

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

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**EFFECT OF CORPORATE GOVERNANCE ON COST OF CAPITAL OF LISTED
MANUFACTURING FIRMS IN GHANA**

BY

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KNUST



DECLARATION

I hereby declare that this submission is my own work towards the award of a Master of Business Administration, Finance Option and that to the best of my knowledge, it contains no material previously published by another person or any material which has been accepted for the forward of any other degree of the University, except where due acknowledgement has been made in the text

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DEDICATION

I dedicate this piece of academic work to my wife (Juliet Asamoah Nyamekye) for being me source of support and inspiration throughout my studies. Secondly, to my beloved family the GYAU'S for their support and love and also my children (Zion Aseda Barima-Gyau and Damien Nkunim Barima-Gyau). To you all I say very big thank you for your support and prayers, without which it would have been impossible to complete this work. I am very proud of you all.

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ABSTRACT

In the field of Finance, the study of corporate governance and cost of capital has piqued the interest of scholars and practitioners. For a decade, the stability of the financial sector in Ghana has been threatened due to weak corporate governance, non-performing loans, political interference. To save the sector from suffering losses which can trigger into economic crisis, strong corporate governance is mainly required. The main aim of this study was to analyse the effect of corporate governance on manufacturing firms' cost of capital. The study utilised quoted manufacturing firms on the Ghana Stock Exchange. All the 8 listed manufacturing firms are captured and observed from between the period of 2010 to 2021 making a 96-firm year observation. The study utilised the quantitative approach and explanatory research design. Data

for the study were obtained from the annual financial statements of the selected firms under study. In order to achieve the objective of the study, the Hausman test was employed to determine the appropriate model for this study and found that the Fixed-Effect model was appropriate for this study. Augmented Dickey-Fuller test and Breusch-Godfrey test were performed to test for data stationarity and autocorrelation respectively. On the other hand, the researcher employed Breuch-Pegan test to test for the presence of heteroscedasticity. Based on the analysis, this study found that the board size has a significant negative effect on cost of capital of manufacturing firms. The study results also revealed a significant negative effect of board independence on manufacturing firms' cost of capital. In addition, the study found a positive but insignificant effect of CEO duality on manufacturing firm's cost of capital. Based on this, the study recommends to management of manufacturing firms to consider the cheapest and cost-effective source of capital like their retained earnings whenever they are looking for capital to expand their operations. External source of securing or raising capital for expansion should be the last source management should consider. This study concludes that corporate governance has a significant impact on manufacturing firms' cost of capital.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Companies having a well-established and sound corporate governance system in place can take advantage of globalization, attract and invest in stocks with low cost of capital around the world (Faysal et al., 2021). Salehi and Salami (2020) revealed that firms with sound corporate governance system in place are able to reduce cost of capital, attract and boast the confidence of investors and as well enhance the efficiency of the various sectors in an economy. For some decades, stakeholders have mounted pressure on policy makers not only review major aspects of corporate governance, but also on companies to practice good corporate governance following the collapse of famous companies like the WorldCom and Enron (Young & Thyil, 2014). Empirical literature has also confirmed that effective and sound corporate governance principles reduce cost of capital and as well retain the confidence level of investors (Arslan and Abidin, 2019).

Following the collapse of giant international firms such as Enron and WorldCom, the concept of corporate governance began to penetrate in the field of finance with various scholars conducting numerous studies to assess their impact on firm performance (Bhagat and Bolton, 2019; Opoku-Appiah et al., 2017); cost of capital (Dogan and Acar, 2020; Huang et al., 2016; Li, 2010; Koerniadi and Tourani, 2014) and capital structure (Javaid et al., 2021; Bokpin and Arko, 2019), among others. The Cadbury report released in 1992 by Sir Adrian Cadbury was done to solve some of the issues relating to the governance of companies to protect depositors fund the collapse of firms (Maama et al., 2019). Empirical literature revealed that the collapse of many firms was as a result of poor corporate governance mechanisms in place. Following

this assertion, various stakeholders are calling on appropriate authorities to find a lasting remedy to this situation.

Decisions that impact positively or negatively on the performance of firms are made by the board. Therefore, the board structure is considered a vital component of corporate governance mechanisms that steer the affairs of the organization. The composition and functioning of the board are vital to investors, policy makers and shareholders as they work towards the value maximization objective of the firm (Abu et al., 2016). Contrary, ineffective board structure can result in fraudulent activities, law suits, investment in risky ventures, poor market performance, as well as reduction in the company's value (Ogbechie and Koufopoulos, 2010). In Ghana, Tetteh (2019) argued that board structure remains paramount in corporate governance practices as a result of the recent financial sector crises that have plunged many investors and shareholders to lose their hard-earned invested funds.

Cost of capital is one essential variable in the conduct of businesses that ensures their survival and continuity. For companies to attract both internal and external investors, Ashbaugh et al. (2014) revealed that the cost of capital component is key and serves as intersection between the company and investors. As revealed by Faysal et al. (2020), the performance of a company is mostly impacted if the cost of borrowing funds is high. Researchers such as Zhu (2014) and Chen et al. (2009) revealed that with respect to countries with poor legal regulations, the impact of corporate governance on cost of capital is more pronounced. This study therefore assesses the impact of corporate governance on cost of capital in a country with strong legal regulation.

In this era of business competition, most manufacturing firms have instituted good corporate governance mechanisms to enhance their success, profitability and survival in the long-run (Opoku-Appiah et al., 2017). Firms require strong corporate board to make financing, dividend

and investments decisions. However, according to Vatavu (2015), manufacturing firms do not have sufficient internal funds to expand their operations or undertake profitable investments. In line with this assertion, such manufacturing firms show preference for external debts whenever they encounter financial difficulties. Whenever they fail to settle such debt due to high cost of capital, they are mostly plunge into high level of financial risks (Dogan and Acar, 2020).

Due to the increasing importance of cost of capital to firms in both advanced and emerging economies, various studies have been carried out to ascertain their relationships with corporate governance (Gupta et al., 2018; Huang et al., 2016; Singal, 2014). However, studies on this phenomenon have yielded conflicting results as some scholars have reported positive relationship (Li, 2010; Zampeta, 2015; Titisari et al., 2019; Sinhal, 2014). Other scholars have also found negative relationship (Li, 2010; Zampeta, 2015). On this basis, the corporate governance-cost of capital nexus is inconclusive and calls for further studies to assess their relationship.

Sequel to the argument above, there exists no studies on the Ghanaian economy that have analysed the nexus between corporate governance and cost of capital. Studies in emerging market economies that seek to establish the relationship between corporate governance and cost of capital have mostly been conducted in India (Singhal, 2014; Gupta et al., 2018). However, due to different geographical location and microeconomic indicators, findings from their study cannot be generalized to the Ghanaian economy. Therefore, Ghana as emerging African economy has been selected for this study. As corporate governance mechanisms ensure the survival of companies, it is imperative that studies are carried out to assess their impact on cost of capital. The purpose of this study is therefore to examine the effect of corporate governance on the cost of capital from the perspective of quoted manufacturing firms in Ghana.

1.2 Problem Statement

In corporate finance, the concept of corporate governance has piqued the interest of scholars and also receive considerable attention in literature with various studies linking it to the firm's cost of capital (Ashbaugh et al., 2004; Gupta et al., 2018; Chen et al., 2019; Arslan and Abidin, 2019; Alhares, 2020; Anwar, 2022). However, empirical studies on corporate governance and cost of capital have revealed two outcomes. While some studies on corporate governance have revealed positive impact on cost of capital (Zhu, 2014; Mazzotta and Veltri, 2014), other studies have also found a significant negative relationship (Li, 2010; Zampeta, 2015; Titisari et al., 2019; Sinhal, 2014). Based on the above studies, there is an illustration that findings on the relationship between them is inconclusive.

Amid these findings, many studies on corporate governance and cost of capital have been carried out mostly in developed economies (Ashbaugh et al., 2004; Huang et al., 2016; Koerniadi and Tourani, 2014). With this, challenges always arise when attempt is made to generalize the findings from developed market to that of developing economy like Ghana. This is because, differences exist with respect to measures and mechanisms different countries put in place to govern their corporate governance. No studies have been carried out in Ghana to assess the relationship between corporate governance and cost of capital. As a result of the collapse of many banks as well as the banking sector clean-up exercise by the Bank of Ghana in 2017, issues relating to corporate governance and corporate failure have given the needed attention.

The concept of corporate governance began to receive the needed attention from scholars, practitioners, government, policy makers and other major stakeholders following the collapse of giant firms such as Enron and WorldCom (Cadbury, 2003). Similarly, in the Ghanaian context, the concept of corporate governance was given a critical look following the banking

sector clean-up exercise that led to the collapse of many financial institutions as well as the revocation of many license (Musah et al., 2019). This predicament usually has an impact on cost of capital (Zhu, 2014) as well as the financial performance of the organisation (OpokuAppiah et al., 2017). In other to make the various sector more robust, various stakeholder have called for a permanent solution to these challenges.

