overall model depicting the relationship between corporate governance and its categories and corporate cash holdings



6.8. Conclusion to Chapter Six

This chapter has highlighted very important characteristics of emerging market firms and why they hold cash. Firstly, it was found that in general, emerging market firms have weaker corporate governance structures and hold more cash compared to their developed counterparts.

Secondly, it was highlighted that the negative relationship between firm-level corporate governance and cash holdings suggests that emerging market firms hold cash for *flexibility* purposes: preferring to hold large cash balances to take advantage of opportunities as they present themselves. Parallel to this point, it is clear that emerging market firms hold larger cash balances to avoid uncertainty and to hedge themselves against the difficulty of accessing external funds because of limited collateral and scale economies.

The board of directors was found to have a positive influence on cash holdings. This is because boards in emerging markets consist mainly of insiders and are not as independent as in developed markets: resulting in emerging market boards being an extension of management. This means that increased monitoring and advising activities by the board result in more cash being held by management, further increasing the potential for agency problems.

Contradictorily, shareholders were found to have a negative and larger influence on cash holdings. Thus, management's increased commitment to upholding shareholder rights means that they have to decrease their cash holdings; the reason being that increased cash balances are viewed as an existence of agency costs by shareholders.

Vision and strategy is a category of corporate governance that is far more advanced in emerging markets. This explains the positive relation between vision and strategy and cash holdings, which is similar to the results obtained in the study of firm-level corporate governance and cash holdings in the United States.

Chapter 7 : Conclusion

7.1. Introduction

Chapter Six discussed the results presented in Chapter Five in light of the existing literature review. Chapter Six also compared the results obtained in Chapter Five with the findings by various researchers in the field. This chapter will re-visit the background to the research problem and the objectives set out in Chapter One and discuss whether these were met. It will also summarise the main findings, discuss the limitations of this research and outline implications for future research.

7.2. Research Background and Objectives

This paper studied how firm-level corporate governance affects corporate cash holdings in 17 emerging market economies. Data on corporate governance and cash holdings were obtained from Thomson Reuters DataStream for the period 2009 to 2012. Corporate governance data was gathered as a rating by ASSET4, which is an organisation that reports economic, social and governance (ESG) data for over 4000 companies worldwide; this organisation was acquired by Thomson Reuters DataStream in 2009. The corporate governance categories that constitute the ASSET4 ESG corporate governance rating are board structure, compensation policy, board functions, shareholder rights and vision and strategy.

The main objective of this study was to determine if firm-level corporate governance is associated with cash holdings in emerging market firms. The aim of the study was to understand why emerging market firms hold cash, and if these reasons are different to those of developed market firms. Central to the reasons as to why firms hold cash are three hypotheses discussed in literature. The first hypothesis is the *spending* hypothesis, which argues that it is better to spend cash on projects rather than to keep it in the firm. The *shareholder power* hypothesis argues that managers prefer internal over external funds due to frictions in capital markets and the high cost of borrowing. The *flexibility* hypothesis argues that managers keep cash to take advantage of good investment opportunities as they become available.

The motivation for this study was two-fold: Firstly, prior research that established a positive association between corporate governance and company performance did not explain *how* corporate governance impacts performance. The handling and use of cash is one of the ways that can negatively or positively influence company performance through the concept of agency theory. Secondly, the few studies that were been done

on the association between firm-level corporate governance and cash holdings only focused on firms in the United States. Therefore, by studying the impact of firm-level corporate governance on cash holdings in emerging markets, this paper has filled a gap in literature.

7.3. Main Findings

This paper revealed that during the period under review (2009 – 2012), corporate governance and all its categories were improving, with the shareholder rights scores being the highest among all the corporate governance categories. However, when compared to previous studies which used corporate governance ratings to study corporate governance within firms in developed markets, it was found that corporate governance in emerging market firms was still low compared to developed markets, especially with regards to firms in the United States. It was also found that emerging market firms hold more cash relative to assets than firms in developed markets and these findings complement prior literature in this field. The reason why emerging market firms hold more cash relative to assets is that they face higher growth opportunities than firms situated in developed markets. Emerging markets currently experience higher economic growth rates than developed markets, which are saturated markets. To take advantage of these growth opportunities, emerging market firms hoard cash to pay for acquisitions and other strategic purchases. The other reason why emerging market firms hoard cash is to avoid bankruptcy: they cannot easily borrow funds because of limited collateral and economies of scale.

The main finding of this paper was that firm-level corporate governance is negatively associated with corporate cash holdings in emerging markets. This finding revealed important differences in the way developed and emerging market firms use cash holdings. This inverse relationship between firm-level corporate governance and cash holdings implies that the *flexibility* hypothesis is the dominant theme in emerging markets. Prior studies on the impact of firm-level corporate governance on cash holdings in firms situated in the United States indicated a positive association between the two variables, which suggests that the *shareholder power* and/or the *spending* hypotheses are dominant in developed markets. From a firm-level perspective, the result in this paper adds to the literature by showing that firms in emerging markets hold cash for different reasons compared to firms in developed markets. The practical implication of these reasons, which have been discussed in the previous paragraph, is that emerging market firms will use internal cash to fund acquisitions and growth

opportunities. After the relationship between firm-level corporate governance and cash holdings was established, the different categories of firm-level corporate governance were investigated.

A concern that was raised in the literature was that some corporate governance ratings contain categories that do not correlate with one another (Schnyder, 2012). In this paper, it was shown that this problem does not exist because all of the corporate governance categories correlated well with one another. This fact gives credibility to the ASSET4 ESG corporate governance measure and gives confidence that it takes interactions between the different categories into account. As previous researchers indicate, firm-level corporate governance categories may not show their full effect on cash holdings and firm performance individually, but they develop their full effect in combination with other categories (Ward et al., 2009; Schnyder, 2012). This paper, however, did investigate the impact of the individual corporate governance categories on cash holdings.

The first corporate governance category that was investigated was the impact of board characteristics on cash holdings. A multiple linear regression was set up in SPSS with board structure, compensation policy and board functions as the independent variables and corporate cash holdings as the dependent variable. The result showed that board characteristics are positively correlated to cash holdings. However, the dependent variable does not vary with any of the independent variables when all of the other independent variables are held constant. This finding complements literature, which found that board size and board independence are insignificantly related to cash holdings.

Management's commitment to ensuring that all shareholders are protected (shareholder rights) had the highest impact on cash holdings out of all of the corporate governance categories. A negative correlation between shareholder rights and cash holdings was found, indicating that as shareholder rights increase, cash holdings decrease. This correlation was found to be statistically significantly different from zero at the 0.01 level. This is an important aspect of agency theory because an increased level of cash holdings in a firm is a signal of high agency costs. Therefore, a strong commitment by management to shareholders means that they have to lower their cash holdings, because high cash levels are seen by shareholders as having the potential to be turned into private benefits or overspent on acquisitions by management. This relationship between shareholder rights and cash holdings complements literature,

which found that countries with high levels of shareholder rights tend to hold lower levels of cash holdings.

The final corporate governance category that was tested is vision and strategy, which is management's commitment to ensuring that there is an integrating philosophy encompassing CSR principles. The standard of CSR activities in most emerging market firms is the same as in developed market firms. It was discovered that a positive relationship exists between vision and strategy and cash holdings. No prior studies where vision and strategy was individually correlated with cash holdings, were found. However, as a component of firm-level corporate governance, this positive relationship complements literature, which found that a positive relationship exists between firm-level corporate governance and cash holdings in developed markets.

7.4. Limitations of the Research

This paper has made many comparisons with studies by Dittmar and Mahrt-Smith (2007) and Harford et al. (2008), both of which studied the impact of firm-level corporate governance on cash holdings in a sample of firms in the United States. The two studies had sample sizes of 1,952 and 1,500 respectively. Although attempts were made to include as many companies in emerging markets as possible in this paper, the lack of availability of corporate governance data prevented this from happening. A sample size of 620 companies in 17 countries meant that fewer companies were included in the sample per country. The study would have been more robust if it had included many more companies, perhaps in excess of 1,500. However, this said, it is not uncommon for studies involving multiple emerging markets to study smaller sample sizes compared to studies in developed markets. The study by Klapper and Love (2004), for example, had a sample size of 374 companies in 14 emerging markets. In general, it is challenging to gain access to corporate governance data for emerging market firms.

In many sections of this paper, comparisons with developed and other emerging market firms were made based on prior studies by various authors. The problem is that these studies were done in different time periods, with some being over five to ten years old. The world has changed so much in the past decade: some industries have grown considerably, while others have decreased in size. This means that comparisons based on prior studies may result in misleading conclusions. The proper way to make comparisons between developed and emerging markets would have been to include a

mixture of firms from the two types of economies in the sample, similar to the study by Al-Najjar (2013). The study by Al-Najjar (2013) included Brazil, Russia, India, China, United Kingdom and United States. The aim of the study was to compare the financial determinants of cash holdings between emerging and developed market firms. This study was much more powerful because both the developed (United Kingdom and United States) and emerging (Brazil, Russia, India, China) markets were analysed at the same time in the same study, giving better and reliable comparisons.

With the above paragraph in mind, it is often assumed that emerging market firms generally behave in a similar manner. For example, many studies on corporate governance in emerging markets (including the ones in this paper) make a general assumption that, with respect to the level of corporate governance, emerging market firms are inferior to developed market firms. However, the truth is that there is wide variation in corporate governance in emerging markets, and some emerging markets have a higher score of corporate governance than certain developed markets. To illustrate this, the studies by Dittmar et al. (2003) and Chang and Noorbakhsh (2006) grouped the countries they studied into those with high corporate governance and those with low corporate governance, and thus each group contained a combination of emerging and developed countries. Emerging market firms with very high/low corporate governance may skew the average towards the upper or lower side, regressing to the mean. Certain researchers are starting to do corporate governance studies in the correct way by excluding potential outliers. In their study of corporate boards and ownership structure in sub-Saharan Africa, Munisi et al. (2014) excluded South Africa and Zimbabwe from the sample. South Africa was excluded because of its relatively highly developed stock market compared to other sub-Saharan countries, while Zimbabwe was excluded because it suffered from hyperinflation during the years on which the study was based.

The final limitation of this study is that 35% of the sample firms were from South Africa and Hong Kong: this may have caused the sample to not be generally representative of the whole emerging market population. In the same light, firms in the sample are not relatively equally distributed between the different industries. There are more utilities, construction firms and metal producers than the other industries and this may also have skewed the sample to favour properties relating to these industries.

7.5. Implications for Future Research

This study has revealed a very important relationship between firm-level corporate governance and cash holdings in emerging markets. The result is different from what other authors obtained from firms in the United States. The first suggestion for future research would be for a researcher to repeat the study with more firms in the sample over a wider time period of at least ten years. It would also be useful to repeat the study with a different corporate governance rating that has been used in literature before: the Gompers, Ishii and Metrick governance index (GIM Index or G-Index); Bebchuk, Cohen and Ferrell governance index (BCF Index or E-Index), Credit Lyonnais Securities Asia (CLSA) governance index; Audit Integrity's Accounting and Governance Risk (AGR) rating; ISS's Corporate Governance Quotient (CGQ); Governance Metrics International (GMI) index; or The Corporate Library's TCL rating. The advantage of using different ratings is that the impact of other categories of corporate governance, that are not included in the ASSET 4 ESG rating, will also be tested in order to see how they relate to corporate cash holdings.

When the impact of corporate governance on certain company variables (e.g. cash holdings, company performance) is studied, it is always best to consider the full impact of firm-level or country-level governance. The full definition of corporate governance has to take both firm-level and country-level governance into account. Claessens and Yurtoglu (2013) define corporate governance as a set of behavioural patterns that consider the actual behaviour of corporations. This includes the way in which they treat shareholders and other stakeholders and the rules under which these corporations are operating - with the rules coming from sources such as the legal system, the judicial system or financial markets (Claessens & Yurtoglu, 2013). Therefore, one implication for future research would be to investigate the impact of both angles of corporate governance on cash holdings within the same study.

This study focused on the level of overall cash holdings in firms. However, overall cash holdings consist of cash that is needed for daily operations and excess cash, which is more likely to be wasted by self-interested managers and thus may lead to high agency costs. "Total cash does not account for the fact that managers may be less likely to waste cash resources needed for daily operations" (Dittmar & Mahrt-Smith, 2007, p. 615). Dittmar and Mahrt-Smith (2007) define excess cash as the cash held above a predicted "optimal" (or necessary) level of cash; they estimate optimal cash by using a regression of cash on variables that proxy for "legitimate" reasons firms hold cash, such as investment opportunities or hedging needs (Dittmar & Mahrt-Smith, 2007).

Excess cash is thus the difference between total cash and optimal cash. Therefore, an important area for future research is to determine the impact of corporate governance on excess cash, instead of corporate governance's impact on total cash.

Apart from South Africa, corporate governance in sub-Saharan Africa has not been studied very much because the data does not exist: international corporate governance ratings do not usually include firms from these countries. However, the latest study by Munisi et al. (2014) has made an attempt to gather this data from companies' annual reports. Data gathered by Munisi et al. (2014) included board size and the proportion of outside directors, which is measured as the ratio of outside directors to the total number of directors; ownership concentration, which is the proportion of shares owned by shareholders who own at least 5% of all shares outstanding at year-end (Munisi et al., 2014) and CEO ownership, which is the number of shares owned by the CEO divided by the total number of shares outstanding at year-end (Munisi et al., 2014). It is recommended that the impact of corporate governance on cash holdings for firms in sub-Saharan Africa be studied. Such a study would shed further light as to why emerging market firms hold cash, as well as how company performance is affected by corporate governance in sub-Saharan Africa.

7.6. Concluding remarks

Economic growth of emerging markets has been phenomenal in the past decade: often exceeding the growth of developed markets. Emerging markets have brought strategic long-term growth opportunities for developed market firms, as well as for other emerging market firms. In developed markets, economic growth rates are low and most firms are looking towards emerging markets for growth.

As foreign firms and local start-up companies increase in emerging markets, the local stock exchanges will also grow as these firms list on the stock exchanges and gain access to funds. Cash is an important asset in these markets because it is often used in acquisitions and other strategic purchases. This paper, in its exploration of the impact of corporate governance on cash holdings, contributes to literature as it provides verification of the fact that emerging market firms retain large cash balances to take advantage of profitable opportunities.

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Appendices

Appendix 1: Questions (indicators) that need to be answered to constitute corporate governance pillar and category scores

Pillar/Score	Name of Pillar/Score	Definition of Pillar / Category	High % = Positive or Negative?	Measurement Unit
Pillar score	Corporate Governance	The corporate governance pillar measures a company's systems and processes, which ensure that its board members and executives act in the best interests of its long term shareholders. It reflects a company's capacity, through its use of best management practices, to direct and control its rights and responsibilities through the creation of incentives, as well as checks and balances in order to generate long term shareholder value.	Positive	Percent (100=100 %)
Category score	Board of Directors/Board Functions	The board of directors/board functions category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to board activities and functions. It reflects a company's capacity to have an effective board by setting up the essential board committees with allocated tasks and responsibilities.	Positive	Percent (100=100 %)
Indicator score	Score - Board Functions/Policy	Does the company have a policy for maintaining effective board functions?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Policy	Does the company have a policy for maintaining effective board functions?	Positive	Y/N
Indicator score	Score - Board Functions/Implementation	Does the company describe the implementation of its board functions policy?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Implementation	Does the company describe the implementation of its board functions policy?	Positive	Y/N
Indicator score	Score - Board Functions/Monitoring	Does the company monitor the board functions through the establishment of a corporate governance committee?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Monitoring	Does the company monitor the board functions through the establishment of a corporate governance committee?	Positive	Y/N

Indicator score	Score - Board Functions/Improvements	Does the company have the necessary internal improvement and information tools to develop appropriate and effective board functions?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Improvements	Does the company have the necessary internal improvement and information tools to develop appropriate and effective board functions?	Positive	Y/N
Datapoint element	Board Functions and Committees Policy Elements/Audit	Does the company have a policy to maintain an effective and independent audit committee?	Not applicable	Y/N
Datapoint element	Board Functions and Committees Policy Elements/Nomination	Does the company have a policy to maintain an effective and independent nomination committee?	Not applicable	Y/N
Datapoint element	Board Functions and Committees Policy Elements/Compensation	Does the company have a policy to maintain an effective and independent compensation committee?	Not applicable	Y/N
Datapoint element	Board Functions and Committees Policy Elements/CSR	Does the company have a policy to maintain an effective and independent CSR committee?	Not applicable	Y/N
Datapoint element	Board Functions and Committees Policy Elements/Effective Board	Does the company have a general, all-purpose policy on the effectiveness and independence of its board committees?	Not applicable	Y/N
Datapoint element	Board Functions and Committees Policy Compliance/Audit	Does the company comply with regulations regarding audit committees?	Not applicable	Y/N/NA
Datapoint element	Board Functions and Committees Policy Compliance/Nomination	Does the company comply with regulations regarding nomination committees?	Not applicable	Y/N/NA
Datapoint element	Board Functions and Committees Policy Compliance/Compensation	Does the company comply with regulations regarding compensation committees?	Not applicable	Y/N/NA
Datapoint element	Board Functions and Committees Policy Compliance/CSR	Does the company comply with regulations regarding CSR committees?	Not applicable	Y/N/NA