In addition, most studies on the nexus between corporate governance and cost of capital have been carried out using the banking sector (Chen et al., 2009; Haque et al., 2014; Huang et al., 2016), with paucity of studies carried out using manufacturing sector (Dogan and Aacar, 2020). However, looking at the importance of the manufacturing sector to the Ghanaian economy in terms of its GDP contribution and employment creation, it becomes imperative to conduct a study of this nature using quoted manufacturing firms on the GSE. Centrally, the purpose of this study is to analyse the nexus between corporate governance and cost of capital using the manufacturing sector within the context of Ghana.

1.3 Objectives of the Study

The central focus of the study is to examine the effect of corporate governance on the cost of capital of listed manufacturing firms in Ghana. Specifically, the study seeks to the following:

1. To examine the relationship between board size and cost of capital of firms.
2. To investigate the relationship between board independence and cost of capital of firms.
3. To analyse the relationship between CEO duality and cost of capital of firms.

1.4 Research Questions

To achieve the specific objectives stated above, the following questions need to be addressed:

1. What is the relationship between board size and cost of capital of firms?

2. What is the relationship between board independence and cost of capital of firms?
3. Is there any relationship between CEO duality and cost of capital of firms?

1.5 Significance of the Study

The conduct of this study carries some key relevance that needs to be highlighted. To begin with, a study of this nature is among the paucity of studies in Ghana that have been carried out to ascertain the nexus between the variables. A study of this nature would provide useful insight to the various stakeholders such as management, shareholders, employees, creditors, government, investors, and academicians on how corporate governance mechanisms impact on the cost of capital of quoted manufacturing firms.

Due to recent financial crisis and many corporate failures that has hit giant companies like Enron and WorldCom, the role of corporate governance in the operations of both public and private quoted companies cannot be overlooked and has piqued the interest of scholars, management, government, shareholders and other major stakeholders. This study would provide insight to the various stakeholders of the quoted manufacturing firms on how corporate governance impact on their cost of capital.

This study contributes to both theory and practice by closely analysing how corporate governance impact on the cost of capital within the manufacturing sector of Ghana. For carefully literature reviewing, this current study is among the paucity of studies conducted to investigate the phenomenon under study in the Ghanaian context. Thus, investigating how corporate governance impact on cost of capital may be beneficial for both firms and policy makers.

To investors, a study of this nature would give them much insight to ascertain how the board composition of quoted manufacturing firms impact on their cost of capital. This would provide them with information on how corporate governance practices enhance the cost of capital, and hence take decision whether to invest or not to invest in such companies. Lastly, the result of

the study could be of importance to policy-makers and as well serve add to the frontier of knowledge and serve as a source of reference for future studies.

1.6 Scope of the Study

This study focused on 8 listed manufacturing firms quoted on the Ghana Stock Exchange. Geographically, the scope is limited to Ghana. This study covers corporate governance variables and cost of capital of quoted manufacturing firms. Specifically, the scope of this study covers board size, board independence, CEO duality, and cost of capital of quoted manufacturing firms. Data of the firms under study spans from 2010 to 2021.

1.7 Brief Methodology

The main objective of the study was to analyse the impact of corporate governance on cost of capital of listed manufacturing firms in Ghana. The study is quantitative research that employs explanatory research design to achieve the objectives of the study. The population of the study revolves around quoted firms. The study revolves round 8 listed manufacturing firms in Ghana. This study followed the methodology in literature utilised in the study of corporate governance and cost of capital by Alhares (2020), and thus, employed the Generalized Method of Moments (GMM) estimation technique. The GMM estimation method takes care of the endogeneity issues of corporate governance variables among the listed manufacturing firms under study. In this study, data from the annual financial reports of listed manufacturing firms spanning from 2010 to 2021 was used. With a total of a 96-firm year observation, the dependent variable is cost of capital and the independent variables are corporate governance, which is proxied by board size, board independence and CEO duality. The study controlled for the effect of firm age, firm size, leverage, institutional investment, inflation rate, interest rate, exchange rate and GDP growth in the country. In this study, Hausman test was employed to determine the best estimation model.

1.8 Limitations of the Study

The study aimed to establish the effect of corporate governance on the cost of capital of manufacturing firms in Ghana. To begin with, the study is limited by the inability of the researcher to cover all listed manufacturing firms in Ghana. The researcher therefore admits it could impact on the findings and its generalizability. Findings of this study being carried out in the context of Ghana cannot be generalized beyond the boundaries of this nature since differences exist with respect to practices of corporate governance and how cost of capital are ascertained in different geographical location.

1.9 Organisation of the Study

This research is organized into five (5) chapters. Chapter one detail the background of the study, problem statement, general and specific objectives, significance of the study, scope of the study, brief methodology, brief literature review and lastly, organization of the study. Chapter two presents the conceptual, theoretical, conceptual framework and empirical issues underpinning the study. Chapter three discusses the various research methodological tools employed. The fourth chapter covers the presentation of data analysis and discussions of findings. Finally, chapter five summarizes the main findings, conclusions and makes recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section of the study presents the literature review on the impact of corporate governance on cost of capital. This chapter presents the arguments made by scholars on the concepts and theories guiding the phenomenon under study. The chapter further presents the hypotheses that were formulated for the study.

2.2 Conceptual Review

This section of the study review literature on the key concepts that emanates from the study. the section further presents the essence of these concepts to the study. The key concepts reviewed under this section include corporate governance, board size, board independence, CEO duality and cost of capital. The next bulleting reviews these concepts into details.

2.2.1 The Concept of Corporate Governance

In the words of Gorowa and Igyo (2017), corporate governance is the process by which an organisation employs resources to attain its stated objectives. On the other hand, Akingunola et al. (2013) opined that corporate governance is the way a firm applies its policies and procedures, systems, customs, laws and regulations to achieve its long run objectives. Truong et al. (2015) contended that corporate governance is a tool that is essential for the maintenance and assurance of public confidence particularly in the banking sector. Egungwu and Egungwu's (2018) view on corporate governance seems to be similar to the previous researchers. The researchers noted that good corporate governance is arranged to advance a strong and reliable banking system than will safeguard the money of depositors in addition to playing a vital role in development of an economy. To augment the above discussion on corporate governance, other studies have found the need of corporate governance system as an essential tool for

organisational success (Egungwu and Egungwu, 2018; Ene and Bello 2016; Afolabi and Dare, 2015).

From the perspective of nor et al. (2017), attempt to ameliorate good corporate governance mechanisms were taken into consideration with the notion that companies benefit from strong corporate governance practices. Corporate governance is seen as a platform that sees to it that checks and balances are properly conducted in the interest of all appropriate stakeholders, particularly of the shareholders. These monitoring devices, for instance, were enforced through factors such as block ownership (Asmuni et al., 2015), the size of the board (Egungwu and Egungwu, 2018), the independence of directors (Appiah et al., 2017), separation of the two topmost position, that is, CEO and chairmanship (Husnin et al., 2013), board meetings (Abdulazeez et al., 2019), audit committee (Chen and Zhou, 2007), committee on remuneration and disclosure (Jaafar et al., 2014) and external audits (Krishnan, 2003).

Under the expectations of the stakeholders, corporate governance is a system as well as mechanisms employed to regulate, direct and control the operations of a company (Solikhah and Maulina, 2021). Corporate governance, as defined by the OECD is a system of rules, processes and procedures, through which the affairs of a company are controlled and directed. Corporate governance practices and mechanisms are used to generate investor confidence and to secure the goodwill of the firm (Wahyudin and Solikhah, 2017). According to Suhardjanto and Permatasari (2010), two vital concepts are noted in the practice of corporate governance by firms. The first got to do with the right of the shareholders to obtain information about the company in an accurate, timely and transparent manner. The second concept is the obligation of the company to disclose information with respect to the performance, ownership and the involved stakeholders in a timely and accurate manner.

The importance of corporate governance practices has been highlighted in literature as a result of the collapse of giant companies such as Enron and the WorldCom due to weak corporate governance practices (Qu and Leung, 2016). Good corporate governance practices are needed by firms ensure the survival and continuity of the firms. It plays a vital role in financial institutions as it safeguards depositors' money and also ensure a strong reliable banking system. Studies such as Appiah et al. (2017), Abdulazeez et al. (2019), and Solikhah and Maulina (2021), highlighted the need of corporate governance as a vital tool to ensure organizational success as well as to protect and turn over the asset of the company. Corporate governance emanates from a firm's desire to ensure that the monies invested are used wisely and efficiently for the benefit of the principal/investors.

2.2.2 Board Size

The size of the board is stipulated in the corporate governance code of a company. Mostly, the minimum as well as the maximum number of directors that sits on the board is silent and differs from country to country. However, Gafoor et al. (2018) noted that some countries corporate governance code prefers a minimum of minimum and a maximum of 2 and 20 directors respectively. Adams and Mechrane (2012) argued that in the banking sector, large board size is needed to enhance the performance of the firm. In line with this statement, De Andres and Vallelado (2018) revealed that a large board size is healthy for the company as they play monitoring, advisory, and supervision role on the management of the firm.

Gafoor et al. (2018) revealed that adequate board size improves banks efficiency and provide quality decision-making which impact on the performance of the firm. Adequate board size is needed because of the monitoring and advisory role they play in ensuring the success of the firm. The function of the board, their optimal size as well as their composition are included in

the company's charter. Egungwu and Egungwu (2018) revealed that the board size of the company should be controlled as there is the tendency for optimal board size to enhance the performance and operations of the firm at all level.

2.2.3 Board Independence

Board independence are the outside directors that serves on the board of a firm. Gafoor et al. (2018) revealed that outside directors are good monitors of the company and contribute positively to the affairs of the company in terms of decision-making. Since they don't have a direct relationship to the operations and management of the organization, they role is essential to the success and survival of the firm. They do monitor the actions of management by holding their integrity and reputation high (Fama and Jensen, 1983). Outside directors are partly blamed when the firm is not performing well.

The composition and choice of the independent directors relate positively to the smooth functioning of the firm (Jackling and Johl, 2009). From the perspective of Liang et al. (2013), the quality of the independent direct depends on factors such as their level of education, experience, and field of study, among others. According to Francis et al. (2016), the number of outside directors sitting on the corporate board is usually high as compared to the inside directors of the same company. Many studies have revealed a strong correlation between high independent directors and the performance of the firm (Liang et al., 2013; Gafoor et al., 2018).

2.2.4 CEO Duality

Following the report that was released by Sir Cadbury in 1992, it recommended the separation of the CEO position from the chairmanship role to ensure sound corporate governance and smooth governance of a business (Cadbury Report, 1992). Nor et al. (2017) contend that organisations should adopt various mechanisms on monitoring to complement ineffective

monitoring mechanism. For instance, Azim (2012) observed that CEO duality as mechanism can be complemented by adding up on the number of independent non-executive directors on the board structure to ensure balance of power in decision making and the day-to-day management of the company. Additionally, the segregation of the chair and the CEO is advocated by agency theory. The main goal of the chairperson is the remuneration of the CEO as well as the management of the board of directors. A single individual thus assimilates two roles, which could give rise to worse agency problems by weakening the efficacy of CEO monitoring practices (Dechow et al., 2018). Many recommendations such as the recent UK Corporate Governance Code in 2018 have also advocated for the separation of the topmost position in a firm, that is, the CEO and chairman. When one person occupies these two positions, agency problem may arise.

2.2.5 Cost of Capital

Cost of capital also referred to as cost of equity is the return rate on investments obtained by firms to maintain their stock market value. The term cost of capital can also be explained to mean the returns required by the founders of a company to invest their capital in the business (Alhares, 2020). The basis of its calculation is based on long-term funding source available to the company. These sources of funding can include retained earnings, shares as well as longterm debt. The cost of capital of a company can be measured using the weighted average cost of capital or the dividend discounted formula (Utami and Pernamasari, 2020). Companies need to consider the cost of capital whenever they are looking for capital to expand their business as high cost of capital can be risky to the firm. In literature, there is evidence that sound corporate governance mechanisms lower the cost of capital of a company as well as its level of risks (Mazzotta and Veltri, 2014).

2.3 Theoretical Review

This study is premised on agency theory and stakeholder theory. Under this section, we discuss the agency and stakeholder theory as used in corporate governance studies and demonstrate how these theories support the findings of the study. As this study intends to assess the effect of corporate governance on cost of capital it draws on the agency theory and the stakeholder theory of corporate governance to elaborate on how the board who are seen as the principals are managing the asset of the firm to fulfil the shareholder maximization objective of the firm. The next bulleting reviews these two theories into details.

2.3.1 Agency Theory

The agency theory was propounded by Jensen and Meckling (1976). This theory admits that there is a challenge owners and managers of the firm. In line with this assertion, control mechanisms are needed by the owners of the company to supervise the duties of the managers. With this theory, shareholders are viewed as the agents, while managers are seen as the principals. As put forward by Saunda et al. (2005), managers hide under asymmetry of information to execute projects may not be in the interest of the owners (shareholders). Conflicts usually arise in attempt to align the interest of the principals with the agents. Following Muhammad et al. (2011), two (2) elements are bore out from the agency theory. First, organizations that are for profit considers two actors, that is, the shareholders and management. The second is the notion that the principals want to satisfy their parochial and self-enhancement goals at the expense of the owners of the firm.

Generally speaking, corporate governance deemed the actions and inactions of the managers as harmful which do not always enhance the shareholder maximization objective of the firm. Mostly, the actions of the managers usually conflict with that of the shareholders. According to

La Porta et al. (2012), these inactions by managers can be in the form of overpaying executives, asset stripping, funds expropriation, as well as dilution of the firm's value. As posit by Abdulazzez et al. (2019), these inactions by managers go contrary to the shareholder maximization objective of the company. In order to bring about goal congruence between the principals and the agents, Gafoor et al. (2018) are of the solid conviction that appropriate corporate governance mechanisms should be put in place.

In accordance with the shareholder maximization objective of the firm, the agency theory stipulates that the managers should pursue goals that are of interest to the owners (shareholders (Mansur and Ahmad, 2013). This theory underpins the conduct of this study in the sense that the board who are acting on behalf of the shareholders should focus on the interest of the latter and hence, better the financial position of the firm. If the capital component of firms is not properly managed by the principals, it will go a long way to deteriorate and brings extra cost to the company which can impact negatively on the going concern concept of the firm.

Nevertheless, the agency theory propounds the view that efficacious management is founded on the aspect of unity in the management of the firm. Therefore, the chair and the CEO need to hold a similar position. This is due to the fact that, when decisions lie in the hands of a single individual, a superior understanding of the operations of the firm itself would result, as would superior choices, which would result in the reduction of agency problems. This would, in turn, have a positive impact on the cost of capital and firm performance (Dalton & Kesner 1987; Donaldson & Davis 1997). Conversely, when taking into account the mechanisms of structural ownership, incentives for agents are needed to align interests and principles (that is, to persuade management to prioritizes the optimization of shareholder value).

2.3.2 Stewardship Theory

In Accounting and Finance, the stewardship theory has caught the attention of many scholars, particularly in the area of corporate governance. The stewardship theory is usually associated with Theodore Roosevelt. In line with this theory, the principals are seen as good stewards (Akingunola et al., 2013) that steer the affairs of the firm to enhance the profit maximization objective of the company. This theory rests on the notion that the principals (managers) are driven by achievements. In line with this assertion, the key stakeholders of the organization usually rely on the duties performed by the non-executive directors of the company. The principals are given control to build the enterprise, and thus, put in structures which are built on trust (Uwuigbe, 2011).

This theory underpins the conduct of this study in the sense that the board are seen as stewards who are entrusted with the company's assets to steer the affairs and maximize the value of the company (Nyarko et al., 2016). Following the stewardship theory, there exists a link between the interest of management and that of the shareholders. In line with this statement, the managers' decision should reflect the value maximization of the firm. Ideally, it is through the equity of the firm that the value of the company is enhanced. Donaldson and Davis (1991) revealed that corporate governance mechanisms should be put in place to facilitate the goal of enhancing the value of the firm. Strict adherence to these mechanisms would trigger managers to put the interest of the organization first at the expense of their self-serving objectives.

Sequel to the above position, managers must manage the firm in such a way that all the performance indicators such as ROA, ROE, EPS, and NPLs, among others, would point to the right direction (Khaid, 2012). For instance, it is the responsibility of management to invest the capital of the company and as well choose the cheapest source of equity of the firm to better the

value of the company and enhance the shareholder goal. In contrast, if the capital of the company is not well invested by the managers who are entrusted with power, the going concern concept and the shareholder maximization objective of firm will be in jeopardy. Through the application of corporate governance mechanisms in place, Abdulazeez et al. (2019) revealed that the firm can properly be managed to enhance their value, and hence, perform better.

2.4 Empirical Review

Many studies have been carried out in both developed and developing countries to assess the nexus between corporate governance and cost of capital. These studies have all contributed to the stock of knowledge by revealing diverse findings. Among such studies, Teti et al. (2016) created corporate governance index taking into consideration the characteristics of each country to study corporate governance and cost of equity from the perspective of companies in Latin America. The study employed the fixed effect model to analyse the findings. Results from their regression analysis revealed that corporate governance quality and cost of capital are negatively related. The study further revealed that the only factor impacting on cost of equity got to do with disclosure. For the first time, a study of this nature contributes to literature by assessing the phenomenon over Latin American market.