Datapoint element	Board Functions and Committees Policy Compliance/Effective Board	Does the company comply with regulations regarding the general effectiveness and independence of its board committees?	Not applicable	Y/N/NA
Datapoint	Corporate Governance Committee	Does the company have a corporate governance committee?	Not applicable	Y/N
Datapoint	Board Functions and Committees Improvement Tools	Does the company have the necessary internal improvement and information tools to develop appropriate and effective board functions and committees?	Not applicable	Y/N
Datapoint	Audit Committee Independence	Percentage of independent board members on the audit committee as stipulated by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Audit Committee Non-Executive Member	Percentage of non-executive board members on the audit committee as stipulated by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Compensation Committee Independence	Percentage of independent board members on the compensation committee as stipulated by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Compensation Committee Non-Executive Member	Percentage of non-executive board members on the compensation committee as stipulated by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Nomination Committee Independence	Percentage of independent board members on the nomination committee as stipulated by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Nomination Committee Non-Executive Member	Percentage of non-executive board members on the nomination committee as stipulated by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Number of Board Meetings	The number of board meetings during the year.	Not applicable	Number/NA
Datapoint	Board Meeting Attendance Average	The average overall attendance percentage of board meetings as reported by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Committee Meetings Attendance Average	The average overall attendance percentage of board committee meetings as reported by the company.	Not applicable	Percent (100=100 %)/NA
Datapoint	Board Functioning Processes	Does the company describe, claim to have or mention the processes it uses to accomplish effective board functioning?	Not applicable	Y/N
Datapoint	Board Functioning Processes	Do the board or board committees have the authority to hire external advisers or consultants without management's approval?	Not applicable	Y/N

Indicator score	Score - Board Functions/Audit Committee Independence	Percentage of independent board members on the audit committee as stipulated by the company.	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Audit Committee Independence	Percentage of independent board members on the audit committee as stipulated by the company.	Positive	Percent (100=100 %)
Indicator score	Score - Board Functions/Audit Committee Management Independence	Does the company report that all audit committee members are non-executives?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Audit Committee Management Independence	Does the company report that all audit committee members are non-executives?	Positive	Y/N
Indicator score	Score - Board Functions/Audit Committee Expertise	Does the company have an audit committee with at least three members and at least one "financial expert" within the meaning of Sarbanes-Oxley?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Audit Committee Expertise	Does the company have an audit committee with at least three members and at least one "financial expert" within the meaning of Sarbanes-Oxley?	Positive	Y/N
Indicator score	Score - Board Functions/Compensation Committee Independence	Percentage of independent board members on the compensation committee as stipulated by the company.	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Compensation Committee Independence	Percentage of independent board members on the compensation committee as stipulated by the company.	Positive	Percent (100=100 %)
Indicator score	Score - Board Functions/Compensation Committee Management Independence	Does the company report that all compensation committee members are non-executives?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Compensation Committee Management Independence	Does the company report that all compensation committee members are non-executives?	Positive	Y/N
Indicator score	Score - Board Functions/Nomination Committee Independence	Percentage of non-executive board members on the nomination committee.	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Nomination Committee Independence	Percentage of non-executive board members on the nomination committee.	Positive	Percent (100=100 %)

Indicator score	Score - Board Functions/Nomination Committee Management Independence	Are the majority of the nomination committee members non-executives?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Nomination Committee Management Independence	Are the majority of the nomination committee members non-executives?	Positive	Y/N
Indicator score	Score - Board Functions/Nomination Committee Processes	Does the nomination committee have the responsibility for the selection, appointment and succession procedures for board members or executives? OR Does the company report or show to constantly supervise the performance of board members or executives?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Nomination Committee Processes	Does the nomination committee have the responsibility for the selection, appointment and succession procedures for board members or executives? OR Does the company report or show to constantly supervise the performance of board members or executives?	Positive	Y/N
Indicator score	Score - Board Functions/Nomination Committee Involvement	Percentage of nomination committee members who are significant shareholders (more than 5%).	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Nomination Committee Involvement	Percentage of nomination committee members who are significant shareholders (more than 5%).	Positive	Percent (100=100 %)
Indicator score	Score - Board Functions/Board Meetings	Number of board meetings per year.	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Board Meetings	Number of board meetings per year.	Positive	Number/NA
Indicator score	Score - Board Functions/Board Attendance	Does the company publish information about the attendance of the individual board members at board meetings?	Positive	Percent (100=100 %)
Indicator value	Value - Board Functions/Board Attendance	Does the company publish information about the attendance of the individual board members at board meetings?	Positive	Y/N

Category score	Board of Directors/Board Structure	The board of directors/board structure category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to a well-balanced membership of the board. It reflects a company's capacity to ensure a critical exchange of ideas and an independent decision-making process through an experienced, diverse and independent board.	Positive	Percent (100=100 %)
Indicator score	Score - Board Structure/Policy	Does the company have a policy for maintaining a well-balanced membership of the board?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Policy	Does the company have a policy for maintaining a well-balanced membership of the board?	Positive	Y/N
Indicator score	Score - Board Structure/Implementation	Does the company describe the implementation of its balanced board structure policy?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Implementation	Does the company describe the implementation of its balanced board structure policy?	Positive	Y/N
Indicator score	Score - Board Structure/Monitoring	Does the company monitor the board functions through the establishment of a nomination committee?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Monitoring	Does the company monitor the board functions through the establishment of a nomination committee?	Positive	Y/N
Indicator score	Score - Board Structure/Improvements	Does the company have the necessary internal improvement and information tools to develop balanced board structure?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Improvements	Does the company have the necessary internal improvement and information tools to develop balanced board structure?	Positive	Y/N
Datapoint element	Balanced Board Structure Policy Elements/Size	Does the company have a policy regarding the size of its board?	Not applicable	Y/N
Datapoint element	Balanced Board Structure Policy Elements/Independence	Does the company have a policy regarding the independence of its board?	Not applicable	Y/N
Datapoint element	Balanced Board Structure Policy Elements/Gender	Does the company have a policy regarding the gender diversity of its board?	Not applicable	Y/N
Datapoint element	Balanced Board Structure Policy Elements/Culture	Does the company have a policy regarding the cultural diversity of its board?	Not applicable	Y/N

Datapoint element	Balanced Board Structure Policy Elements/Experience	Does the company have a policy regarding the adequate experience on its board?	Not applicable	Y/N
Datapoint element	Balanced Board Structure Policy Elements/Balanced Board	Does the company have a general, all-purpose policy regarding a balanced board?	Not applicable	Y/N
Datapoint element	Balanced Board Structure Policy Compliance/Size	Does the company comply with regulations regarding board size?	Not applicable	Y/N/NA
Datapoint element	Balanced Board Structure Policy Compliance/Independence	Does the company comply with regulations regarding board independence?	Not applicable	Y/N/NA
Datapoint element	Balanced Board Structure Policy Compliance/Gender	Does the company comply with regulations regarding the gender diversity of the board?	Not applicable	Y/N/NA
Datapoint element	Balanced Board Structure Policy Compliance/Culture	Does the company comply with regulations regarding the cultural diversity of the board?	Not applicable	Y/N/NA
Datapoint element	Balanced Board Structure Policy Compliance/Experience	Does the company comply with regulations regarding the experience on the board?	Not applicable	Y/N/NA
Datapoint element	Balanced Board Structure Policy Compliance/Balanced Board	Does the company comply with regulations regarding a general balanced board?	Not applicable	Y/N/NA
Datapoint	Nomination Committee	Does the company have a nomination committee?	Not applicable	Y/N
Datapoint	Balanced Board Structure Improvement Tools	Does the company have the necessary internal improvement and information tools for the board members to develop an appropriate balanced board structure?	Not applicable	Y/N
Datapoint	Board Structure Type	The company has a unitary board structure, a classical two-tier board structure with a supervisory board or a mixed two-tiered board structure with a board of directors and a supervisory board.	Not applicable	Unitary/Two-tier/Mixed//NA
Datapoint	Chairman is ex-CEO	Has the chairman held the CEO position in the company prior to becoming chairman?	Not applicable	Y/N
Datapoint	Board Size	The total number of board members at the end of the fiscal year.	Not applicable	Number/NA
Datapoint	CEO Board Member	The CEO is a board member.	Not applicable	Y/N/NA
Datapoint	Board Member Membership Limits	The maximum number of years a board member can be on the board as stipulated by the company.	Not applicable	Number (Years)/NA/No Limit

Datapoint	Board Member Term Duration	The smallest interval of years in which the board members are subject to re-election.	Not applicable	Number (Years)/NA
Datapoint	Board Structure Processes	Does the company describe, claim to have or mention the processes it uses to accomplish a balanced board structure?	Not applicable	Y/N
Indicator score	Score - Board Structure/Size of Board	Total number of board members which are in excess of ten or below eight.	Negative	Percent (100=100 %)
Indicator value	Value - Board Structure/Size of Board	Total number of board members which are in excess of ten or below eight.	Negative	Number/NA
Indicator score	Score - Board Structure/Background and Skills	Does the company describe the professional experience or skills of every board member? OR Does the company provide information about the age of individual board members?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Background and Skills	Does the company describe the professional experience or skills of every board member? OR Does the company provide information about the age of individual board members?	Positive	Y/N
Indicator score	Score - Board Structure/Board Diversity	Is there female representation on the board? OR Is there foreign culture representation on the board?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Board Diversity	Is there female representation on the board? OR Is there foreign culture representation on the board?	Positive	Y/N
Indicator score	Score - Board Structure/Specific Skills	Percentage of board members who have either an industry specific background or a strong financial background.	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Specific Skills	Percentage of board members who have either an industry specific background or a strong financial background.	Positive	Percent (100=100 %)
Indicator score	Score - Board Structure/Experienced Board	Average number of years each board member has been on the board.	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Experienced Board	Average number of years each board member has been on the board.	Positive	Number (Years)/NA
Indicator score	Score - Board Structure/Non-Executive Board Members	Percentage of non-executive board members.	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Non-Executive Board Members	Percentage of non-executive board members.	Positive	Percent (100=100 %)

Indicator score	Score - Board Structure/Independent Board Members	Percentage of independent board members as reported by the company.	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Independent Board Members	Percentage of independent board members as reported by the company.	Positive	Percent (100=100 %)
Indicator score	Score - Board Structure/Strictly Independent Board Members	Percentage of strictly independent board members (not employed by the company; not served on the board for more than ten years; not a reference shareholder with more than 5% of holdings; no cross-board membership; no recent, immediate family ties to the corporation; not accepting any compensation other than compensation for board service).	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Strictly Independent Board Members	Percentage of strictly independent board members (not employed by the company; not served on the board for more than ten years; not a reference shareholder with more than 5% of holdings; no cross-board membership; no recent, immediate family ties to the corporation; not accepting any compensation other than compensation for board service).	Positive	Percent (100=100 %)
Indicator score	Score - Board Structure/CEO-Chairman Separation	Does the CEO simultaneously chair the board? AND Has the chairman of the board been the CEO of the company?	Negative	Percent (100=100 %)
Indicator value	Value - Board Structure/CEO-Chairman Separation	Does the CEO simultaneously chair the board? AND Has the chairman of the board been the CEO of the company?	Negative	Double Y/N
Indicator score	Score - Board Structure/Mandates Limitation	Does the company provide information about the other mandates of individual board members? AND Does the company stipulate a limit of the number of years of board membership?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Mandates Limitation	Does the company provide information about the other mandates of individual board members? AND Does the company stipulate a limit of the number of years of board membership?	Positive	Double Y/N
Indicator score	Score - Board Structure/Board Member Affiliations	Average number of other corporate affiliations for the board member.	Negative	Percent (100=100 %)
Indicator value	Value - Board Structure/Board Member Affiliations	Average number of other corporate affiliations for the board member.	Negative	Number/NA

Indicator score	Score - Board Structure/Individual Re-election	Are all board members individually subject to re-election (no classified or staggered board structure)?	Positive	Percent (100=100 %)
Indicator value	Value - Board Structure/Individual Re-election	Are all board members individually subject to re-election (no classified or staggered board structure)?	Positive	Y/N
Indicator score	Score - Board Structure/Term Duration	The interval of years in which the board members are subject to re-election.	Negative	Percent (100=100 %)
Indicator value	Value - Board Structure/Term Duration	The interval of years in which the board members are subject to re-election.	Negative	Number (Years)/N A
Indicator value	Value - Board Structure/Active Board Members	The total number of board members at the end of the fiscal year.	Not applicable	Number
Indicator value	Value - Board Structure/Board Members with CV	Total number of board members with publicly disclosed professional background/CV.	Not applicable	Number
Indicator value	Value - Board Structure/Board Gender Diversity	Percentage of women on the board of directors.	Not applicable	Percent (100=100 %)
Category score	Board of Directors/Compensation Policy	The board of directors/compensation policy category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to competitive and proportionate management compensation. It reflects a company's capacity to attract and retain executives and board members with the necessary skills by linking their compensation to individual or company-wide financial or extra-financial targets.	Positive	Percent (100=100 %)
Indicator score	Score - Compensation Policy/Policy	Does the company have a policy for performance-oriented compensation that attracts and retain the senior executives and board members?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Policy	Does the company have a policy for performance-oriented compensation that attracts and retain the senior executives and board members?	Positive	Y/N
Indicator score	Score - Compensation Policy/Implementation	Does the company describe the implementation of its compensation policy?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Implementation	Does the company describe the implementation of its compensation policy?	Positive	Y/N

Indicator score	Score - Compensation Policy/Monitoring	Does the company monitor the senior executives and board compensation through the establishment of a compensation committee?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Monitoring	Does the company monitor the senior executives and board compensation through the establishment of a compensation committee?	Positive	Y/N
Indicator score	Score - Compensation Policy/Improvements	Does the company have the necessary internal improvement and information tools to develop attractive and performance-oriented compensation policy?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Improvements	Does the company have the necessary internal improvement and information tools to develop attractive and performance-oriented compensation policy?	Positive	Y/N
Datapoint element	Compensation Policy Elements/Performance Oriented	Does the company have a performance oriented compensation policy?	Not applicable	Y/N
Datapoint element	Compensation Policy Elements/Extra-Financial Performance Oriented	Does the company have an extra-financial performance oriented compensation policy?	Not applicable	Y/N
Datapoint element	Compensation Policy Elements/Executive Retention	Does the company have a general, all-purpose policy regarding compensation to attract and retain executives?	Not applicable	Y/N
Datapoint element	Compensation Policy Compliance/Performance Oriented	Does the company comply with regulations on performance oriented compensation?	Not applicable	Y/N/NA
Datapoint element	Compensation Policy Compliance/Extra-Financial Performance Oriented	Does the company comply with regulations on extra-financial performance oriented compensation?	Not applicable	Y/N/NA
Datapoint element	Compensation Policy Compliance/Executive Retention	Does the company comply with regulations on general compensation to attract and retain executives?	Not applicable	Y/N/NA
Datapoint	Compensation Committee	Does the company have a compensation committee?	Not applicable	Y/N
Datapoint	Compensation Improvement Tools	Does the company have the necessary internal improvement and information tools for the board members to develop appropriate compensation/remuneration to attract and retain key executives?	Not applicable	Y/N

Datapoint	Senior Executive Long-term Compensation incentives	The maximum time horizon of targets to reach full senior executives' compensation.	Not applicable	Number (Years)/NA
Datapoint	CEO Compensation Link to Total Shareholder Return	Is the CEO's compensation linked to total shareholder return (TSR)?	Not applicable	Y/N
Datapoint	Board Member Long-term Compensation incentives	The maximum time horizon of the board member's targets to reach full compensation.	Not applicable	Number (Years)/NA
Datapoint	Non-Executive Board Member Total Compensation	The total compensation of non-executive board members (if total aggregate is reported by the company).	Not applicable	Number (Currency = Local Reporting Currency)/NA
Datapoint	Total Senior Executives Compensation	The total compensation paid to all senior executives (if total aggregate is reported by the company).	Not applicable	Number (Currency = Local Reporting Currency)/NA
Datapoint	Senior Executive Remuneration Structure	Does the company claim to subdivide the remuneration of senior executives according to fixed salaries, bonuses and stock option plans (or restricted stocks)?	Not applicable	Y/N
Datapoint	Shareholders' Approval of Stock Option Programme	Do the company's statutes or bylaws require that stock options are only granted with a majority vote at a shareholder meeting?	Not applicable	Y/N
Datapoint	Shareholders' Approval of Stock Option Programme Compliance	Does the company comply with regulations stating that stock options are only granted with a vote at a shareholder meeting?	Not applicable	Y/N/NA
Datapoint	Vesting of Stock Options/Restricted Stock	The number of years that the company's most recently granted stock options or restricted stocks takes to fully vest (since the date of the grant).	Not applicable	Number (Years)/NA
Datapoint	Management Compensation Controversies	Number of controversies published in the media linked to high executive or board compensation.	Not applicable	Number/NA
Datapoint	Compensation Policy Processes	Does the company describe, claim to have or mention the processes it uses to accomplish adequate compensation/remuneration to attract and retain key executives?	Not applicable	Y/N
Datapoint	Recent Management Compensation	Number of controversies published in the media linked to high executive or board compensation published since	Not applicable	Number/NA