Zouari-Hadiji and Chouaibi (2021) sampled 80 firms and employed the multivariate linear regression to study corporate governance and cost of equity from ethical companies. The study employed the multiple linear regression to assess the relationship between the variables. The results of the study revealed that firms with high corporate governance score are linked with reduce cost of capital. This relationship is explained by higher valuation and lower risks to firms. When setting better corporate governance mechanisms, this study makes recommendations for global regulators and policymakers.

Alhares (2020) utilised panel data involving 240 firms in Europe and America with data covering the period of 2010 to 2017 to study corporate governance and cost of equity among OECD countries. The study employed the OLS multiple regression to assess corporate governance-cost of capital nexus. The results of their study were robust, revealing a negative link between corporate governance-cost of capital nexus. The results of the study also revealed that the connection between block ownership and cost of capital is positive and significant. The study therefore made recommendations that will guide corporate governance reform by policymakers in OECD countries.

Srivastava et al. (2019) sampled 46 companies quoted on S & P BSE 500 with data spanning from 2001 to 2016 to analyse corporate governance and cost of equity from the perspective of emerging economies. The study utilised a total of 46 corporate governance variables. The results of their regression analysis confirmed that the link between corporate governance and cost of capital is significant and positive. The study also revealed that to a large extent, cost of equity is predicted well by board composition. The study also shown that the link between audit committee and cost of equity is positive but insignificant. By implication, firms with good corporate governance mechanisms enjoy low cost of capital and easy access to equity finance.

Javaid et al. (2021) sampled 84 non-financial firms quoted on the stock exchange of Pakistan with data covering the period of 2004 to 2016 to study the role of cost of capital on corporate governance and capital structure nexus. The researchers' checked individual heterogeneity of the data using the Hausman test. The results of their regression model revealed that firm financing decision is influenced by factors such as CEO duality, ownership structure, board size and composition as well as managerial ownership. The study confirmed the mediating role played by cost of capital on corporate governance-capital structure nexus. It was also revealed

that the firm's capital structure decision is influenced by determinants such as firm size, asset, risk as well as profitability.

Tran (2014) utilised panel data involving 56 firms quoted on the stock exchange of Germany with data covering the period of 2005 to 2012 to study corporate governance characteristics and cost of equity in Germany. The study results confirmed that firms with lower cost of capital are those with high level of financial transparency as well as high compensation for management. The results of the study also revealed that cost of equity and block ownership is negatively related. The study also revealed that high cost of debts is attributed to large German firms. The study also revealed that uniform set of corporate governance is unlikely to equally satisfy suppliers of debts as well as equity capital

Gupta et al. (2018) utilised a sample of 7380 firms drawn from 22 developed countries with data covering a 5-year period from 2012 to 2016 to assess corporate governance, financial development and cost of equity. In common law countries with level of financial development, the results of their study revealed that corporate governance mechanisms impact on the cost of equity capital. Their study contributes to literature by been the first of it kind to emphasize the effects of legal origin and financial development in enhancing cost of capital among firms in developed countries.

Chow et al. (2018) sampled 907 quoted non-financial firms from 7 countries in Asia with data spanning from 2004-2014 to assess corporate governance, capital structure and macroeconomic uncertainty. The results of their study revealed that macroeconomic uncertainties and capital structure of quoted non-financial firms has negative and significant relationship. To curb the usage of leverage during high volatility, the results of the study revealed that corporate governance act as an effective mechanism. The study also brought to

light that effective corporate governance mechanisms that impact on capital structure include board independence, ownership structure, as well as the separation of CEO and chairmanship role.

Utami and Pernamasari (2020) sampled 92 firms and employed the multivariate linear regression to study earnings management, corporate governance and cost of equity from the perspective of manufacturing firms quoted on the stock exchange of Indonesia. The secondary data retrieved from the stock exchange of Indonesia covers a 4-year period from 2011 to 2013. The study results confirmed that independent audit committee as well as committee meetings has no significant impact on cost of equity. The study also found that earnings management and cost of capital has no significant impact. The results of the study also revealed that a significant relationship exist between abnormal expense and cost of equity.

Mazzotta and Veltri (2014) utilised 36 companies quoted on the Italian Stock Exchange with data spanning from 2002 to 2010 to study corporate governance and cost of equity. The study employed the multiple linear regression to assess the relationship between the variables. The researchers' checked individual heterogeneity of the data using the Hausman test. The results of their regression model revealed that the link between corporate governance and cost of equity is enhanced by financial market features. The study after controlling the differences that exist in the study of Fama and French (1999), the study revealed a significant association between corporate governance and cost of equity.

Salehi et al. (2020) employed 125 firms listed on Tehran Stock Exchange with data covering the period of 2012 to 2018 to study corporate governance and cost of equity. The study was carried out using 27 specific corporate governance attributes. The study involving panel data utilised the multiple regression technique to assess the nexus between corporate governance

and cost of capital. After the regression results, the study found that the rate of capital structure is impacted negatively by corporate governance. The study also found that the quality of financial reporting can be enhanced by using good corporate governance mechanisms and increased transparency.

Lima and Sanvicente (2013) also sampled 67 firms in Brazil that is quoted on Sao Paulo Stock Exchange with data spanning from 1998 to 2008 to investigate the cost of equity and quality of corporate governance in Brazil. The study employed the multiple linear regression to assess the relationship between the variables. In addition, CAPM was employed to estimate the cost of capital of the firms under study. The researchers' checked individual heterogeneity of the data using the Hausman test. The study findings revealed that effective corporate governance and cost of capital are negatively related. The study results implied that companies stand the chance to benefit from close inspection of the reduction in their cost of equity.

Koerniadi and Tourani (2014) followed the methodology used in the study by Fama and French (1999) to study financing patterns, corporate governance and performance of companies in New Zealand. The study sampled 36 companies listed on the stock exchange of New Zealand with data spanning from 2004 to 2008. The study revealed that firms in New Zealand with weak corporate governance mechanisms have high cost of debt as compared to firms with strong corporate governance practices. The study also found that in relation to financing policy, firms with different level of corporate governance mechanisms employ different policies.

Suchard et al. (2012) sampled 54 large Australian firms with data spanning from 1994 to 2003 to study corporate governance and cost of capital from the perspective of non-financial firms in Australia. The study performed the Hausman test to determine the appropriate model for the analysis. The results of the multiple regression of the study revealed that the perceived risk

component of a firm is reduced by greater inside ownership, independent executives on the board as well as institutional block holders. The study also revealed that corporate governance plays a major role in shareholder wealth maximization through the reduction of the cost of external financing.

Alhares (2020) utilised panel data involving 240 firms in Europe and America with data covering the period of 2010 to 2017 to study corporate governance and cost of equity among OECD countries. The study employed the OLS multiple regression to assess corporate governance-cost of capital nexus. The results of their study were robust, revealing a negative link between corporate governance-cost of capital nexus. The results of the study also revealed that the connection between block ownership and cost of capital is positive and significant. The study therefore made recommendations that will guide corporate governance reform by policymakers in OECD countries.

Zeitun et al. (2017) also employed 67 firms in Vietnam with data spanning from 2004 to 2012 to study corporate governance and cost of equity. The study involves panel data employing the fixed effect model. The study controlled for macro-economic variables such as inflation, exchange rate and GDP. The results of the study revealed that firms with good corporate governance mechanisms in Vietnam always experience low cost of capital. In addition, the results of their study revealed that companies with sound corporate governance policies are able to gain access to capital and always experience low risks in their business operations.

In addition, Li et al. (2010) sampled 87 non-financial firms and employed the multivariate linear regression to study corporate governance and cost of equity in China. The study employed the OLS multiple regression to assess corporate governance-cost of capital nexus. The results of their study were robust, confirming an inverse relationship between corporate governance

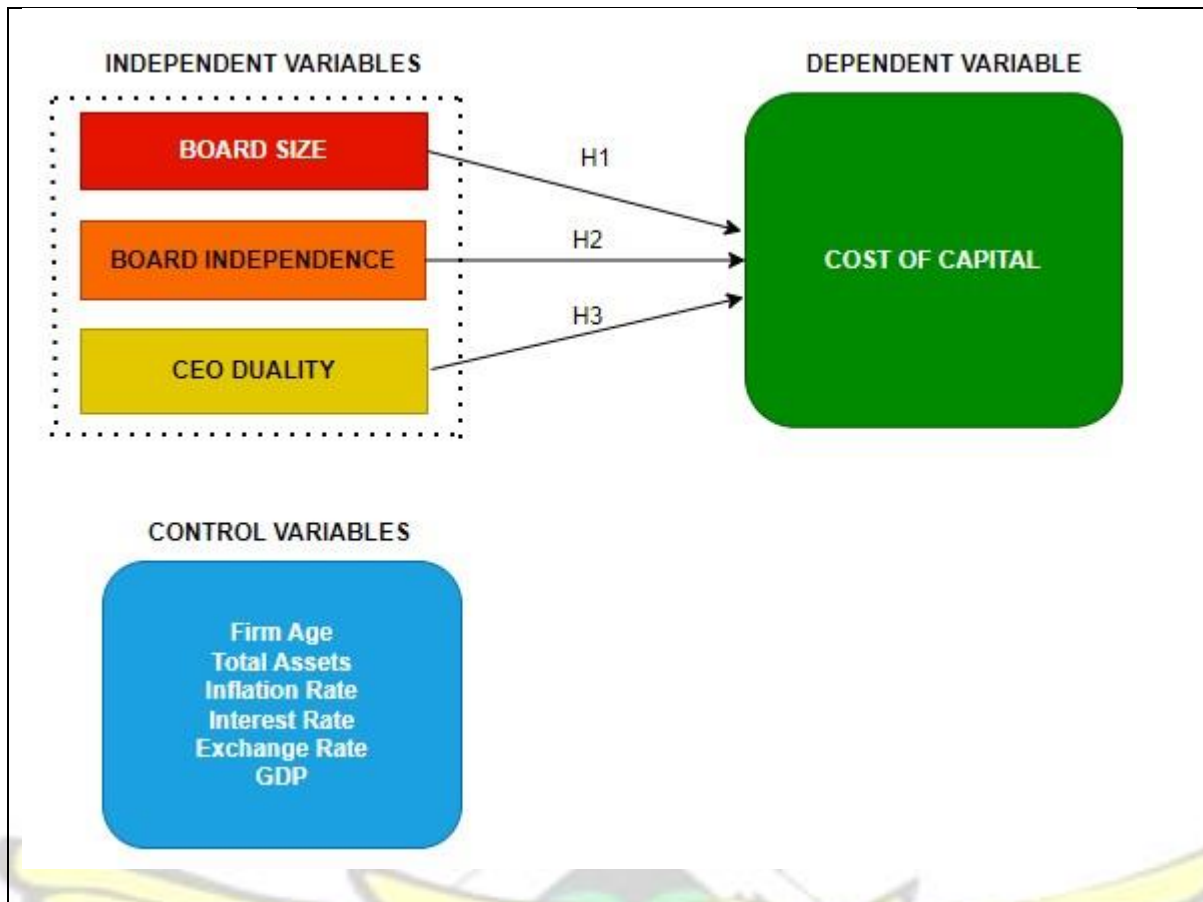
mechanisms and cost of capital. The findings of the study also show that firms with sound corporate governance mechanisms are able obtain ease access to finance and lower their risks component. The study also confirmed that block ownership has a positive impact on cost of capital.

2.5 Conceptual Framework and Hypothesis Formulation

This section of the study presents the conceptual framework and also formulate hypothesis for the study.

2.5.1 Conceptual Framework

This section of the study presents the conceptual framework of the study. According to Mugenda and Mugenda (2012), conceptual framework is a diagrammatic presentation of the variables employed in studying a phenomenon. This study presents the conceptual framework after a thorough review of literature. The framework depicts the relationship that exists between the dependent and the independent variables. Specifically, the framework seeks to establish the relationship between board size and cost of capital, relation between board independence and cost of capital and relationship between CEO duality and cost of capital. Sequentially, the 3 relationships are represented by the 3 testable hypotheses, H1, H2 and H3. The study controlled for firm age, total assets, inflation rate, interest rate, exchange rate, and GDP. Figure 2.1 presents the conceptual framework model of the study.



Source: Researcher's construct (2023)

Figure 2.1 Conceptual Framework Model

2.5.2 Board Size and Cost of Capital

Among the corporate governance variables, board size is considered to be the crucial factor that firm should place a priority on (Uadiale, 2010). Empirical literature overtime is yet to reach a conclusion on the optimal size of the board (Gafoor et al., 2018). However, some studies have called for large board size that will provide diversity to help the firm to secure vital assets and eliminate certain uncertainties in the operations of the business (Goodstein et al., 1994; Uadiale, 2010). Yermack (2016) lament that when the percentage of the directors increases, there arise certain challenges with respect to coordination, communication and decisionmaking. That is, as the company continues to employ more and more individuals on the board, there exist a potential trade-off between diversity and coordination (Jensen, 1993). Lipton and Lorsch

(2012) therefore recommends a minimum of 7 and a maximum of 8 directors on the board. This recommendations by Lipton and Lorsch (2012) is not ideal since the size of corporate board tends to be industry-specific (Adams and Mehran, 2003). Many studies have revealed that large board size is effective in monitoring and decision making, resulting in better performance and low cost of capital (Abdulazeez et al., 2019; Gafoor et al., 2018). Large board size with diverse knowledge facilitates effective monitoring prudent decision making, choose the best portfolio that will give a high return and as well provide transparent information which can reduce the cost of capital. Therefore, the study hypothesizes that:

***H₁:** Large board size has a significant negative effect on cost of capital of listed manufacturing companies.*

2.5.3 Board Independence and Cost of Capital

Apparently, there is a presumption that a board with more outside directors is better as they make a difference through quality decision making compared to a board dominated by insiders (Uadiale, 2010). Clifford and Evans (1997) see an independent director as a director who has no affiliation with the firm except for the directorship role the person is playing. Board independence is a requirement under corporate governance practices in any jurisdiction in attempt to mitigate the agency problem and ensure that depositors' funds are put to proper use. As revealed by Fama and Jensen (1983), the presence of an outside director on the board leads to effective decision making and also play a vital role in mitigating agency problems in the organization. Many studies have revealed that outside directors are effective in monitoring and decision making, resulting in better performance, asset quality, and low cost of capital. Therefore, the study hypothesizes that:

H₂: Board independence has a significant negative effect on cost of capital of listed manufacturing companies.

2.5.4 CEO Duality and Cost of Capital

Following the Cadbury Report in 1992, recommendations have always been made with respect to the separation of the two topmost positions, that is chairman and CEO. This is to ensure prudent management of resources, transparency and accountability. When these two positions are split, good governance are assured and distribute powers between individuals who can all contribute to the shareholder maximization objective of the firm (Huang et al., 2012). The separations of the two positions lowers risks level of the company, distribute powers and coordinate with each other to govern the company well to lower their cost of capital and enhance their performance. Therefore, the study hypothesizes that:

H₃: CEO duality has a significant positive effect on cost of capital of listed manufacturing companies.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter of the study presents the methodology employed to assess the nexus between corporate governance and cost of capital among quoted manufacturing firms in Ghana. The chapter presents the research design, population, sample size, data analysis and the model specification. Basically, section 3.1 presents the research design; section 3.2 and 3.3 presents the population, and sample size respectively; section 3.4 detail the data collection, while section 3.5 covers the data analysis techniques.

3.2 Research Design

The study generally examines the effect of corporate governance on cost of capital of listed manufacturing companies in Ghana. Following Creswell and Creswell (2017), research design of a study can be classified into exploratory, explanatory or descriptive. A particular design a researcher will chose for a study depends on the nature and objectives of the study. Studies that are descriptive in nature seeks to describe a phenomenon under study, while an exploratory design is adopted for studies where not much information can be obtained or areas where limited studies have been carried out. An explanatory study approach was used to analyse the phenomenon under investigation. The researcher adopted the explanatory study design to enable the explanation of the relationship between corporate governance and cost of capital. The explanatory study design would enable the researcher to utilize research tools to explain and analyse the relationship between the variables.

According to Saunders et al. (2017), research approach to social science studies can either be quantitative, qualitative or a mixed study approach. The research approach that underpins this study is the quantitative approach. This study indeed calls for a quantitative approach looking at the nature of the phenomenon under investigation. The quantitative make use of numeric

numbers and statistical tools to draw analyse a study and draw conclusions from it. The qualitative study place emphasis on process and meanings. The qualitative study approach usually relies on non-numerical dataset, interviews and observations (Yin, 2013). The quantitative study approach would enable the researcher to utilize numbers and statistical tools to analyse the relationship between corporate governance and manufacturing firms' cost of capital.

3.3 Population of the Study

Population of a study involves the total number of observations from which a sample can be drawn from. The manufacturing companies involve in this current study comprise all listed manufacturing companies in Ghana. Meaning, the study delas with only manufacturing firms who are listed on the Ghana Stock Exchange. The study has a total population of 32 manufacturing firms quoted on the GSE.

3.4 Sample Size and Sampling Technique

The researcher however utilize a sampling technique to ascertain the required sample size for the study. Sampling technique provides a range of methods that help a researcher to reduce the amount of data needed to collect by considering only data from a sub-group rather than all possible cases (Saunders et al., 2012). As already mentioned, the study covers all listed manufacturing companies in Ghana. Out of the 32 quoted firms on the GSE, 8 of them are manufacturing companies. This study utilizes all the 8 quoted manufacturing firms on the GSE. The listed manufacturing firms are captured from the period of 2010 to 2021 making a 96-firm year observation. These 8 listed manufacturing firms were chosen using the purposive sampling technique. All the 8 quoted firms under study were selected for the study based on the ease of obtaining their data for their published yearly financial statement for the study.