	Controversies	the last fiscal year company update.		
Indicator score	Score - Compensation Policy/Individual Compensation	Does the company provide information about the total individual compensation of all executives and board members?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Individual Compensation	Does the company provide information about the total individual compensation of all executives and board members?	Positive	Y/N
Indicator score	Score - Compensation Policy/Highest Remuneration Package	Highest remuneration package within the company in US dollars.	Negative	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Highest Remuneration Package	Highest remuneration package within the company in US dollars.	Negative	Number/NA
Indicator score	Score - Compensation Policy/Board Member Compensation	Total compensation of the non-executive board members in US dollars.	Negative	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Board Member Compensation	Total compensation of the non-executive board members in US dollars.	Negative	Number (Currency = USD)/NA
Indicator score	Score - Compensation Policy/Remuneration Structure	Does the company subdivide the remuneration of executives according to fixed salaries, bonuses and stock option plans (or restricted stocks)?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Remuneration Structure	Does the company subdivide the remuneration of executives according to fixed salaries, bonuses and stock option plans (or restricted stocks)?	Positive	Y/N
Indicator score	Score - Compensation Policy/Stock Option Program	Do the company's statutes or by-laws require that stock-options are only granted with a vote at a shareholder meeting?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Stock Option Program	Do the company's statutes or by-laws require that stock-options are only granted with a vote at a shareholder meeting?	Positive	Y/N
Indicator score	Score - Compensation Policy/Stock Compensation	Do the company's most recently granted stocks or stock options vest in a three-year period at a minimum?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Stock Compensation	Do the company's most recently granted stocks or stock options vest in a three-year period at a minimum?	Positive	Y/N

Indicator score	Score - Compensation Policy/Long Term Objectives	Is the management and board members remuneration partly linked to objectives or targets which are more than two years forward looking?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Long Term Objectives	Is the management and board members remuneration partly linked to objectives or targets which are more than two years forward looking?	Positive	Y/N
Indicator score	Score - Compensation Policy/Compensation Controversies	Is the company under the spotlight of the media because of a controversy linked to high executive or board compensation?	Negative	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Compensation Controversies	Is the company under the spotlight of the media because of a controversy linked to high executive or board compensation?	Negative	Y/N
Indicator score	Score - Compensation Policy/Sustainability Compensation Incentives	Is the senior executive's compensation linked to CSR/H&S/Sustainability targets?	Positive	Percent (100=100 %)
Indicator value	Value - Compensation Policy/Sustainability Compensation Incentives	Is the senior executive's compensation linked to CSR/H&S/Sustainability targets?	Positive	Y/N
Category score	Integration/Vision and Strategy	The integration/vision and strategy category measures a company's management commitment and effectiveness towards the creation of an overarching vision and strategy integrating financial and extra-financial aspects. It reflects a company's capacity to convincingly show and communicate that it integrates the economic (financial), social and environmental dimensions into its day-to-day decision-making processes.	Positive	Percent (100=100 %)
Indicator score	Score - Vision and Strategy/Policy	Does the company have a policy for maintaining an overarching vision and strategy that integrates financial and extra-financial aspects of its business?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Policy	Does the company have a policy for maintaining an overarching vision and strategy that integrates financial and extra-financial aspects of its business?	Positive	Y/N

Indicator score	Score - Vision and Strategy/Implementation	Does the company describe the implementation of its integrated strategy through a public commitment from a senior management or board member? AND Does the company describe the implementation of its integrated strategy through the establishment of a CSR committee or team?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Implementation	Does the company describe the implementation of its integrated strategy through a public commitment from a senior management or board member? AND Does the company describe the implementation of its integrated strategy through the establishment of a CSR committee or team?	Positive	Double Y/N
Indicator score	Score - Vision and Strategy/Monitoring	Does the company monitor its integrated strategy through belonging to a specific sustainability index? AND Does the company monitor its integrated strategy through conducting external audits on its reporting?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Monitoring	Does the company monitor its integrated strategy through belonging to a specific sustainability index? AND Does the company monitor its integrated strategy through conducting external audits on its reporting?	Positive	Double Y/N
Indicator score	Score - Vision and Strategy/Improvements	Does the company set specific objectives to be achieved on the integrated strategy?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Improvements	Does the company set specific objectives to be achieved on the integrated strategy?	Positive	Y/N
Datapoint element	Integrated Vision and Strategy Policy/Integrated Strategy	Does the company have a policy to integrate ESG issues into its strategy and day-to-day decision making?	Not applicable	Y/N
Datapoint element	Integrated Vision and Strategy Commitment/Integrated Strategy	Has there been a public commitment from a senior management or board member to integrate ESG issues into the company strategy and day-to-day decision making?	Not applicable	Y/N
Datapoint	CSR Sustainability Committee	Does the company have a CSR committee or team?	Not applicable	Y/N
Datapoint	CSR Sustainability Index	Does the company report on belonging to a specific sustainability index?	Not applicable	Y/N

Datapoint element	Integrated Vision and Strategy Objectives/Integrated Strategy	Has the company set targets or objectives to be achieved on the integration of ESG issues into its strategy and day-to-day decision making?	Not applicable	Quantitative/Qualitative/Both/NA
Datapoint	Integrated Vision and Strategy Challenges and Opportunities	Is the company openly reporting about the challenges or opportunities of integrating financial and extra-financial issues, and the dilemmas and trade-offs it faces?	Not applicable	Y/N
Datapoint	Integrated Vision and Strategy Management Discussion and Analysis MD&A	Does the company explicitly integrate financial and extra-financial factors in its management discussion and analysis (MD&A) section in the annual report?	Not applicable	Y/N/NA
Datapoint	Global Compact	Has the company signed the UN Global Compact?	Not applicable	Y/N
Datapoint	Global Compact Years	Number of years the company has been a signatory of UN Global Compact.	Not applicable	Number (Years)/NA
Datapoint	Stakeholder Engagement	Does the company explain how it engages with its stakeholders?	Not applicable	Y/N
Datapoint	CSR Sustainability Reporting	Does the company publish a separate CSR/H&S/Sustainability report or publish a section in its annual report on CSR/H&S/Sustainability?	Not applicable	Y/N
Datapoint	GRI Report Guidelines	Is the company's CSR report published in accordance with the GRI guidelines?	Not applicable	Y/N/NA
Datapoint	CSR Sustainability Report Global Activities	Does the company's extra-financial report take into account the global activities of the company?	Not applicable	Y/N/NA
Datapoint	CSR Sustainability External Audit	Does the company have an external auditor of its CSR/H&S/Sustainability report?	Not applicable	Y/N/NA
Datapoint	CSR Sustainability External Audit Name	The name of the external auditor of the sustainability report.	Not applicable	Name/NA
Indicator score	Score - Vision and Strategy/Challenges and Opportunities	Does the company report about the challenges or opportunities linked to the integration of financial and extra-financial issues?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Challenges and Opportunities	Does the company report about the challenges or opportunities linked to the integration of financial and extra-financial issues?	Positive	Y/N
Indicator score	Score - Vision and Strategy/Integrated Strategy	Does the company integrate financial and extra-financial factors in the management discussion and analysis section of the annual report?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Integrated Strategy	Does the company integrate financial and extra-financial factors in the management discussion and analysis section of the annual report?	Positive	Y/N

Indicator score	Score - Vision and Strategy/Global Compact Signatory	Is the company a signatory of the Global Compact?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Global Compact Signatory	Is the company a signatory of the Global Compact?	Positive	Y/N
Indicator score	Score - Vision and Strategy/Stakeholder Engagement	Does the company explain how it engages with its stakeholders?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Stakeholder Engagement	Does the company explain how it engages with its stakeholders?	Positive	Y/N
Indicator score	Score - Vision and Strategy/Transparency	Does the company publish a separate CSR/H&S/Sustainability report or publish a section in its annual report on CSR/H&S/Sustainability?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Transparency	Does the company publish a separate CSR/H&S/Sustainability report or publish a section in its annual report on CSR/H&S/Sustainability?	Positive	Y/N
Indicator score	Score - Vision and Strategy/GRI Report	Is the company's CSR report published in accordance with the GRI guidelines?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/GRI Report	Is the company's CSR report published in accordance with the GRI guidelines?	Positive	Y/N
Indicator score	Score - Vision and Strategy/Global Reporting	Does the company's extra-financial report take into account of the global activities of the company?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/Global Reporting	Does the company's extra-financial report take into account of the global activities of the company?	Positive	Y/N
Indicator score	Score - Vision and Strategy/CSR Reporting Auditor	Does the company have an external auditor of its CSR/H&S/Sustainability report?	Positive	Percent (100=100 %)
Indicator value	Value - Vision and Strategy/CSR Reporting Auditor	Does the company have an external auditor of its CSR/H&S/Sustainability report?	Positive	Y/N
Category score	Shareholders /Shareholder Rights	The shareholders/shareholder rights category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to a shareholder policy and equal treatment of shareholders. It reflects a company's capacity to be attractive to minority shareholders by ensuring them equal rights and privileges and by limiting the use of anti-takeover devices.	Positive	Percent (100=100 %)

Indicator score	Score - Shareholder Rights/Policy	Does the company have a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement or limiting the use of anti-takeover devices?	Positive	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Policy	Does the company have a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement or limiting the use of anti-takeover devices?	Positive	Y/N
Indicator score	Score - Shareholder Rights/Implementation	Does the company describe the implementation of its shareholder rights policy?	Positive	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Implementation	Does the company describe the implementation of its shareholder rights policy?	Positive	Y/N
Indicator score	Score - Shareholder Rights/Monitoring	Does the company monitor the shareholder rights through the establishment of a corporate governance committee?	Positive	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Monitoring	Does the company monitor the shareholder rights through the establishment of a corporate governance committee?	Positive	Y/N
Indicator score	Score - Shareholder Rights/Improvements	Does the company have the necessary internal improvement and information tools to develop appropriate shareholder rights principles?	Positive	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Improvements	Does the company have the necessary internal improvement and information tools to develop appropriate shareholder rights principles?	Positive	Y/N
Datapoint element	Shareholder Rights Policy Elements/Equal Voting Right	Does the company have a policy to apply the one-share, one-vote principle?	Not applicable	Y/N
Datapoint element	Shareholder Rights Policy Elements/Anti-Takeover	Does the company have a policy limiting the use of anti-takeover devices?	Not applicable	Y/N
Datapoint element	Shareholder Rights Policy Elements/Shareholder Engagement	Does the company have a policy to facilitate shareholder engagement, resolutions or proposals?	Not applicable	Y/N
Datapoint element	Shareholder Rights Policy Elements/Shareholder Rights	Does the company have a general, all-purpose policy regarding shareholder rights?	Not applicable	Y/N

Datapoint element	Shareholder Rights Policy Compliance/Equal Voting Right	Does the company comply with regulations regarding equal voting rights principles?	Not applicable	Y/N/NA
Datapoint element	Shareholder Rights Policy Compliance/Anti-Takeover	Does the company comply with regulations regarding anti-takeover devices?	Not applicable	Y/N/NA
Datapoint element	Shareholder Rights Policy Compliance/Shareholder Engagement	Does the company comply with regulations regarding shareholder engagement, resolutions or proposals?	Not applicable	Y/N/NA
Datapoint element	Shareholder Rights Policy Compliance/Shareholder Rights	Does the company comply with regulations regarding general shareholder rights?	Not applicable	Y/N/NA
Datapoint	Shareholder Rights Improvement Tools	Does the company have the necessary internal improvement and information tools for the board members to develop appropriate shareholder rights principles?	Not applicable	Y/N
Datapoint	Dual Class Stock	Does the company have dual-class stocks (class A/B, registered/bearer shares)?	Not applicable	Y/N
Datapoint	Non-Voting Shares	Does the company have non-voting rights common (not preferred) shares?	Not applicable	Y/N
Datapoint	Multiple or Double Voting Rights Shares	Does the company have multiple (double) voting rights shares?	Not applicable	Y/N
Datapoint	Priority Shares or Transfer Limitations	Does the company have shares with different rights like priority shares or transfer limitations?	Not applicable	Y/N
Datapoint	Voting Cap	Does the company have shares with a voting cap (ceilings) clause, ownership ceilings or control share acquisition provision?	Not applicable	Y/N
Datapoint	Voting Cap Percentage	The percentage of maximum voting rights allowed or ownership rights.	Not applicable	Percent (100=100 %)/NA
Datapoint	Minimum Number of Shares to Vote	Has the company set requirements for a minimum number of shares to vote?	Not applicable	Y/N
Datapoint	Majority Requirements for the Election of Directors	Are the company's board members generally elected with a majority vote?	Not applicable	Y/N
Datapoint	Shareholders Vote on Executive Pay	Do the company's shareholders have the right to vote on executive compensation?	Not applicable	Y/N
Datapoint	Articles of Association or Statutes or Bylaws	The company's articles of association, statues or bylaws are publicly available or on request.	Not applicable	Public/On Request/NA

Datapoint	Single Biggest Owner	The percentage ownership of the single biggest owner (by voting power).	Not applicable	Percent (100=100 %)/NA
Datapoint	Single Biggest Owner Voting Rights	The percentage voting right of the single biggest owner (by voting power).	Not applicable	Percent (100=100 %)/NA
Datapoint	Single Biggest Owner Name	The name of the biggest owner (by voting power).	Not applicable	Name/NA
Datapoint	Veto Power or Golden share	Does the biggest owner (by voting power) hold the veto power or own golden shares?	Not applicable	Y/N/NA
Datapoint	Public or Private Veto Power	A private or government (public) owner holds the veto or golden share.	Not applicable	Private/Public/NA
Datapoint	Poison Pill	Does the company have a poison pill (shareholder rights plan, macaroni defence, etc.)?	Not applicable	Y/N/NA
Datapoint	Unlimited Authorized Capital or Blank Check	Does the company have unlimited authorized capital or a blank check?	Not applicable	Y/N/NA
Datapoint	Classified Board Structure	Does the company have a classified board structure?	Not applicable	Y/N/NA
Datapoint	Staggered Board Structure	Does the company have a staggered board structure?	Not applicable	Y/N/NA
Datapoint	Supermajority or Qualified Majority Vote Requirements	Does the company have a supermajority vote requirement or qualified majority (for amendments of charters and bylaws or lock-in provisions)?	Not applicable	Y/N/NA
Datapoint	Golden Parachute	Does the company have a golden parachute or other restrictive clauses related to changes of control (compensation plan for accelerated pay-out)?	Not applicable	Y/N/NA
Datapoint	Limited Shareholder Rights to Call Meetings	Has the company limited the rights of shareholders to call special meetings?	Not applicable	Y/N/NA
Datapoint	Elimination of Cumulative Voting Rights	Has the company reduced or eliminated cumulative voting in regard to the election of board members?	Not applicable	Y/N/NA
Datapoint	Pre-emptive Rights	Does the company grant pre-emptive rights to existing shareholders?	Not applicable	Y/N/NA
Datapoint	Company Cross Shareholding	Does the company have significant cross shareholding that can prevent takeovers?	Not applicable	Y/N/NA
Datapoint	Confidential Voting Policy	Does the company have a confidential voting policy (i.e., management cannot view the results of shareholder votes)?	Not applicable	Y/N/NA
Datapoint	Other Anti-Takeover Devices	Does the company have some other form of anti-takeover device (limitation of director liability, people pill, customer refund programme, etc.)?	Not applicable	Y/N/NA

Datapoint element	General Shareholder Rights Controversies/Equal Voting Right	Number of controversies published in the media linked to infringements of the one-share, one-vote principle.	Not applicable	Number/NA
Datapoint element	General Shareholder Rights Controversies/Anti-Takeover	Number of controversies published in the media linked to anti-takeover infringements.	Not applicable	Number/NA
Datapoint element	General Shareholder Rights Controversies/Shareholder Engagement	Number of controversies published in the media linked to shareholder engagement infringements.	Not applicable	Number/NA
Datapoint element	General Shareholder Rights Controversies/Voting Procedure	Number of controversies published in the media linked to voting procedure infringements.	Not applicable	Number/NA
Datapoint element	General Shareholder Rights Controversies/Majority Vote	Number of controversies published in the media linked to majority vote infringements.	Not applicable	Number/NA
Datapoint element	General Shareholder Rights Controversies/Shareholder Rights	Number of controversies published in the media linked to general shareholder rights infringements.	Not applicable	Number/NA
Datapoint	CalPERS Focus List	Is the company on the CalPERS Focus List?	Not applicable	Y/N
Datapoint	Shareholder Rights Controversies	Number of controversies linked to shareholder rights infringements published in the media.	Not applicable	Number/NA
Datapoint	Recent Shareholder Rights Controversies	Number of controversies linked to shareholder rights infringements published since the last fiscal year company update.	Not applicable	Number/NA
Datapoint	Share Holder Rights Processes	Does the company describe, claim to have or mention the processes it uses to accomplish shareholder rights?	Not applicable	Y/N
Datapoint	Significant Company Transactions (M&A) Shareholders Approval	Limitations to the shareholders right to approve significant company transitions such as M& As (no rights to vote or supermajority required)?	Not applicable	Y/N/NA
Datapoint	Fair Price Provision	Is the company subject to fair price provision, either under applicable law or as stated in the company documents (charter or bylaws)?	Not applicable	Y/N/NA
Datapoint	Limitations on Removal of Directors	Are these limitations on the shareholders' right to remove board members (i.e., only for cause, supermajority vote required, etc.)?	Not applicable	Y/N/NA
Datapoint	Advance Notice for Shareholder	Does the company have deadlines relating to shareholder proposals?	Not applicable	Y/N/NA