3.5 Data and Data Collection

Secondary data were the main data used for this study. Secondary data for this study were obtained from the published annual financial statements of these quoted manufacturing firms under study. The secondary data of this study used for the analysis spans from 2010 to 2021 from these manufacturing companies. These published financial statements were retrieved directly from the websites of the Ghana Stock Exchange. Data on variables including board size, board independence, CEO duality, firm size, firm age, and total assets were obtained directly from the published financial statements of these quoted manufacturing companies.

3.6 Data Analysis Techniques

The data were analysed quantitatively. Both descriptive and inferential statistics were employed in the data analysis. This study was analysed with the help of SPSS and Eviews. Before data is analyzed, the data goes through series of robustness checks such as stationarity, heteroscedasticity and multicollinearity. The study uses quantitative technique and an ordinary least square (OLS) as the study's estimation strategy. To establish the appropriateness of the results, pooled OLS regression model, fixed effect regression model and random effect regression model are run. Hausman Test is used to select between fixed effects model and random effect model.

3.7 Variables Description and Measurement

In this section, the researcher describes the variables, their proxies and the expected signs. This has been presented in Table 3.1

Table 3.1 Variable Description, Measurement and Expected signs

Variables	Proxies	Measurement	Expected Sign
Dependent	Cost of Capital	ROE	
Independent	Corporate governance	Board size	positive (-)
		Board Independence	positive (+)
		CEO duality	negative (-)
Control Variables	GDP	GDP at market price	positive (+)
	Firm Age	Total years it has operated	positive (+)
	Interest rate	Yield to maturity	negative (-)
	Inflation rate	Consumer Price Index	negative (-)
	Exchange rate	A dollar to Ghana cedis	negative (-)

Source: Researcher's construct (2023)

3.7.1 Dependent Variables

The dependent variables of this study are represented by cost of capital which is proxied by the weighted average cost of capital (WACC) of the firms under study. Studies such as Zhu (2014), Faysal et al. (2021) and Salehi and Salami (2020) all proxied cost of capital with the firm's WACC.

3.7.2 Independent Variables

In this study, corporate governance variables represent the independent variables. These include board size, board independence, and CEO duality. Board size got to do with the size of members sitting on the board. Board independent pertains to the number of outside directors sitting on the board, while CEO duality relates to the position of CEO and chairman. Studies such as Opoku-Appiah et al. (2017) proxied corporate with variables which include board size, board independence, and CEO duality.

3.7.3 Control Variables

In this study, both firm-specific and macroeconomic variables were employed as control variables. Specifically, firm age and total assets were controlled for in this study. The macroeconomic variables used in this study include inflation rate, exchange rate, interest rate and GDP. While firm age relates to the number of years the firm has operated since its commencement, firm size is calculated by logging the total assets. This had been confirmed in a study by Kumar et al. (2015). In this study assets relates to all resources owned and controlled by the firm.

3.8 Model Specification

This study adopts the model used in the study of board characteristics by Alhares (2020). Specifically, the study used panel regression approach since it has been used in many studies relating to corporate governance and cost of capital. Specifically, since the fixed effect model considers the difference that may exist among the corporate governance variables of different manufacturing firms, it was chosen over the pooled OLS which treat the data as a time series. The proposed model for this study is given as;

$$WACC_t = \alpha + \beta_0 + \varepsilon_t \dots \dots \dots (1)$$

Where;

WACC- Weighted Average Cost of Capital α -

is the intercept t – Represents the time
from 2010 to 2021

ε_t - error term

Specifically, the relationship has been modelled below;

$$WACC_{it} = \beta_0 + \beta_1 Bsize_{it} + \beta_2 BInd_{it} + \beta_3 CEOduality_{it} + \beta_4 FAge_{it} + \beta_5 TAssets_{it} + \beta_6$$

$$INRate_{it} + \beta_7 EXRate_{it} + \beta_8 INFrates_{it} + \beta_9 GDP_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

From the model,

WACC = cost of capital

Bsiz = board size

BInd=board Independence

CEOduality = CEO duality

FAge = firm age

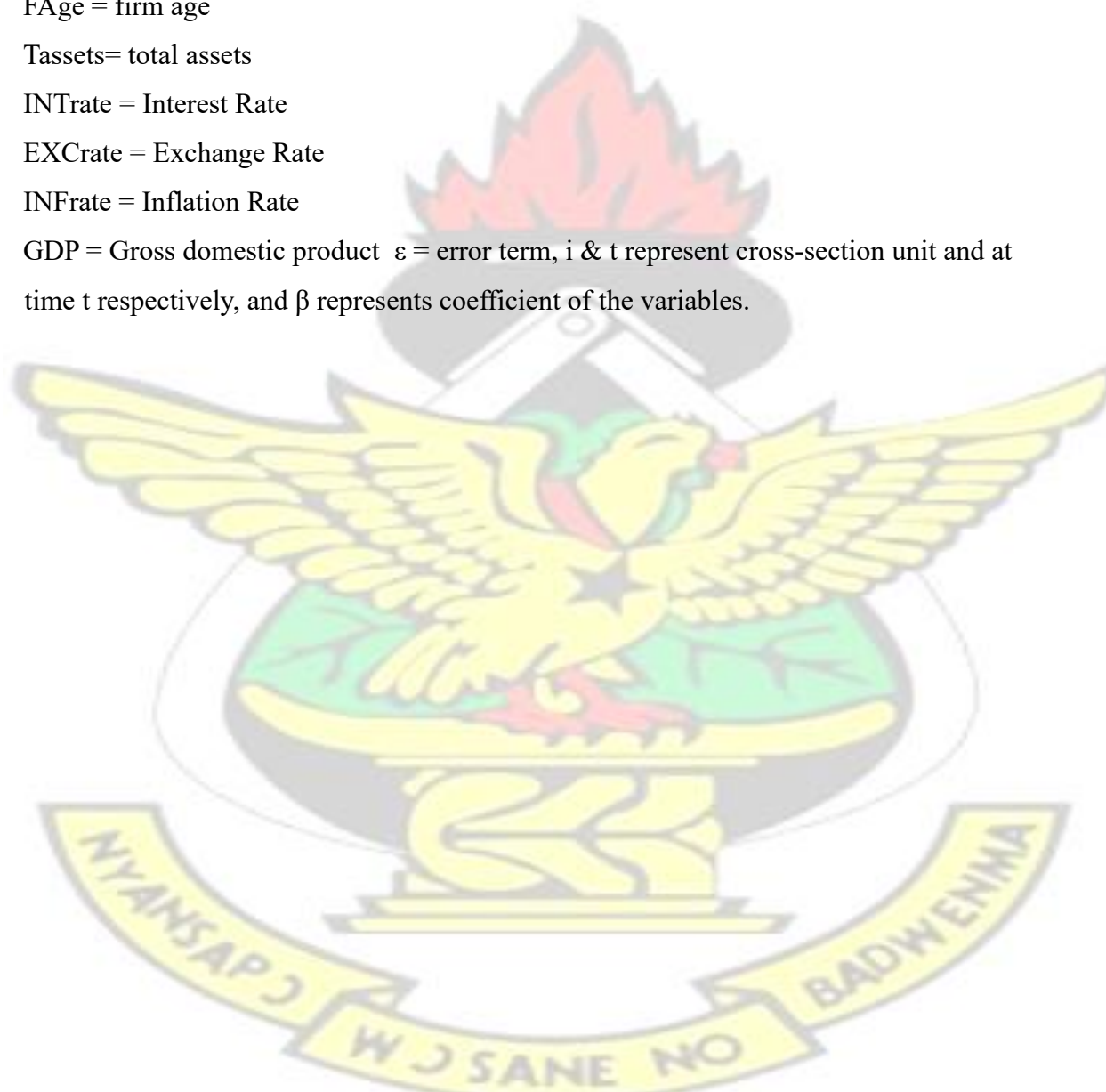
Tassets= total assets

INRate = Interest Rate

EXRate = Exchange Rate

INRate = Inflation Rate

GDP = Gross domestic product ε = error term, i & t represent cross-section unit and at time t respectively, and β represents coefficient of the variables.



CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

In this chapter, the researcher presents the results and discusses the findings on the effect of corporate governance on cost of capital of quoted manufacturing firms in Ghana. In section one of this chapter, the researcher presents the preliminary data analysis which includes the descriptive statistics of the data as well as the correlation analysis. In section two, the researcher presents the Hausman test to determine the best estimator for the study. In addition, the researcher presents the test for autocorrelation as well as heteroscedasticity test in section three. In section four, the analysis of the data based on the model specification was presented. Lastly, section five of this chapter discusses the findings of the study.