	Proposals			
Datapoint	Advance Notice Period	What is the minimum interval prior to the next shareholder meeting beyond which a shareholder proposal will not be accepted?	Not applicable	Text/NA
Datapoint	Written Consent Requirements	Does the company permit actions to be taken without meeting by written consent?	Not applicable	Y/N/NA
Datapoint	Expanded Constituency Provision	Does the company have expanded-constituency provisions in place?	Not applicable	Y/N/NA
Datapoint	Poison Pill Adoption Date	The adoption date of the poison pill.	Not applicable	Date/NA
Datapoint	Poison Pill Expiration Date	The expiration date of the poison pill.	Not applicable	Date/NA
Indicator score	Score - Shareholder Rights/Share Structure	Is the company's outstanding equity constituted of 100% common stocks?	Positive	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Share Structure	Is the company's outstanding equity constituted of 100% common stocks?	Positive	Y/N
Indicator score	Score - Shareholder Rights/Voting Rights	Are all shares of the company providing equal voting rights?	Positive	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Voting Rights	Are all shares of the company providing equal voting rights?	Positive	Y/N
Indicator score	Score - Shareholder Rights/Majority Shareholders	Percentage of shares held by all insiders and 5% owners.	Negative	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Majority Shareholders	Percentage of shares held by all insiders and 5% owners.	Negative	Percent (100=100 %)
Indicator score	Score - Shareholder Rights/Available Articles of Association	Are the company's articles of association, statues or bylaws publicly available or on request?	Positive	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Available Articles of Association	Are the company's articles of association, statues or bylaws publicly available or on request?	Positive	Y/N
Indicator score	Score - Shareholder Rights/Ownership	Is the company owned by a reference shareholder who has the majority of the voting rights, veto power or golden share?	Negative	Percent (100=100 %)

Indicator value	Value - Shareholder Rights/Ownership	Is the company owned by a reference shareholder who has the majority of the voting rights, veto power or golden share?	Negative	Y/N
Indicator score	Score - Shareholder Rights/Anti-Takeover Devices	The number of anti-takeover devices in place in excess of two.	Negative	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Anti-Takeover Devices	The number of anti-takeover devices in place in excess of two.	Negative	Number/NA
Indicator score	Score - Shareholder Rights/Shareholder Controversies	Is the company under the spotlight of the media because of a controversy linked to shareholders rights?	Negative	Percent (100=100 %)
Indicator value	Value - Shareholder Rights/Shareholder Controversies	Is the company under the spotlight of the media because of a controversy linked to shareholders rights?	Negative	Y/N

Appendix 2: Market capitalisations (in millions of local currencies) of 56 emerging and developed countries

Exchange	Cur.	2013 December	2014 January	% change / Jan (in USD)	% change / (in local cur)
Americas					
Bermuda SE	BED	NA	1 681.6	**12.7%**	**12.7%**
BM&FBOVESPA	BRL	2 407 560.3	2 206 592.7	**-27.6%**	**-11.8%**
Buenos Aires SE	ARA	346 137.0	358 762.0	**6.3%**	**71.3%**
Colombia SE	COP	391 603 351.0	364 180 916.7	**-32.5%**	**-23.1%**
Lima SE	PEI	226 469.8	213 535.8	**-26.9%**	**-20.0%**
Mexican Exchange	MXP	6 889 332.0	6 589 945.0	**-10.6%**	**-5.9%**
NASDAQ OMX	USD	6 084 969.7	5 997 512.8	**25.7%**	**25.7%**
NYSE Euronext (US)	USD	17 949 883.8	17 006 535.4	**15.2%**	**15.2%**
Santiago SE	CLP	139 323 110.0	131 584 686.0	**-29.6%**	**-16.9%**
TMX Group	CAD	2 245 935.6	2 268 263.4	**-3.2%**	**8.1%**
Asia - Pacific					
Australian SE	AUD	1 526 868.0	1 487 221.0	**-10.0%**	**7.6%**
BSE India	INR	70 442 578.4	67 443 983.8	**-18.5%**	**-4.0%**
Bursa Malaysia	MYR	1 639 019.0	1 614 927.3	**8.4%**	**16.7%**
Colombo SE	LKR	2 459 896.7	2 608 268.7	**12.8%**	**16.7%**
GreTai Securities Market	TWD	2 324 821.4	2 362 083.8	**30.0%**	**33.4%**
HoChiMinh SE	VND	845 092 561.6	983 659 373.6	**27.5%**	**28.9%**
Hong Kong Exchanges	HKD	24 042 805.9	22 971 999.0	**-0.7%**	**-0.5%**
Indonesia SE	IDR	4219 020 241.0	4382 396 368.8	**-18.2%**	**2.6%**
Japan Exchange Group - Osaka	JPY	NA	NA	**-**	**-**
Japan Exchange Group - Tokyo	JPY	477 509 792.7	450 861 818.6	**22.4%**	**36.7%**
Korea Exchange	KRW	1302 880 809.0	1266 583 448.0	**3.5%**	**1.7%**
National Stock Exchange India	INR	68 841 665.6	65 907 848.1	**-18.4%**	**-3.9%**
New Zealand Exchange	NZD	80 143.3	82 536.8	**18.7%**	**23.3%**
Philippine SE	PHP	9 645 216.4	9 902 946.6	**-12.1%**	**-2.1%**
Shanghai SE	CNY	15 116 527.3	14 631 212.1	**-10.4%**	**-12.6%**
Shenzhen SE	CNY	8 791 192.4	9 151 356.1	**22.9%**	**19.8%**
Singapore Exchange	SGD	939 896.2	915 783.7	**-10.0%**	**-7.1%**
Taiwan SE Corp.	TWD	24 519 560.1	24 137 805.9	**7.6%**	**10.4%**
The Stock Exchange of Thailand	THB	11 644 498.2	11 437 543.8	**-18.4%**	**-9.7%**
Europe - Africa - Middle East					
Abu Dhabi SE	AED	402 703.0	433 881.0	**60.1%**	**60.1%**
Amman SE	JOD	18 233.5	19 470.5	**-1.3%**	**-1.6%**
Athens Exchange	EUR	59 938.6	60 181.7	**62.5%**	**63.6%**
BME Spanish Exchanges	EUR	810 288.3	792 058.5	**2.9%**	**3.5%**
Borsa Istanbul	TRY	420 559.2	391 499.8	**-35.9%**	**-17.6%**
Budapest SE	HUF	4 268 162.4	4 336 609.6	**-17.1%**	**-11.0%**
Casablanca SE	MAD	439 377.1	449 808.9	**4.3%**	**5.1%**
Cyprus SE	EUR	1 527.4	1 605.4	**6.4%**	**7.1%**
Deutsche Börse	EUR	1 405 032.3	1 373 361.7	**17.6%**	**18.4%**
Dubai Financial Market	AED	NA	281 065.6	**-**	**-**
Egyptian Exchange	EGP	428 239.8	453 163.3	**15.7%**	**19.9%**
Euronext	EUR	2 600 836.0	2 552 666.0	**14.2%**	**14.9%**
Irish SE	EUR	123 458.0	137 849.8	**48.1%**	**49.1%**
Johannesburg SE	ZAR	9 874 825.5	9 674 094.3	**-3.3%**	**20.9%**
Kazakhstan SE	KZT	4 048 324.4	4 185 921.8	**-2.2%**	**0.8%**
Ljubljana SE	EUR	5 173.1	5 497.6	**9.8%**	**10.5%**
Luxembourg SE	EUR	57 069.7	55 578.5	**0.7%**	**1.4%**
Malta SE	EUR	NA	3 263.9	**15.3%**	**16.0%**
Mauritius SE	MUR	268 717.7	271 770.4	**19.6%**	**19.4%**
Moscow Exchange	RUR	25 323 776.6	24 779 257.9	**-20.1%**	**-6.3%**
Muscat Securities Market	OMR	14 155.1	14 515.0	**22.1%**	**22.1%**
NASDAQ OMX Nordic Exchange	EUR	921 068.5	919 995.9	**14.4%**	**15.2%**
Oslo Børs	NOK	1 610 016.3	1 580 727.9	**-3.0%**	**11.4%**
Qatar Exchange	QAR	555 606.3	589 352.1	**23.9%**	**24.0%**
Saudi Stock Exchange - Tadawul	SAR	1 752 855.4	1 801 711.9	**25.1%**	**25.1%**
SIX Swiss Exchange	CHF	1 370 298.4	1 371 099.0	**13.5%**	**12.9%**
Tel Aviv SE	ILS	705 659.0	715 123.0	**24.0%**	**17.5%**
Wiener Börse	EUR	85 394.1	88 742.5	**7.2%**	**7.9%**

Source : World Federation of Exchanges members

Non-members statistics are available under queries on WFE website at http://www.world-exchanges.org/statistics/monthly-query-tool Total excludes Osaka and National Stock Exchange of India to avoid double counting with Tokyo and Bombay SE respectively

Australian SE: including investment funds

BME: including investment companies listed (open-end investmernt companies) that differ from investment funds included in table 1.3.2 because of their legal status and that cannot be distinguished from other listed companies Johannesburg SE: figures include the market capitalization of all listed companies, but exclude listed warrants, convertibles and investment funds

JPX - Osaka SE: on 16 July 2013, Osaka SE cash equity products were listed on Tokyo SE JPX - Tokyo SE: on 16 July 2013, Osaka SE cash equity products were listed on Tokyo SE Korea Exchange: includes Kosdaq market data

Mauritius SE: from Aug. 2006, data includes Development & Enterprise Market

NASDAQ OMX Nordic Exchange: OMX includes Copenhagen, Helsinki, Iceland, Stockholm, Tallinn, Riga and Vilnius Stock Exchanges

Singapore Exchange: market capitalization includes domestic listings and a substantial number of foreign listings, defined as companies whose principal place of business is outside of Singapore. Inactive secondary foreign listings are excluded TSX Group: also includes TSX Venture market cap

Appendix 3: Final dataset arranged by detailed industry grouping

Detailed Industry Grouping

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airlines	15	2.4	2.4	2.4
	Aluminium Producers	5	.8	.8	3.2
	Apparel Fabrics	1	.2	.2	3.4
	Apparel Manufacturers	4	.6	.6	4.0
	Apparel Store Chains	4	.6	.6	4.7
	Appliances & Consumer Products	5	.8	.8	5.5
	Brewers	8	1.3	1.3	6.8
	Builders' Metal Products	1	.2	.2	6.9
	Canners & Processors	2	.3	.3	7.3
	Cement Products	15	2.4	2.4	9.7
	Cigarette Manufacturers	2	.3	.3	10.0
	Coal Producers	13	2.1	2.1	12.1
	Communications	38	6.1	6.1	18.2
	Construction Aggregates	1	.2	.2	18.4
	Construction Machinery	4	.6	.6	19.0
	Copper Producers	2	.3	.3	19.4
	Cosmetics & Toiletries	2	.3	.3	19.7
	Crude Oil & Natural Gas Producers	9	1.5	1.5	21.1
	Dairy Products	1	.2	.2	21.3
	Department Store Chains	12	1.9	1.9	23.2
	Discount Stores	2	.3	.3	23.5
	Distillers	2	.3	.3	23.9
	Diversified	8	1.3	1.3	25.2
	Diversified Automotive Manufacturers	12	1.9	1.9	27.1
	Diversified Chemical Manufacturers	5	.8	.8	27.9
	Diversified Construction Companies	19	3.1	3.1	31.0
	Diversified Electrical Manufacturers	2	.3	.3	31.3
	Diversified Electronics	2	.3	.3	31.6
	Diversified Food	2	.3	.3	31.9
	Diversified Machinery	1	.2	.2	32.1

Diversified Paper Companies	3	.5	.5	32.6
Diversified Textiles	1	.2	.2	32.7
Electric Power & Gas Companies	2	.3	.3	33.1
Electric Power Companies	31	5.0	5.0	38.1
Electric Power Holding Companies	4	.6	.6	38.7
Electronic Data Processing Equipment	1	.2	.2	38.9
Engineering & Contracting Services	6	1.0	1.0	39.8
Engines, Components & Parts Manufacturers	1	.2	.2	40.0
Ethical Drug Manufacturers	11	1.8	1.8	41.8
Exploration, Drilling Service & Equipment	1	.2	.2	41.9
Freight Forwarders	4	.6	.6	42.6
Furnishings	1	.2	.2	42.7
General Diversified	24	3.9	3.9	46.6
Glass	3	.5	.5	47.1
Gold Producers	8	1.3	1.3	48.4
Holding Companies of Oil, Gas, Coal & Related Services	1	.2	.2	48.5
Home Builders	3	.5	.5	49.0
Home Furnishings	1	.2	.2	49.2
Hotel & Motel Chains	7	1.1	1.1	50.3
Industrial & Commercial Electrical Equipment	2	.3	.3	50.6
Industrial Chemicals & Gases Manufacturers	3	.5	.5	51.1
Industrial Machinery	2	.3	.3	51.5
Iron Ore Producers	5	.8	.8	52.3
Liquefied Petroleum Gas Distributors	2	.3	.3	52.6
Local Food Store Chains	1	.2	.2	52.7
Meat Packers	3	.5	.5	53.2
Medical Services	8	1.3	1.3	54.5
Medical, Surgical & Dental Suppliers	1	.2	.2	54.7
Military & Commercial Aircraft Manufacturers	1	.2	.2	54.8

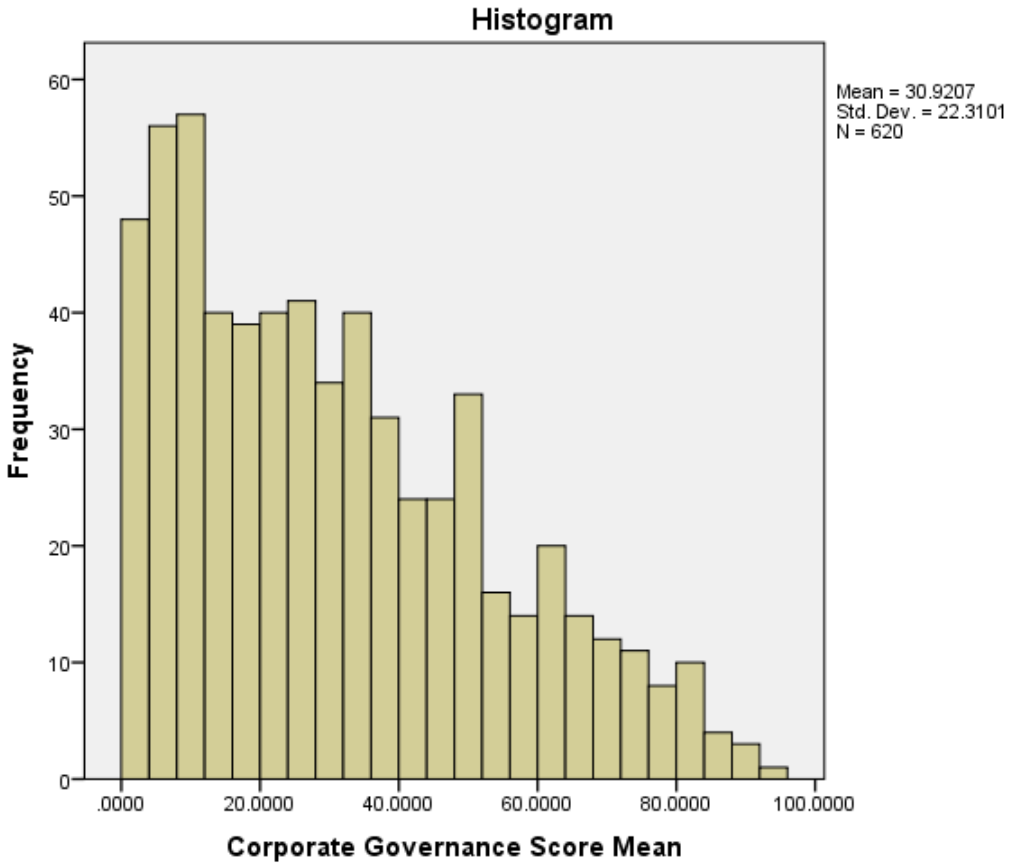
Miscellaneous Aerospace	2	.3	.3	55.2
Miscellaneous Chemicals	12	1.9	1.9	57.1
Miscellaneous Companies	5	.8	.8	57.9
Miscellaneous Construction	29	4.7	4.7	62.6
Miscellaneous Electrical	4	.6	.6	63.2
Miscellaneous Electronics	10	1.6	1.6	64.8
Miscellaneous Food	25	4.0	4.0	68.9
Miscellaneous Machinery & Equipment	3	.5	.5	69.4
Miscellaneous Metal Producers	14	2.3	2.3	71.6
Miscellaneous Metal Products Manufacturers	2	.3	.3	71.9
Miscellaneous Oil, Gas & Coal	4	.6	.6	72.6
Miscellaneous Paper Producers	2	.3	.3	72.9
Miscellaneous Recreation	6	1.0	1.0	73.9
Miscellaneous Retailers	22	3.5	3.5	77.4
Miscellaneous Textiles	2	.3	.3	77.7
Miscellaneous Tobacco Manufacturers	1	.2	.2	77.9
Miscellaneous Transportation	4	.6	.6	78.5
Motion Picture Producers & Distributors	1	.2	.2	78.7
National Regional Food Store Chains	2	.3	.3	79.0
Natural Gas Distributors	2	.3	.3	79.4
Natural Gas Pipelines	2	.3	.3	79.7
Newspaper Publishers	1	.2	.2	79.8
Oil Refiners & Distributors	8	1.3	1.3	81.1
Original Parts & Accessories Manufacturers	2	.3	.3	81.5
Packaging Products Producers	5	.8	.8	82.3
Paint & Reprocessing Manufacturers	2	.3	.3	82.6
Parts & Components	4	.6	.6	83.2
Portable Tools	1	.2	.2	83.4
Printing & Writing Paper Producers	2	.3	.3	83.7
Radio & T.V. Broadcasts	5	.8	.8	84.5
Radio, T.V. & Phonograph Manufacturers	1	.2	.2	84.7

	Railroad Holding Companies	1	.2	.2	84.8
	Railroads	1	.2	.2	85.0
	Replacement Parts & Accessories Manufacturers	1	.2	.2	85.2
	Restaurants & Fast Food Franchisers	4	.6	.6	85.8
	Rubber & Tire Manufacturers	1	.2	.2	86.0
	Service Organizations	13	2.1	2.1	88.1
	Shipbuilding	4	.6	.6	88.7
	Shipping	10	1.6	1.6	90.3
	Shoe Manufacturers	3	.5	.5	90.8
	Soft Drink Producers & Bottlers	5	.8	.8	91.6
	Sporting Goods	2	.3	.3	91.9
	Steel Producers - Integrated	12	1.9	1.9	93.9
	Steel Producers - Non-Integrated	6	1.0	1.0	94.8
	Sugar Producers	2	.3	.3	95.2
	Synthetic Fibers	2	.3	.3	95.5
	Systems & Subsystems	4	.6	.6	96.1
	Transportation Equipment	4	.6	.6	96.8
	Truck & Trailer Manufacturers	1	.2	.2	96.9
	Trucking	2	.3	.3	97.3
	Variety Store Chains	3	.5	.5	97.7
	Water Companies	4	.6	.6	98.4
	Wholesalers	10	1.6	1.6	100.0
	Total	620	100.0	100.0	

Appendix 4: Test for normality

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Corporate Governance Score Mean	620	100.0%	0	0.0%	620	100.0%
Board Structure Score Mean	620	100.0%	0	0.0%	620	100.0%
Compensation Policy Score Mean	620	100.0%	0	0.0%	620	100.0%
Board Functions Score Mean	620	100.0%	0	0.0%	620	100.0%
Shareholder Rights Score Mean	620	100.0%	0	0.0%	620	100.0%
Vision and Strategy Score Mean	620	100.0%	0	0.0%	620	100.0%



Descriptives

			Statistic	Std. Error
Corporate Governance Score Mean	Mean		30.920711	.8959935
	95% Confidence Interval for Mean	Lower Bound	29.161156	
		Upper Bound	32.680266	
	5% Trimmed Mean		29.736591	
	Median		26.666667	
	Variance		497.739	
	Std. Deviation		22.3100587	
	Minimum		1.5450	
	Maximum		92.8125	
	Range		91.2675	
	Interquartile Range		35.0738	
	Skewness		.645	.098
	Kurtosis		-.464	.196
Board Structure Score Mean	Mean		31.395257	.9098974
	95% Confidence Interval for Mean	Lower Bound	29.608397	
		Upper Bound	33.182117	
	5% Trimmed Mean		30.363005	
	Median		27.117500	
	Variance		513.306	
	Std. Deviation		22.6562628	
	Minimum		2.7650	
	Maximum		90.6150	
	Range		87.8500	
	Interquartile Range		36.8792	
	Skewness		.512	.098
	Kurtosis		-.870	.196
Compensation Policy Score Mean	Mean		29.974074	.8442542
	95% Confidence Interval for Mean	Lower Bound	28.316124	
		Upper Bound	31.632024	
	5% Trimmed Mean		28.996662	
	Median		27.650417	
	Variance		441.914	
	Std. Deviation		21.0217600	
	Minimum		2.3500	
	Maximum		82.8000	
	Range		80.4500	
	Interquartile Range		32.2729	
	Skewness		.540	.098

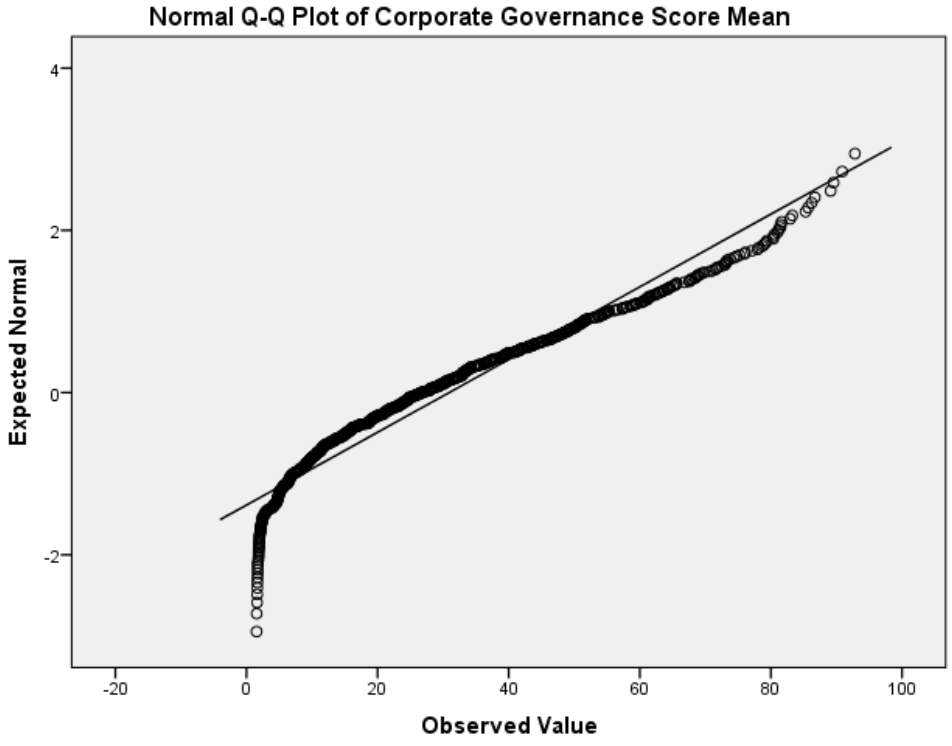
	Kurtosis		-.704	.196
Board Functions Score Mean	Mean		38.156250	1.0247468
	95% Confidence Interval for Mean	Lower Bound	36.143848	
		Upper Bound	40.168652	
	5% Trimmed Mean		37.627691	
	Median		35.428333	
	Variance		651.066	
	Std. Deviation		25.5159899	
	Minimum		2.3533	
	Maximum		86.7900	
	Range		84.4367	
	Interquartile Range		46.3304	
	Skewness		.230	.098
	Kurtosis		-1.279	.196
Shareholder Rights Score Mean	Mean		47.905991	1.1659812
	95% Confidence Interval for Mean	Lower Bound	45.616232	
		Upper Bound	50.195749	
	5% Trimmed Mean		47.555460	
	Median		46.120833	
	Variance		842.898	
	Std. Deviation		29.0326987	
	Minimum		9.5500	
	Maximum		93.6200	
	Range		84.0700	
	Interquartile Range		60.5825	
	Skewness		.094	.098
	Kurtosis		-1.533	.196
Vision and Strategy Score Mean	Mean		37.990816	1.0096410
	95% Confidence Interval for Mean	Lower Bound	36.008079	
		Upper Bound	39.973553	
	5% Trimmed Mean		37.025796	
	Median		34.520000	
	Variance		632.012	
	Std. Deviation		25.1398582	
	Minimum		.9450	
	Maximum		97.0475	
	Range		96.1025	
	Interquartile Range		40.7231	
	Skewness		.415	.098
	Kurtosis		-.795	.196

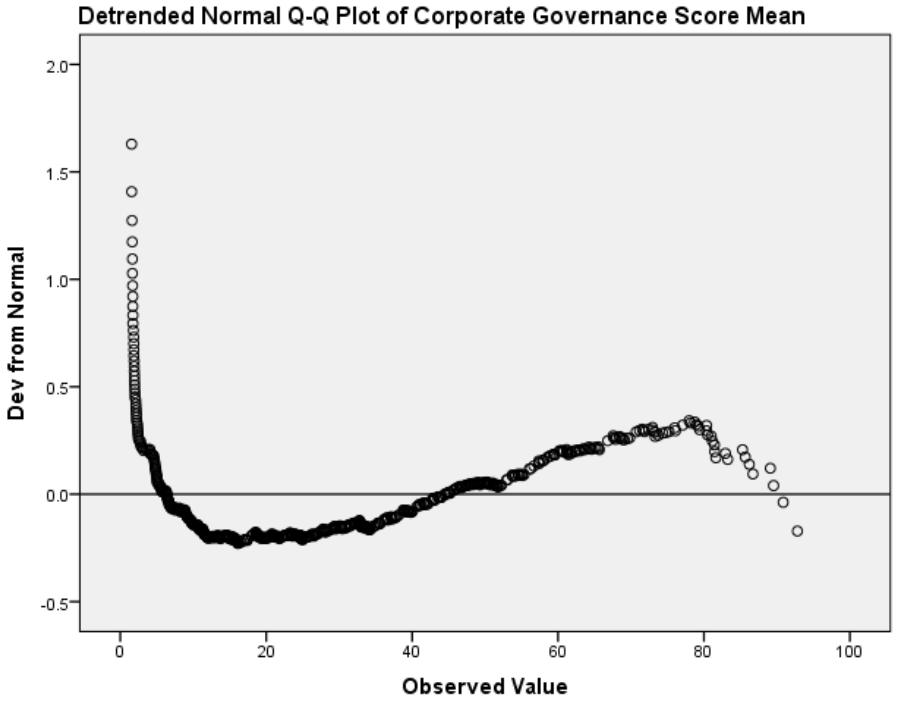
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Corporate Governance Score Mean	.094	620	.000	.939	620	.000
Board Structure Score Mean	.103	620	.000	.927	620	.000
Compensation Policy Score Mean	.094	620	.000	.938	620	.000
Board Functions Score Mean	.110	620	.000	.930	620	.000
Shareholder Rights Score Mean	.128	620	.000	.890	620	.000
Vision and Strategy Score Mean	.070	620	.000	.954	620	.000