4.2 Preliminary Analysis

To achieve the research objectives, this section presents the preliminary analysis of the data and include the descriptive statistics, correlation analysis as well as the unit root test.

4.2.1 Descriptive Statistics

In this section of the study, the researcher employed the various statistical tools to describe the variables used in the study. In this section, the researcher presents the descriptive statistics based on the firm-specific and the macro-economic variables employed as control variables of the study. With reference to Table 4.1, it can be observed that board size recorded a mean of 8.051 with SD of 1.942, with a minimum and a maximum of 5.000 and 12.000. This means on average, manufacturing firms in Ghana have board size of 8 members. Board independence obtained an average of 5.762, SD of 1.553, a maximum (minimum) of 10.000 (3.012). This means, on average, manufacturing firms in Ghana have outside directors of about 6 members sitting on the board. CEO duality on the other hand recorded a mean of 0.06, with SD of 0.231, with a minimum and a maximum of 0.000 and 1.000. Cost of capital recorded a mean, SD,

minimum and a maximum of 0.192, 0.073, 0.231 and 0.361 respectively. This is an indication that on average, 19% is the return required by owners of firms in Ghana to invest their capital in businesses. With respect to firm operating age, Table 4.1 reported an average of 42.721 with SD of 11.012, and a maximum and a minimum of 63.000 and 19.000 respectively. Meaning, on average, the manufacturing firms under study have operated for about 43 years in Ghana. Pertaining to total assets, it was reported that it has an average of 238414.71 million Ghana cedis, SD of 236720.57, a minimum of 3107.00 and a maximum of 1075.32. This means, on average, listed manufacturing firms in Ghana own and control total assets to the tune of 238414.71 million Ghana cedis.

The macro-economic variables employed in this study include inflation rate, interest rate, exchange rate and GDP. It can be indicated in Table 4.1 that inflation rate obtained a mean of 16.003, SD of 9.493, with a minimum (maximum) of 7.141 (41.502). This is an indication that on average, prices of goods and services increase persistently by 16%. Interest rate also record a mean of 28.918, SD of 6.344, minimum of 20.612 and a maximum of 46.723. Exchange rate as another control variable revealed a mean, SD, minimum and maximum of 2.354, 1.793, 0.543 and 5.81 respectively. Lastly, GDP as another control variable under this study obtained an average and SD of 5.783 and 2.872 respectively, with a minimum (maximum) of 0.513 (41.053). This means, on averages, the gross domestic product of Ghana is measured around 41.05 billion Ghana cedis. Table 4.1 indicates the results of the descriptive statistics results.

Table 4.1 Descriptive Statistics Results of the Variables Employed in the Study

	Mini	Maxi	Mean	S.D
VARIABLES				
Board Size	5.000	12.000	8.051	1.942
Board Independence	3.012	10.000	5.762	1.553
CEO Duality	0.000	1.000	0.063	0.232
Cost of Capital	0.231	0.361	0.192	0.073
Firm Operating Years	19.000	63.000	42.721	11.012
Total Assets	3107.0	1075326	238414	236720
Inflation Rate	7.141	41.502	16.003	9.493
Interest Rate	20.612	46.723	28.913	6.344
Exchange Rate	0.543	5.812	2.354	1.793
GDP	0.513	41.053	5.783	2.872

Source: Field Survey (2023)

4.2.2 Correlation Analysis

Pearson correlation matrix is employed to analyse the level of multicollinearity among the variables. When the variables employed in studying the effect of corporate governance on cost of capital are highly correlated, the regression model cannot be correctly computed and estimated for the analysis. From the Pearson correlation matrix, the highest and the lowest correlation among the variables occurred between total assets and firm operating years which is 0.604 as well as between leverage and total assets which is -0.027 respectively and thus, we can conclude that they are not a perfect correlation. From Table 4.2, the level of correlation is not high, hence multicollinearity is not an issue.

Table 4.2: Pearson Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10
1. BS	1									
2. BI	0.917	1								
3. CEO	-0.027	-0.068	1							
4. CoC	0.054	0.031	-0.228	1						
5. F. Age	-0.405	-0.217	-0.111	-0.035	1					
6. T. Asset	0.341	0.409	-0.160	0.169	0.252	1				
7. Inf. Rate	0.052	0.038	-0.155	0.386	0.250	0.345	1			
8. Int. Rate	0.020	0.023	-0.190	-0.244	-0.271	-0.234	0.856	1		
9. Exc.Rate	-0.133	-0.078	0.425	-0.341	0.140	0.135	-0.449	0.543	1	
10. GDP	0.033	0.180	-0.171	-0.196	-0.004	0.183	-0.309	0.434	0.243	1

Source: Field Survey (2023)

4.2.3 Panel Unit Root Test

Panel data for analysis should not contain any unit root. This study employed the Augmented Dickey-Fuller test to test for data stationarity. From Table 4.3, all the variables employed in this study are stationary at first and second difference. From Table 4.3, the researcher can therefore conclude that the variables used in this study contain no unit root since the p-values obtained are less than 0.05.

Table 4.3 Augmented Dickey-Fuller Test

ADF					
VARIABLES	AT 1 st DIFFERENCE		AT 2 ND DIFFERENCE		Conclusion
	t-stats	prob	t-stats	prob	
BS	-6.401	0.000	-5.041	0.000	stationary
BI	-7.606	0.000	-6.719	0.000	stationary
CEO	-21.438	0.001	-7.773	0.000	stationary
CoC	-5.464	0.000	-4.021	0.002	stationary
F. Age	-16.204	0.000	-8.802	0.000	stationary
T. Asset	-16.543	0.000	-7.544	0.012	stationary
Inflation	-8.987	0.000	-4.567	0.000	stationary
Interest	-13.657	0.000	-6.987	0.000	stationary
Exchange	-8.986	0.000	-4.897	0.000	stationary
GDP	-17.564	0.000	-7.986	0.000	stationary

Source: Field Study (2023)

4.3 Model Specification

The LM test and the F-test was utilised in this section to validate the model under pool OLS and random effect as well as fixed-effect and pool-OLS respectively. Table 4.4 provides support for both random and fixed effect for the model. However, it should be noted that the researcher's decision to utilize either the fixed effect or the random effect is further confirmed by using the Hausman test.

Table 4.4: LM and F-Test Statistics

	Test	Stat	P-value	Conclusion
Model 1	LM Test	0.831	0.005	Random-Effect Supported
	F-Test	0.762	0.009	Fixed Effect Supported

Source: Field Study (2023)

4.3.1 Hausman Test

To determine the best estimator to apply for the model, the Hausman test was employed by the researcher. The null hypothesis is that the preferred model is random effects; the alternate hypothesis is that the model is fixed effects. The model in Table 4.5 is efficient under the fixedeffect model. Hence, the fixed-effect model is the best estimator to apply for this study.

Table 4.5: Hausman Test Results

	Test	P-value	Conclusion
Model 1	Hausman	0.006	Fixed-Effect Supported

Source: Field Study (2023)

4.3.2 Autocorrelation

As stated by the null and the alternative hypothesis, there is no serial correlation and there is serial correlation in the residual respectively. The researcher employed the Breusch-Godfrey test to test for autocorrelation. From Table 4.6, it can be seen that the p-values under the model is more than 5%. The researcher therefore concludes that there is no autocorrelation.

Table 4.6: Breusch-Godfrey Test of Autocorrelation

	Test	F-Statistics	P-value	Conclusion
Model 1	Breusch-Godfrey	0.625	0.543	no first order autocorrelation

Source: Field Study (2023)

4.3.3 Heteroscedasticity

Heteroscedasticity is been encountered whenever large differences exist among the sizes of our observations. To test for the presence of heteroscedasticity, the researcher employed the Breusch-Pagan-Godfrey test. As indicated in Table 4.7, there is no heteroscedasticity as a result of accepting the null hypothesis since the p-values in the model is more that 5%.

Table 4.7: Breusch-Pagan-Godfrey Test Results

	Test	F-Statistics	P-value	Conclusion
Model 1	Breusch-Pagan	3.445	0.324	no heteroscedasticity

Source: Field Study (2023)

4.4 Fixed-Effect Regression Analysis

After the Hausman test, the fixed effect model was deemed as the best estimator for this study. In this section, the researcher presents the results of the fixed effect model to analyse the results. Table 4.8 presents the summary of the fixed-effect model of the variables employed to analyse the impact of corporate governance on cost of capital. The results of the table reveal presents a summary of the fixed effect regression model for the study.