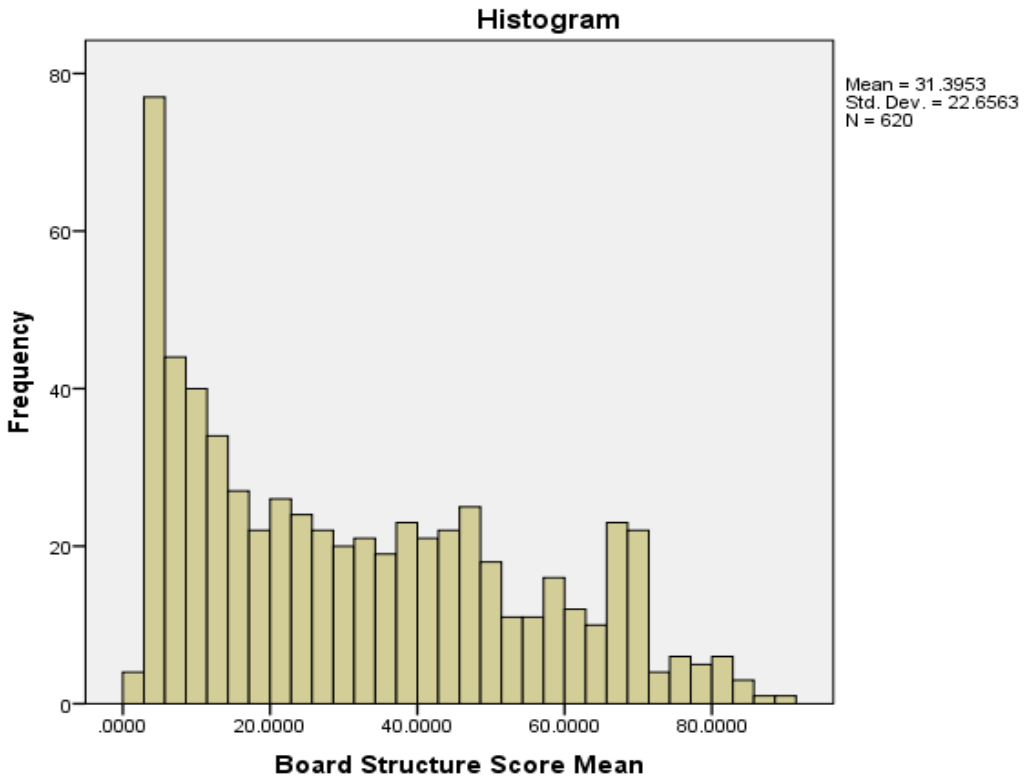
a. Lilliefors Significance Correction

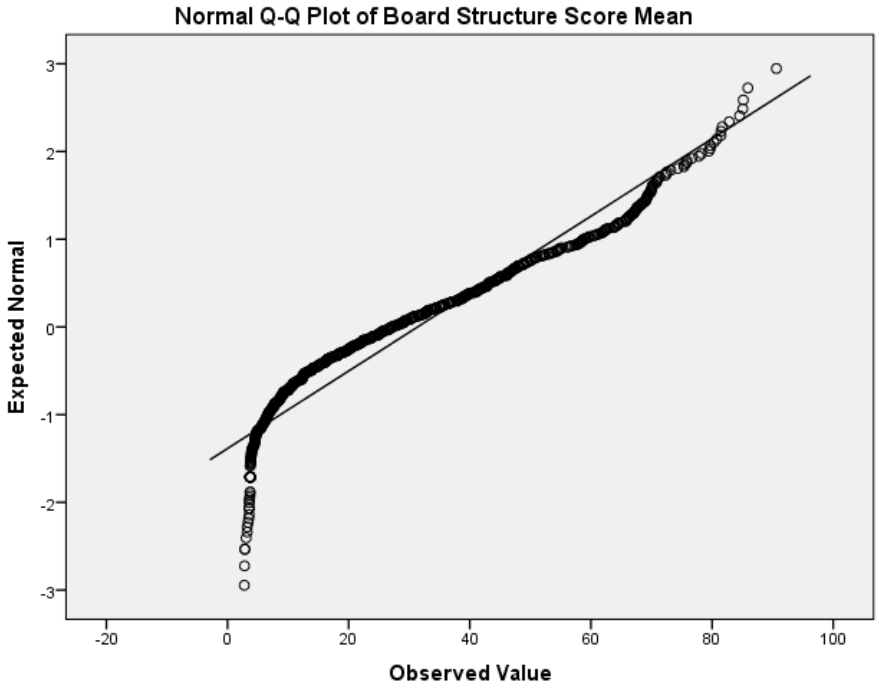
Corporate Governance Score Mean



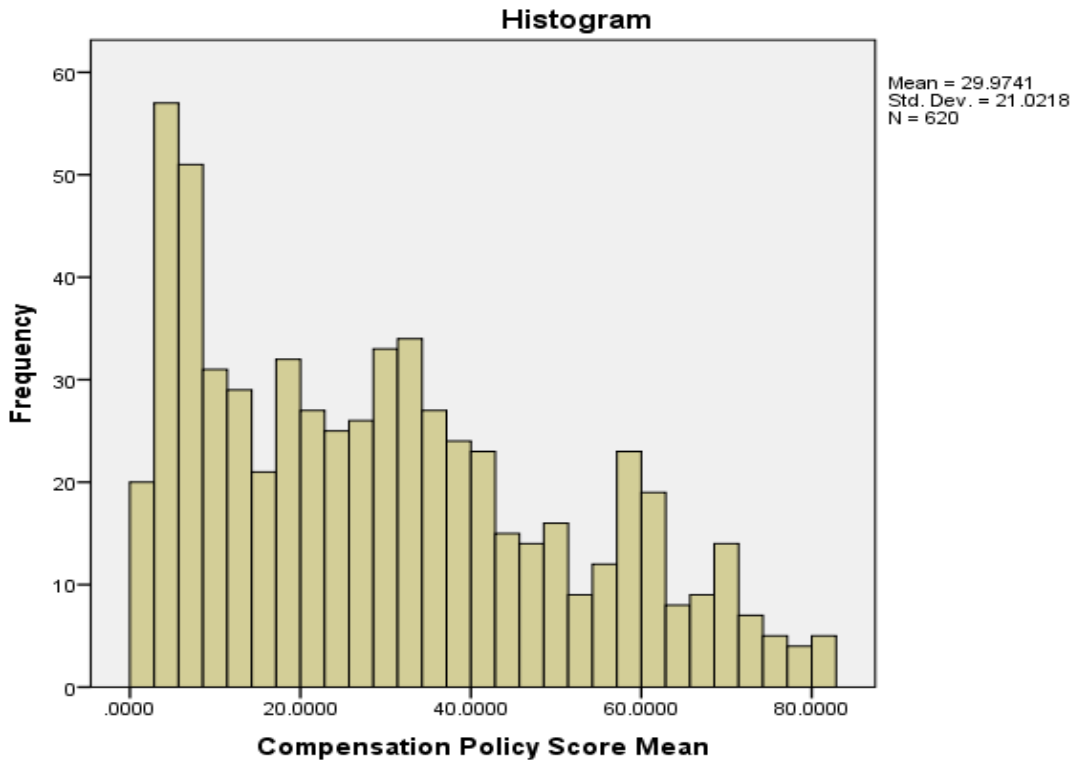


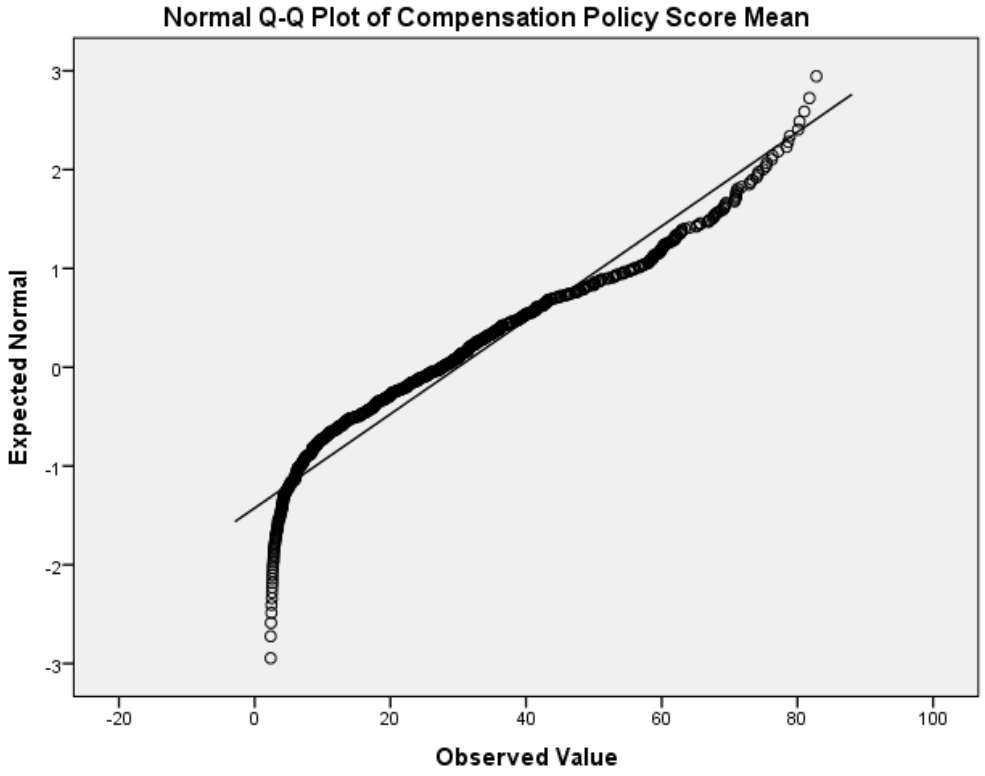
Board Structure Score Mean

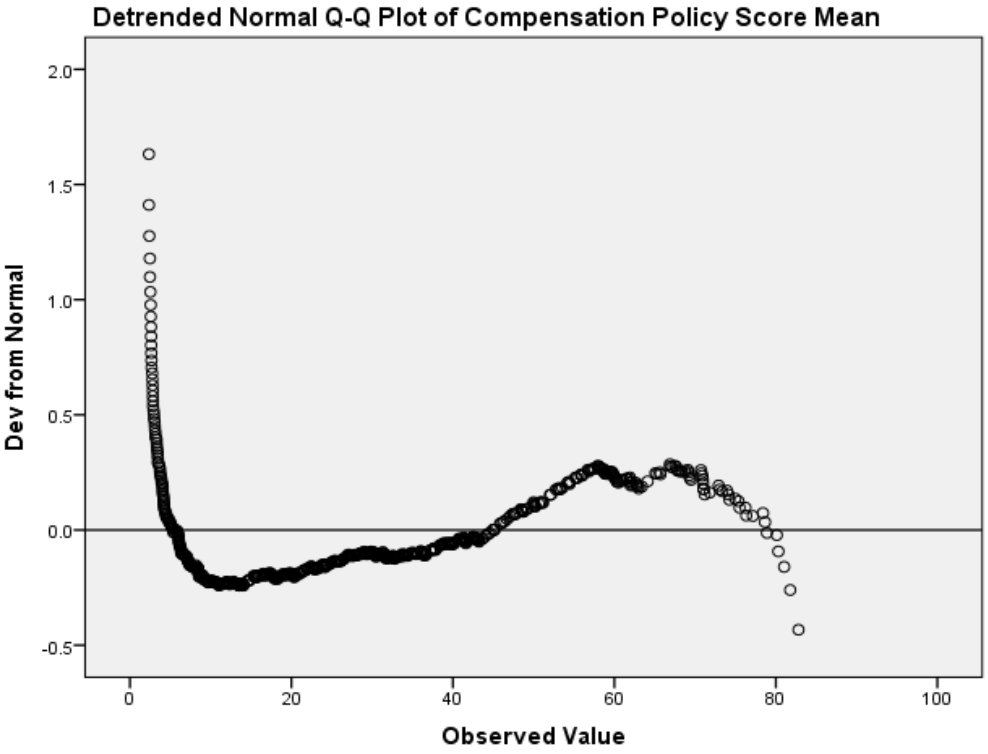




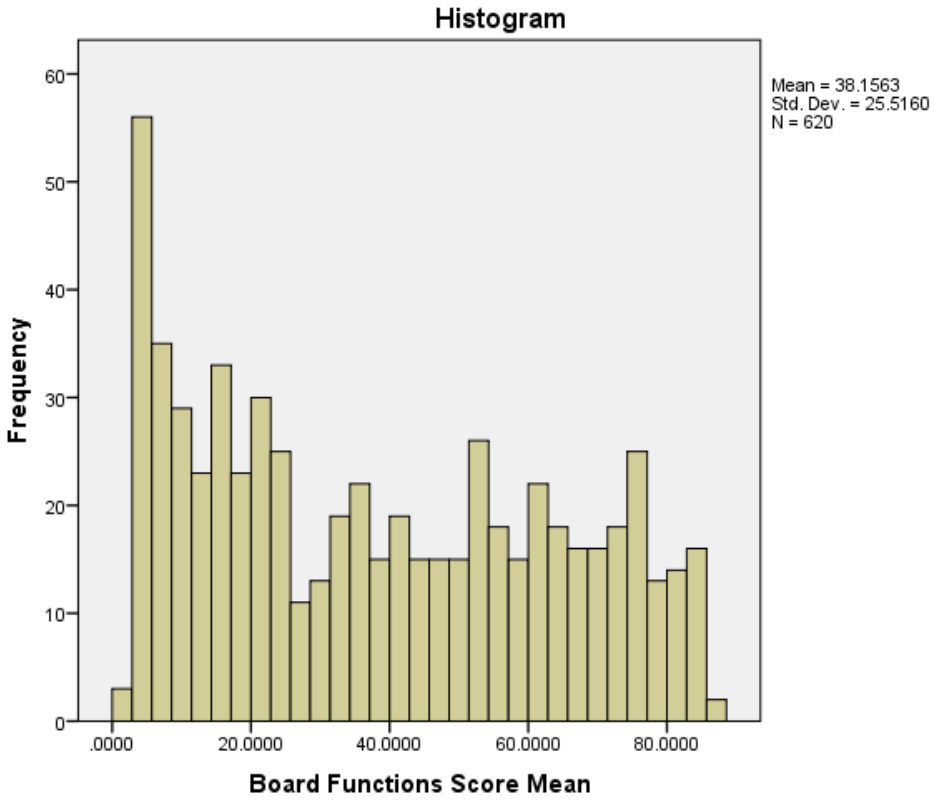
Compensation Policy Score Mean

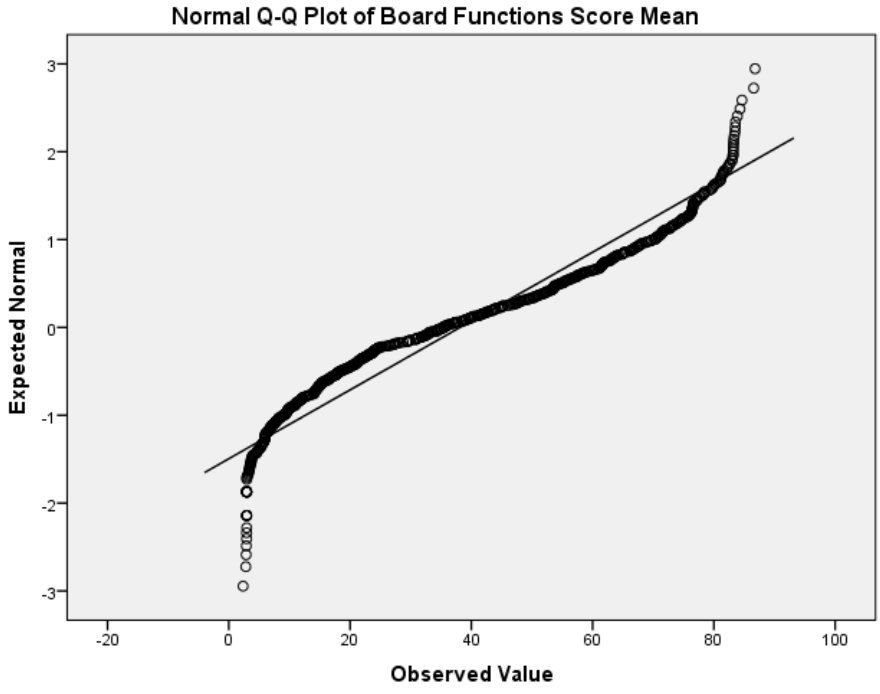


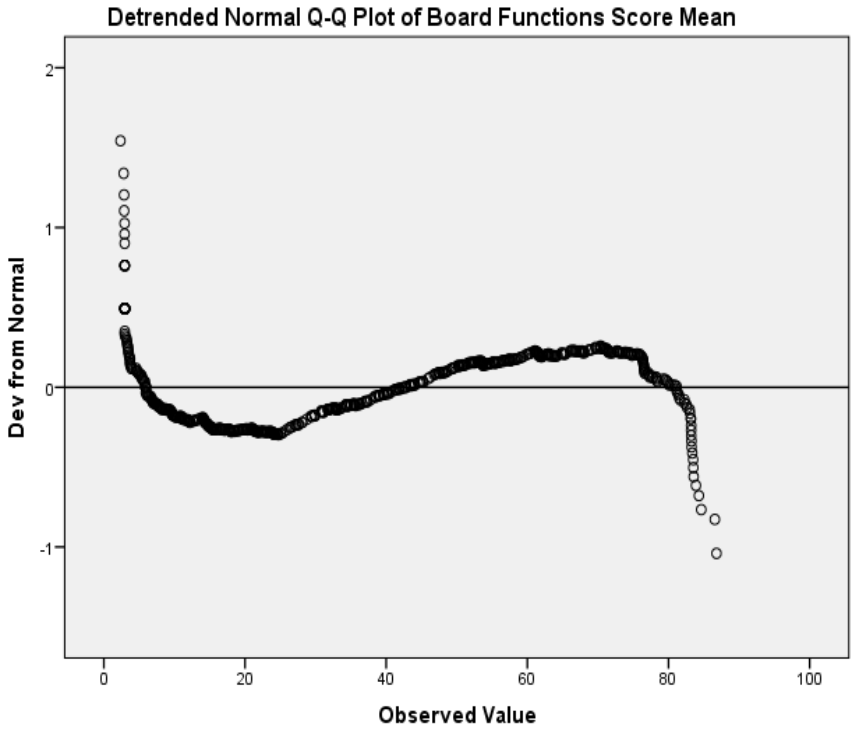

Normal Q-Q Plot of Compensation Policy Score Mean
Expected Normal
3
2
1
0
-1
-2
-3
-20
0
20
40
60
80
100
Observed Value


Detrended Normal Q-Q Plot of Compensation Policy Score Mean
Dev from Normal
2.0
1.5
1.0
0.5
0.0
-0.5
0
20
40
60
80
100
Observed Value