Table 4.8: Summary of Fixed Effect Regression Analysis

	Coef.	Std. Err.	T-stats	Prob
Board Size	-0.007	0.009	-0.783	0.035
Board Independence	-0.007**	0.011	-0.670	0.004
CEO Duality	0.006	0.042	1.460	0.047
Firm Age	-0.004	0.001	-0.504	0.021 Total
Assets	-5.53E-08	1.82E-07	-0.304	0.064
Inflation Rate	-0.002	0.002	-0.080	0.082
Interest Rate	-0.001**	0.004	-0.231	0.001
Exchange Rate	0.015**	0.010	-1.531	0.000

GDP	-0.006**	0.005	-1.235	0.004
Constant	0.176**	0.030	5.872	0.000
Number of Observations:144		R-squared =0.471		

Source: Field Study (2023)

As indicated from Table 4.8, the independent variables of the study include board size, board independence and CEO duality. The control variables include firm age, total assets, inflation rate, interest rate, exchange rate, and GDP. From Table 4.8, in the absence of the independent and control variables, cost of capital is expected to enhance by 0.1768 ($p=0.000$). Relative to the independent variable, results of the study revealed that board size has a coefficient of -0.007 and is statistically significant at 0.05 level ($p=0.035$). Hence, a unit rise in board size would be expected to cause a unit increase of 0.007 in the cost of capital of the manufacturing firms under study. Board independence obtained a coefficient of -0.007 and is statistically significant at 0.05 level ($p=0.004$). Meaning, unit rise in board independence would cause a unit decrease in the cost of capital of the manufacturing firms under study by 0.007. Relative to CEO duality, the study revealed that it has a parameter estimate of 0.006 and is statistically insignificant at 0.05 significance level ($p=0.047$).

Relative to the control variables, results of the study revealed that firm age has a coefficient of -0.007 and is statistically significant at 0.05 level ($p=0.021$). Hence, a unit rise in firm operating years would be expected to cause a unit decrease of 0.007 in the cost of capital of the manufacturing firms under study. Pertaining to total assets, the study revealed that it has a parameter estimate of -5.53E-08 and is insignificant at 0.05 significance level ($p=0.064$). Relative to the next control variable of the study, the study found that inflation rate has a parameter estimate of -0.002 and is statistically insignificant at 0.05 level ($p=0.082$). Meaning, unit rise in the rate of inflation in the country would cause a unit decrease in the cost of

manufacturing firms under study by 0.002. Interest rate as the next control variable has a parameter estimate of -0.001 and is also statistically significant under 0.05 level ($p=0.001$).

Similarly, exchange rate obtained a coefficient of 0.015, and a significance level of 0.000.

Lastly, GDP recorded a parameter estimate of -0.006 and is also statistically significant under 0.05 level ($p=0.0045$). The overall R-squared achieved for the model is 0.471, which is an indication that the model can predict up to 47.1% of the changes in the cost of capital of the manufacturing firms under study.

4.5 Discussion of Findings

This section of the chapter discusses the findings of the study in line with the study objectives. The findings as presented by the models employed for the analysis are discussed in line with literature to confirm or refute the claims made by previous researcher.

4.5.1 Board Size and Cost of Capital

The first objective of the study was to assess the effect of board size on cost of capital. Among the corporate governance variables, board size is considered to be the crucial factor that firms place much emphasis on (Uadiale, 2010). Specifically, there is not ideal board size since the size of corporate board tends to be industry-specific (Adams and Mehran, 2003). Results of the regression model revealed a coefficient of -0.0071 which is statistically significant at 0.05 level of confidence. This is an indication that a unit decrease in the board size of the manufacturing firms under study will cause a unit increase in their cost of capital. This might be due to the fact that large board size with diverse knowledge facilitates effective monitoring prudent decision making, choose the best portfolio that will give low cost on capital and as well provide transparent information which can reduce the cost of capital. The p-value of 0.0042 reveals a significant effect of board size on cost of capital. Empirical literature has confirmed that large board size is effective in monitoring and decision making, resulting in better performance and

low cost of capital (Abdulazeez et al., 2019; Gafoor et al., 2018). The regression coefficient is negative under the estimation technique. The findings of the study confirmed the first hypothesis of the study. That is, large board size has a significant negative impact on cost of capital.

4.5.2 Board Independence and Cost of Capital

The second objective of the study was to analyse the effect of board independence on cost of capital. As revealed by Fama and Jensen (1983), the presence of an outside director on the board leads to effective decision making and also play a vital role in mitigating agency problems in the organization. The regression mode results revealed a coefficient of -0.0077 which is statistically significant at 0.05 level of confidence. This is an indication that a unit rise in board independence of manufacturing firms will cause a unit decrease in the cost of capital. Apparently, there is a presumption that a board with more outside directors is better as they make a difference through quality decision making compared to a board dominated by insiders (Uadiale, 2010). The p-value of 0.0042 reveals a significant effect of board independence on cost of capital of manufacturing firms under study. The regression coefficient is negative under the estimation technique. The findings of the study confirmed the second hypothesis of the study. That is, board independence size has a significant negative impact on cost of capital.

4.5.3 CEO Duality and Cost of Capital

The second objective of the study was to analyse the effect of board independence on cost of capital. When these two positions are split, good governance are assured and distribute powers between individuals who can all contribute to the shareholder maximization objective of the firm (Huang et al., 2012). Results of the regression model revealed a coefficient of 0.0062, indicating a positive relationship between CEO duality and cost of capital of manufacturing firms under study. The regression coefficient is an indication that a unit rise in CEO duality

would cause a unit increase in the cost of capital of the firms under study. The p-value of 0.0472 indicates an insignificant relationship between CEO duality and cost of capital. The separations of the two positions lowers risks level of the company, distribute powers and coordinate with each other to govern the company well to lower their cost of capital and enhance their performance (Bokpin and Arko, 2009). My projection (Hypothesis 3) has been that CEO duality impact positively on the cost of capital of manufacturing firms. This has been confirmed by the study findings.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this section of the study, the researcher summarises the key findings, conclude the study and highlights some recommendations for stakeholders. This chapter also made some directions for future studies.

5.2 Summary of Findings

The first objective of the study was to assess the effect of board size on cost of capital of manufacturing firms in Ghana. Based on the analysis, this study found that the board size has a significant negative effect on cost of capital of manufacturing firms. The findings confirmed the first hypothesis of the study.

The second objective of the study was to evaluate the effect of board independence on cost of capital of manufacturing firms in Ghana. The regression model results revealed a significant negative effect of board independence on manufacturing firms' cost of capital. The findings of the study confirmed the second hypothesis set for the study.

The third objective of the study was to analyse the effect of CEO duality on manufacturing firms' cost of capital. The regression model revealed a positive but insignificant effect of CEO duality on manufacturing firms' cost of capital.

5.3 Conclusion

The main aim of this study was to analyse the effect of corporate governance on manufacturing firms' cost of capital. The study utilised quoted manufacturing firms on the Ghana Stock Exchange. Due to data availability, 8 listed manufacturing firms are captured and observed from between the period of 2010 to 2021 making a 144-firm year observation. The study utilised the quantitative approach and explanatory research design. Data for the study were obtained from the annual financial statements of the selected firms under study. In order to achieve the objective of the study, the Hausman test was employed to determine the appropriate model for this study and found that the Fixed-Effect model was appropriate for this study. Augmented Dickey-Fuller test and Breusch-Godfrey test were performed to test for data stationarity and autocorrelation respectively. On the other hand, the researcher employed Breuch-Pegan test to test for the presence of heteroscedasticity. Based on the findings, this study concludes that corporate governance impact negatively on quoted manufacturing firms' cost of capital.

5.3 Recommendations

In this section of the study, the researcher made some recommendations to appropriate stakeholders. These key stakeholders include management of manufacturing firms, investors and shareholders.

5.3.1 Management of Manufacturing Firms

The study revealed that corporate governance has a significant effect on manufacturing firms' cost of capital. Based on this, the study recommends to management of manufacturing firms to consider the cheapest and cost-effective source of capital like their retained earnings whenever they are looking for capital to expand their operations. External source of securing or raising capital for expansion should be the last source management should consider.

5.3.2 Shareholders of Manufacturing Firms

The study revealed a negative impact of board size and board independence on manufacturing firms' cost of capital. Based on this finding, this study recommends to shareholders to determine the ideal size of board members as well as outside directors suitable for the success of the firm. They should use their voting power to determine the best candidates needed to sit on the corporate board to enhance quality decision making to impact better on their performance.

5.3.3 Potential Investors

This study has provided insight on how corporate governance impact on cost of capital. To potential investors, this study recommends to them to assess how the composition of the board impact on cost of capital. The study recommends to them to investigate whether the composition of the board minimizes the risks components associated in their operations as well as their cost of capital.

5.4 Directions for Future Studies

To begin with, this study was conducted using quoted manufacturing firms of the Ghana stock exchange. The researcher therefore recommends future studies to be carried out using different sectors of the Ghanaian economy such as the banking sector, insurance sector, and the health sector, among others. In addition, the researcher also recommends further studies to increase the scope and the sample size for comparison purpose. Lastly, future studies should be replicated in other economies for comparison purpose.

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