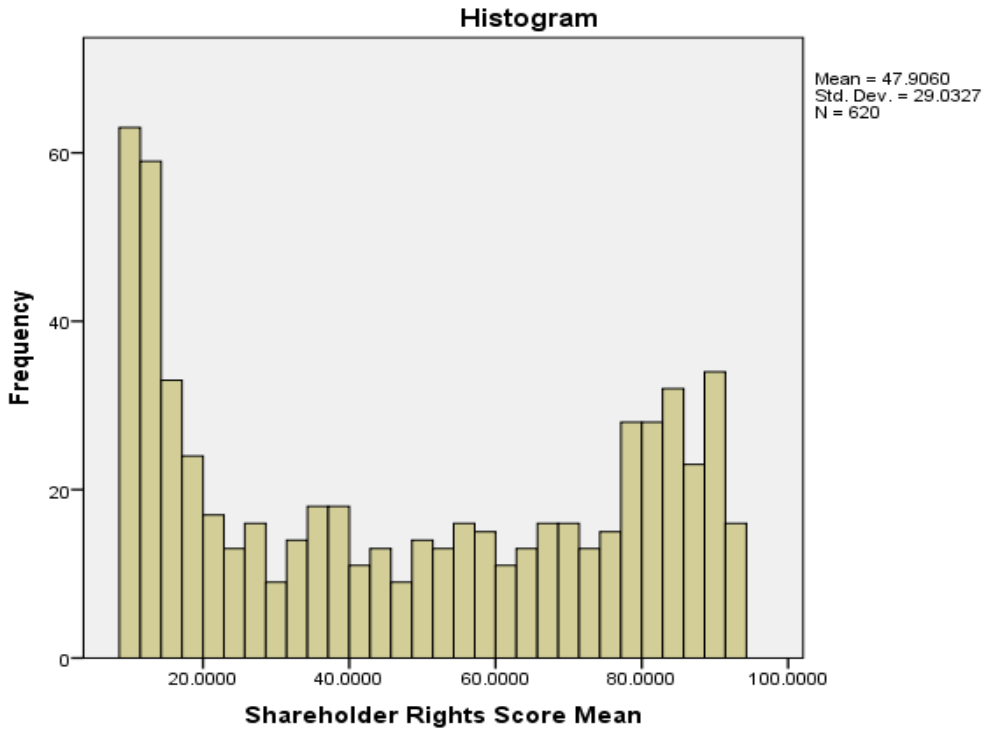
Board Functions Score Mean

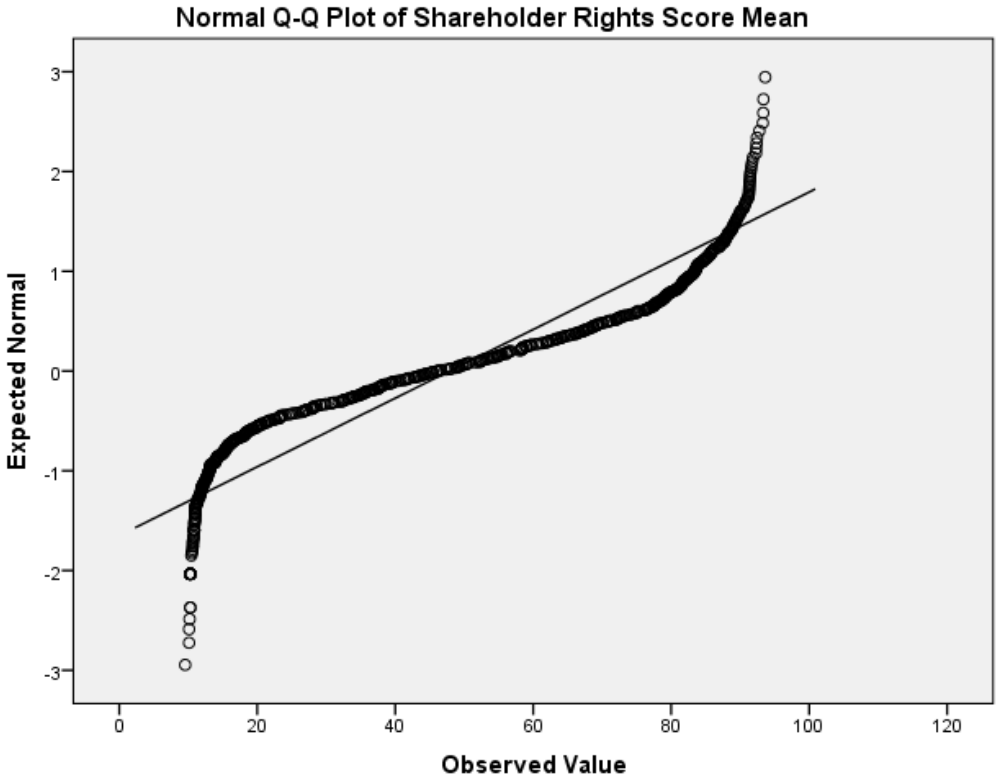


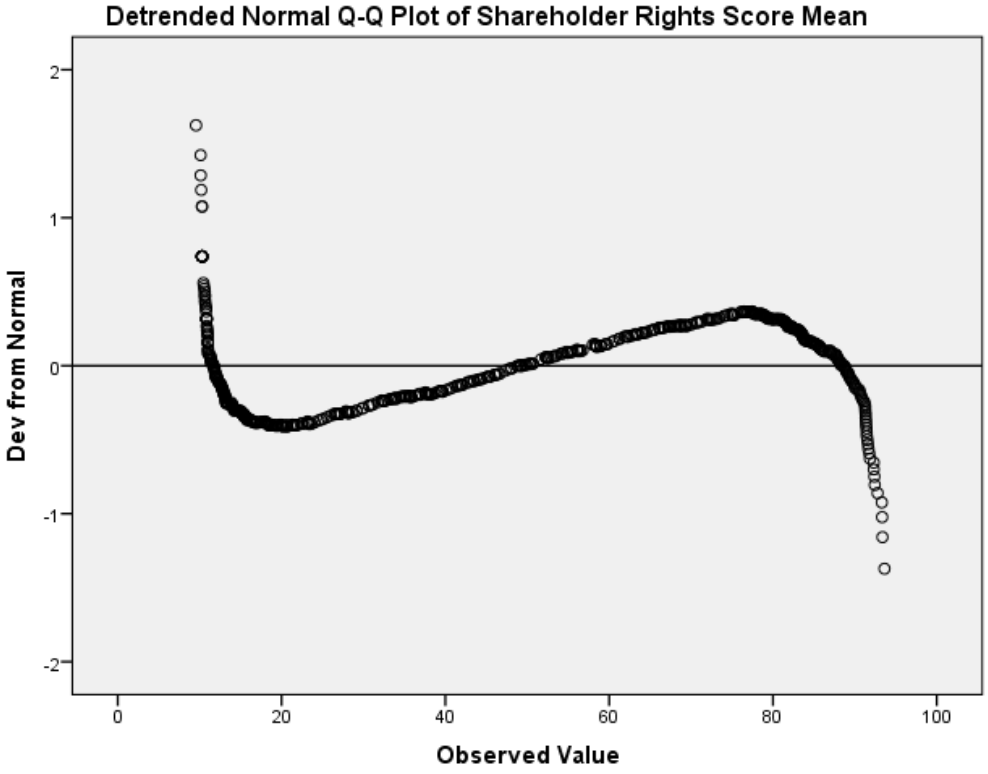




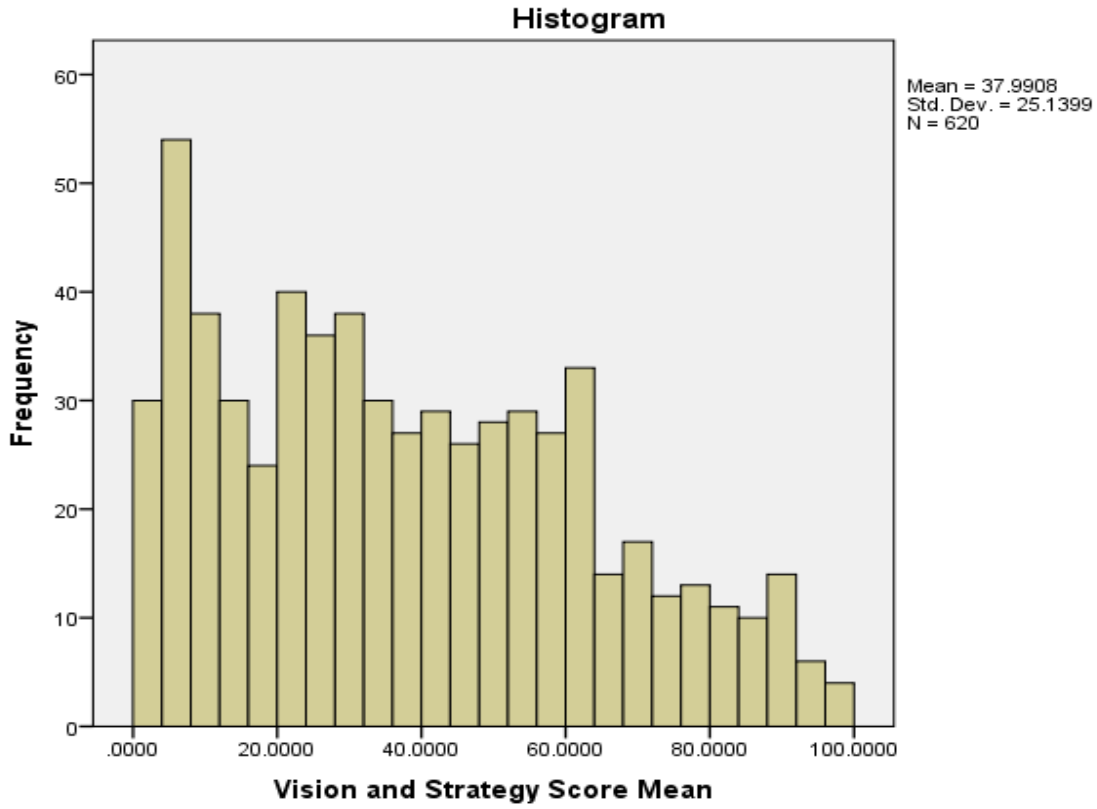
Shareholder Rights Score Mean

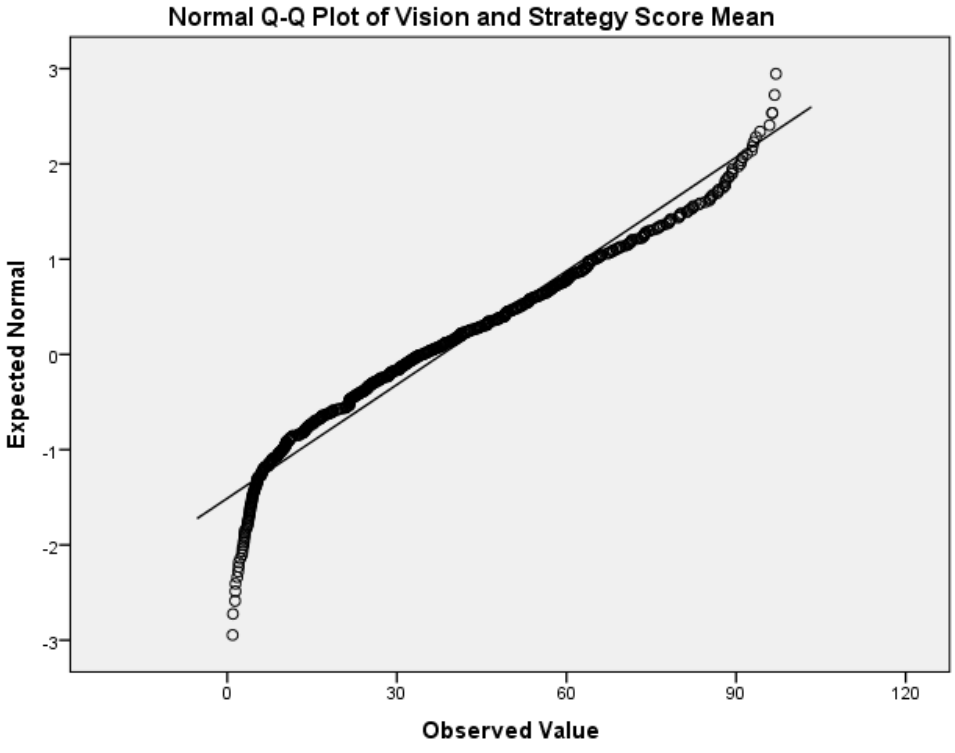


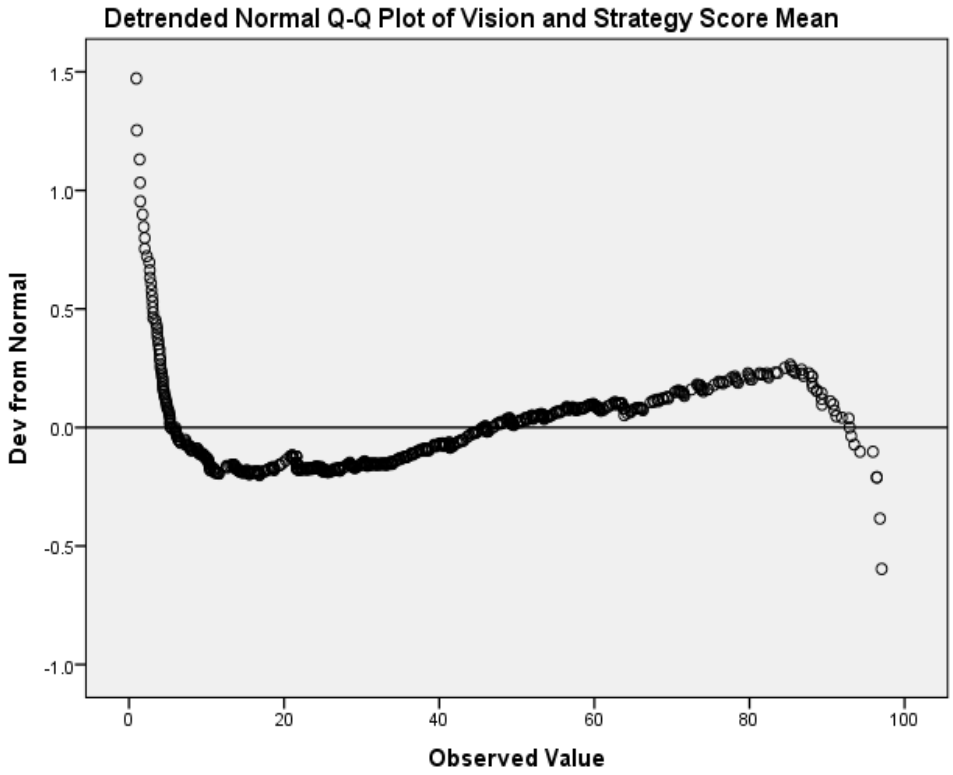

Normal Q-Q Plot of Shareholder Rights Score Mean
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3
0
20
40
60
80
100
120


Detrended Normal Q-Q Plot of Shareholder Rights Score Mean
Dev from Normal
Observed Value
2
1
0
-1
-2
0
20
40
60
80
100

Vision and Strategy Score Mean






Detrended Normal Q-Q Plot of Vision and Strategy Score Mean
Dev from Normal
1.5
1.0
0.5
0.0
-0.5
-1.0
0
20
40
60
80
100
Observed Value

Appendix 5: Correlations between corporate governance score and cash to total assets for each of the years from 2009 to 2012

Correlations

		Cash to Total Assets 2009	Corporate Governance Score 2009	Cash to Total Assets 2010	Corporate Governance Score 2010	Cash to Total Assets 2011	Corporate Governance Score 2011	Cash to Total Assets 2012	Corporate Governance Score 2012
Cash to Total Assets 2009	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	620							
Corporate Governance Score 2009	Pearson Correlation	-.070	1						
	Sig. (2-tailed)	.081							
	N	620	620						
Cash to Total Assets 2010	Pearson Correlation	.846**	-.072	1					
	Sig. (2-tailed)	.000	.074						
	N	620	620	620					
Corporate Governance Score 2010	Pearson Correlation	-.102*	.891**	-.117**	1				
	Sig. (2-tailed)	.011	.000	.003					
	N	620	620	620	620				
Cash to Total Assets 2011	Pearson Correlation	.763**	-.052	.852**	-.089*	1			
	Sig. (2-tailed)	.000	.193	.000	.027				
	N	620	620	620	620	620			
Corporate Governance Score 2011	Pearson Correlation	-.047	.845**	-.063	.885**	-.048	1		
	Sig. (2-tailed)	.242	.000	.116	.000	.234			
	N	620	620	620	620	620	620		
Cash to Total Assets 2012	Pearson Correlation	.682**	-.081*	.748**	-.102*	.882**	-.059	1	
	Sig. (2-tailed)	.000	.044	.000	.011	.000	.145		
	N	620	620	620	620	620	620	620	
Corporate Governance Score 2012	Pearson Correlation	-.021	.822**	-.027	.815**	-.016	.848**	-.032	1
	Sig. (2-tailed)	.597	.000	.506	.000	.685	.000	.426	
	N	620	620	620	620	620	620	620	620
Cash to Total Assets Mean	Pearson Correlation	.901**	-.075	.941**	-.112**	.946**	-.059	.892**	-.026
	Sig. (2-tailed)	.000	.062	.000	.005	.000	.143	.000	.515
	N	620	620	620	620	620	620	620	620
Corporate Governance Score Mean	Pearson Correlation	-.063	.941**	-.073	.951**	-.054	.950**	-.071	.928**
	Sig. (2-tailed)	.118	.000	.069	0.000	.182	0.000	.075	.000
	N	620	620	620	620	620	620	620	620

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

Appendix 6: Full SPSS results of multiple linear regression (research question two)

Descriptive Statistics

	Mean	Std. Deviation	N
Cash to Total Assets Mean	.157449	.1152041	620
Board Structure Score Mean	31.395257	22.6562628	620
Compensation Policy Score Mean	29.974074	21.0217600	620
Board Functions Score Mean	38.156250	25.5159899	620

Correlations

		Cash to Total Assets Mean	Board Structure Score Mean	Compensation Policy Score Mean	Board Functions Score Mean
Pearson Correlation	Cash to Total Assets Mean	1.000	-.022	.001	.039
	Board Structure Score Mean	-.022	1.000	.630	.585
	Compensation Policy Score Mean	.001	.630	1.000	.562
	Board Functions Score Mean	.039	.585	.562	1.000
Sig. (1-tailed)	Cash to Total Assets Mean	.	.293	.492	.164
	Board Structure Score Mean	.293	.	.000	.000
	Compensation Policy Score Mean	.492	.000	.	.000
	Board Functions Score Mean	.164	.000	.000	.
N	Cash to Total Assets Mean	620	620	620	620
	Board Structure Score Mean	620	620	620	620
	Compensation Policy Score Mean	620	620	620	620
	Board Functions Score Mean	620	620	620	620

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Board Functions Score Mean, Compensation Policy Score Mean, Board Structure Score Mean[b]	.	Enter

a. Dependent Variable: Cash to Total Assets Mean

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.068[a]	.005	.000	.1152178	1.474

a. Predictors: (Constant), Board Functions Score Mean, Compensation Policy Score Mean, Board Structure Score Mean

b. Dependent Variable: Cash to Total Assets Mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.038	3	.013	.951	.416[b]
	Residual	8.177	616	.013		
	Total	8.215	619			

a. Dependent Variable: Cash to Total Assets Mean

b. Predictors: (Constant), Board Functions Score Mean, Compensation Policy Score Mean, Board Structure Score Mean

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	.155	.009		17.015	.000	.137	.173					
Board Structure Score Mean	.000	.000	-.068	-1.219	.223	-.001	.000	-.022	-.049	-.049	.525	1.906

Compensation Policy Score Mean	-7.103E-6	.000	-.001	-.024	.981	-.001	.001	.001	-.001	-.001	.546	1.832
Board Functions Score Mean	.000	.000	.080	1.529	.127	.000	.001	.039	.061	.061	.596	1.679

a. Dependent Variable: Cash to Total Assets Mean

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Board Structure Score Mean	Compensation Policy Score Mean	Board Functions Score Mean
1	1	3.532	1.000	.02	.01	.01	.01
	2	.206	4.141	.90	.15	.09	.01
	3	.140	5.029	.06	.04	.31	.92
	4	.123	5.360	.02	.81	.58	.06

a. Dependent Variable: Cash to Total Assets Mean

Casewise Diagnostics[a]

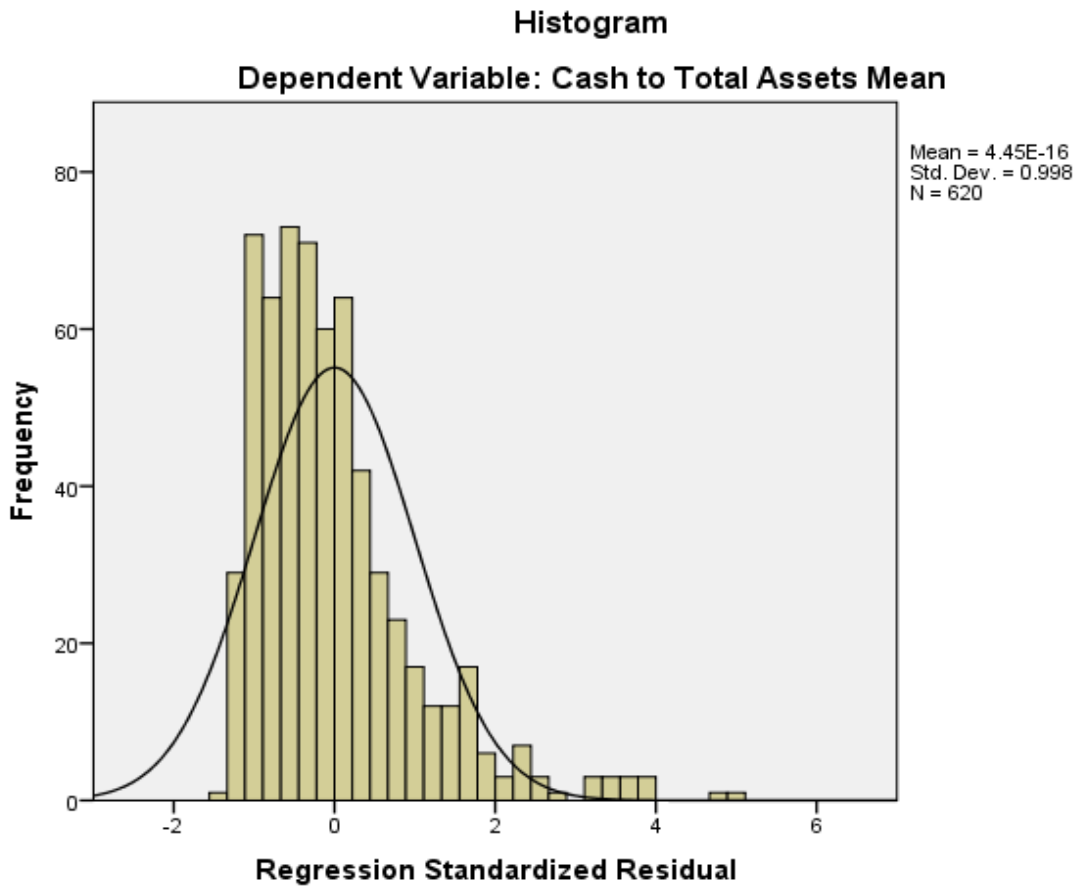
Case Number	Std. Residual	Cash to Total Assets Mean	Predicted Value	Residual
49	3.344	.5543	.169022	.3852669
114	5.023	.7348	.156135	.5787139
181	4.881	.7307	.168353	.5623780
222	3.858	.6071	.162582	.4444977
224	3.899	.6160	.166798	.4491890
230	3.652	.5793	.158598	.4207395
231	3.356	.5490	.162344	.3866218
241	3.231	.5383	.166040	.3722682
266	3.604	.5676	.152275	.4152984
298	3.365	.5432	.155570	.3876669
327	3.115	.5142	.155301	.3589000
346	3.808	.5824	.143642	.4387257
561	3.636	.5741	.155098	.4189766
597	3.257	.5286	.153302	.3752892

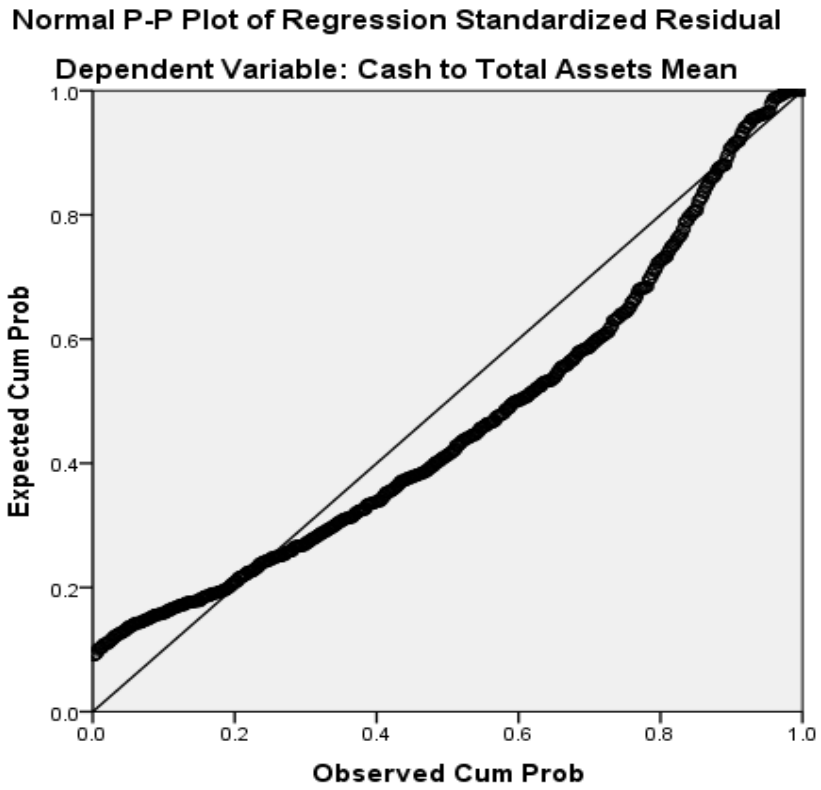
a. Dependent Variable: Cash to Total Assets Mean

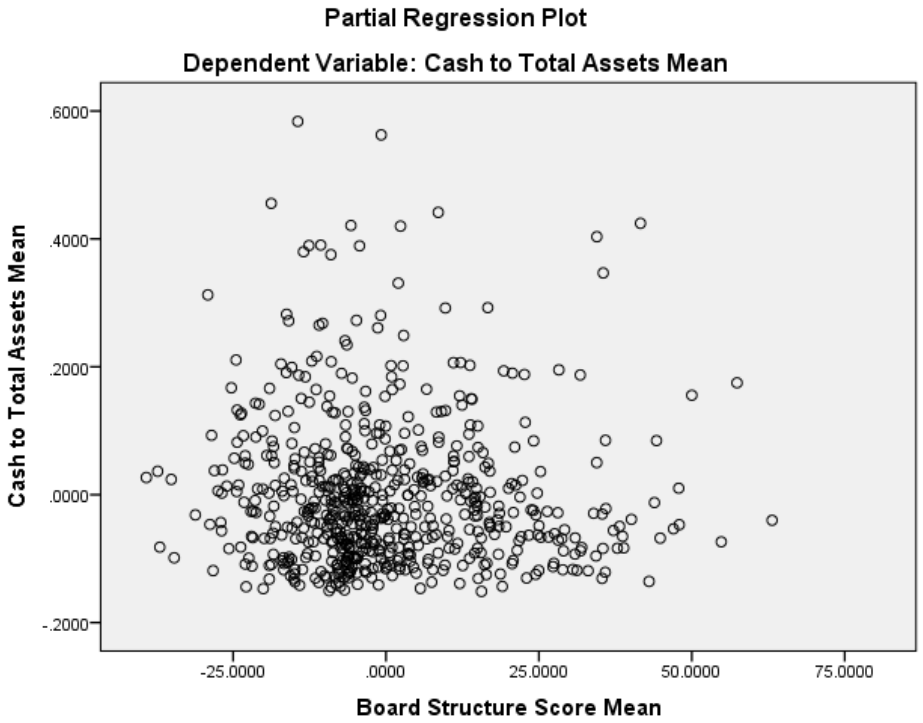
Residuals Statistics[a]

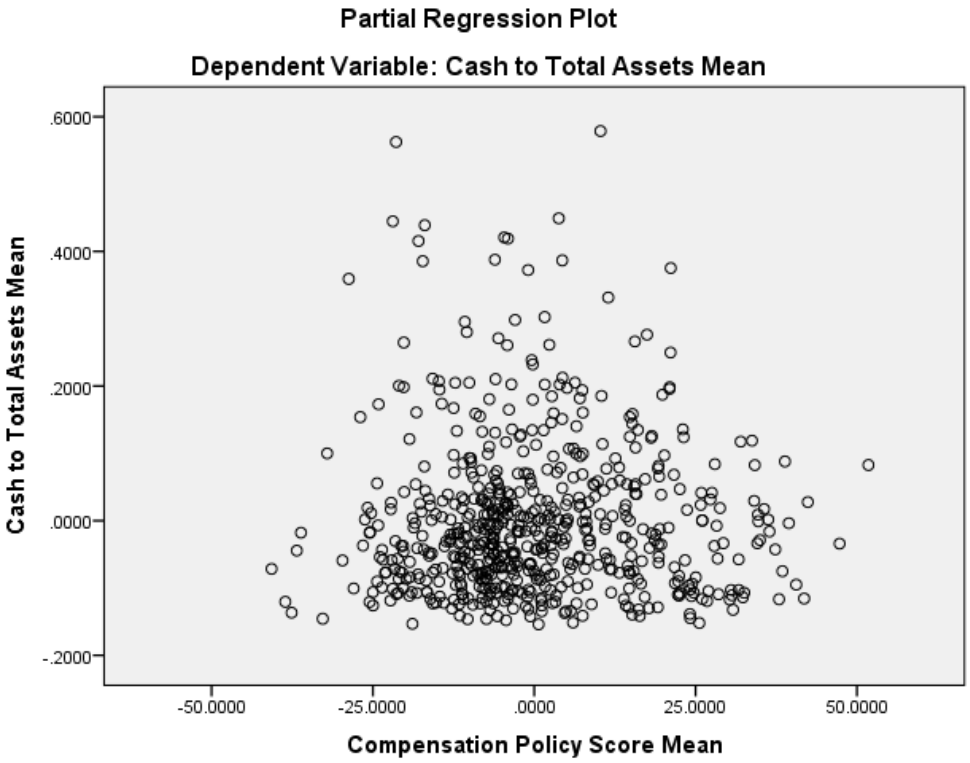
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.131609	.181648	.157449	0078217	620
Std. Predicted Value	-3.304	3.094	.000	1.000	620
Standard Error of Predicted Value	.005	.019	.009	.002	620
Adjusted Predicted Value	.126939	.181415	.157467	.0078825	620
Residual	-.1539099	.5787139	.0000000	.1149383	620
Std. Residual	-1.336	5.023	.000	.998	620
Stud. Residual	-1.340	5.036	.000	1.001	620
Deleted Residual	-.1549521	.5817982	-.0000178	.1156734	620
Stud. Deleted Residual	-1.341	5.139	.001	1.005	620
Mahal. Distance	.104	15.465	2.995	2.166	620
Cook's Distance	.000	.051	.002	.004	620
Centered Leverage Value	.000	.025	.005	.003	620

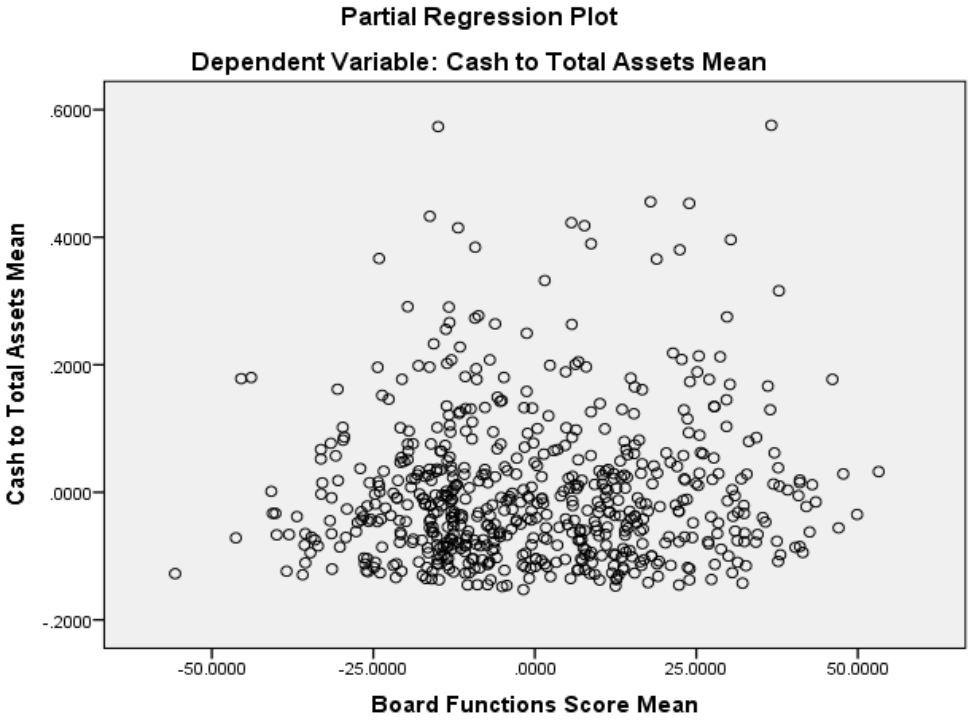
a. Dependent Variable: Cash to Total Assets Mean




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Cash to Total Assets Mean
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Partial Regression Plot
Dependent Variable: Cash to Total Assets Mean
Cash to Total Assets Mean
Board Structure Score Mean
.6000
.4000
.2000
.0000
-.2000
-25.0000
.0000
25.0000
50.0000
75.0000


Partial Regression Plot
Dependent Variable: Cash to Total Assets Mean
Cash to Total Assets Mean
.6000
.4000
.2000
.0000
-.2000
-50.0000
-25.0000
.0000
25.0000
50.0000
Compensation Policy Score Mean


Partial Regression Plot
Dependent Variable: Cash to Total Assets Mean
Cash to Total Assets Mean
.6000
.4000
.2000
.0000
-.2000
-50.0000
-25.0000
.0000
25.0000
50.0000
Board Functions Score Mean

Appendix 7: Correlations between shareholder rights score and cash to total assets for each of the years from 2009 to 2012

		Cash to Total Assets 2009	Shareholder Rights Score 2009	Cash to Total Assets 2010	Shareholder Rights Score 2010	Cash to Total Assets 2011	Shareholder Rights Score 2011	Cash to Total Assets 2012	Shareholder Rights Score 2012
Cash to Total Assets 2009	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	620							
Shareholder Rights Score 2009	Pearson Correlation	-.213**	1						
	Sig. (2-tailed)	.000							
	N	620	620						
Cash to Total Assets 2010	Pearson Correlation	.846**	-.223**	1					
	Sig. (2-tailed)	.000	.000						
	N	620	620	620					
Shareholder Rights Score 2010	Pearson Correlation	-.212**	.916**	-.237**	1				
	Sig. (2-tailed)	.000	.000	.000					
	N	620	620	620	620				
Cash to Total Assets 2011	Pearson Correlation	.763**	-.193**	.852**	-.205**	1			
	Sig. (2-tailed)	.000	.000	.000	.000				
	N	620	620	620	620	620			
Shareholder Rights Score 2011	Pearson Correlation	-.194**	.900**	-.211**	.903**	-.188**	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.000			
	N	620	620	620	620	620	620		
Cash to Total Assets 2012	Pearson Correlation	.682**	-.196**	.748**	-.207**	.882**	-.190**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		
	N	620	620	620	620	620	620	620	
Shareholder Rights Score 2012	Pearson Correlation	-.200**	.867**	-.213**	.869**	-.185**	.904**	-.181**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	
	N	620	620	620	620	620	620	620	620
Cash to Total Assets Mean	Pearson Correlation	.901**	-.225**	.941**	-.235**	.946**	-.213**	.892**	-.213**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
	N	620	620	620	620	620	620	620	620
Shareholder Rights Score Mean	Pearson Correlation	-.213**	.959**	-.230**	.960**	-.201**	.967**	-.202**	.950**
	Sig. (2-tailed)	.000	0.000	.000	0.000	.000	0.000	.000	0.000
	N	620	620	620	620	620	620	620	620

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix 8: Correlations between vision and strategy score and cash to total assets for each of the years from 2009 to 2012

		Cash to Total Assets 2009	Vision and Strategy Score 2009	Cash to Total Assets 2010	Vision and Strategy Score 2010	Cash to Total Assets 2011	Vision and Strategy Score 2011	Cash to Total Assets 2012	Vision and Strategy Score 2012
Cash to Total Assets 2009	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	620							
Vision and Strategy Score 2009	Pearson Correlation	.026	1						
	Sig. (2-tailed)	.526							
	N	620	620						
Cash to Total Assets 2010	Pearson Correlation	.846**	.052	1					
	Sig. (2-tailed)	.000	.192						
	N	620	620	620					
Vision and Strategy Score 2010	Pearson Correlation	-.004	.821**	.019	1				
	Sig. (2-tailed)	.914	.000	.642					
	N	620	620	620	620				
Cash to Total Assets 2011	Pearson Correlation	.763**	.046	.852**	.017	1			
	Sig. (2-tailed)	.000	.251	.000	.667				
	N	620	620	620	620	620			
Vision and Strategy Score 2011	Pearson Correlation	.019	.743**	.040	.813**	.028	1		
	Sig. (2-tailed)	.645	.000	.316	.000	.488			
	N	620	620	620	620	620	620		
Cash to Total Assets 2012	Pearson Correlation	.682**	.048	.748**	.017	.882**	.033	1	
	Sig. (2-tailed)	.000	.231	.000	.676	.000	.407		
	N	620	620	620	620	620	620	620	
Vision and Strategy Score 2012	Pearson Correlation	.064	.674**	.070	.607**	.070	.700**	.071	1
	Sig. (2-tailed)	.112	.000	.083	.000	.081	.000	.077	
	N	620	620	620	620	620	620	620	620
Cash to Total Assets Mean	Pearson Correlation	.901**	.047	.941**	.013	.946**	.033	.892**	.075
	Sig. (2-tailed)	.000	.247	.000	.750	.000	.417	.000	.064
	N	620	620	620	620	620	620	620	620
Vision and Strategy Score Mean	Pearson Correlation	.030	.902**	.051	.905**	.046	.915**	.048	.843**
	Sig. (2-tailed)	.456	.000	.202	.000	.254	.000	.232	.000
	N	620	620	620	620	620	620	620	620

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix 9: Comparison of cash and cash equivalents as a percentage of total assets for Europe, Japan, the United States and the rest of the world (ROW)