IMPACT OF CORPORATE GOVERNANCE ON EFFECTIVE CORPORATE TAX RATES AMONG LISTED FIRMS IN KENYA

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A THESIS SUBMITTED TO THE BOARD OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE CONFEREMENT OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION (FINANCE OPTION) OF THE UNIVERSITY OF KABIANGA

DECLARATION AND APPROVAL

This thesis is my original work and has not been submitted for conferment of any degree or any other award in any University or Institution of higher learning.

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DEDICATION

To my family

ABSTRACT

Corporate income tax is an important source of revenue to governments around the world. Conversely, Corporation tax represents a significant expense to companies thereby impacting on major corporate decisions. Understanding factors that affect the effective corporate tax rates is therefore important not only to corporations but also to governments and other policy makers. Despite the well documented corporate tax leakages across the world, widening budget deficits and ballooning public debt in Kenya, limited studies have been conducted to show the level of tax management practices among NSE listed firms in Kenya. Equally, few studies, if any, have been done to investigate the impact of corporate governance on effective tax rates among the listed firms. The purpose of this study was therefore to investigate the impact of corporate governance on effective corporate tax rates among firms listed on the Nairobi Securities Exchange between 2011 and 2017. Specifically, the study investigated the impact of board size, board independence, board gender diversity and corporate ownership structure on effective corporate tax rates among the listed firms in Kenya. The moderating effect of capital intensity and leverage on the relationship between corporate governance and effective tax rate was also examined. Agency and stakeholder theories provided the theoretical framework for this study. Longitudinal research design was used to take care of accruals and deferrals in tax payment. Secondary data was extracted from annual financial statements and reports of the listed firms using a content analysis form. Purposive sampling was used to select a sample from the list of 67 listed firms. Both descriptive and inferential tests were conducted with the aid of STATA software. Descriptive statistics revealed a mean ECTR of 24.7%. Diagnostic tests revealed that there was no violation of the assumptions of the regression model. The study found that the correlation between board size, board independence, board gender diversity with effective corporate tax rate was positive and significant. However, there was a significant negative correlation between corporate ownership structure and effective corporate tax rate. The findings of the random effects model indicated that board size (β=.148, p=.034), board independence (β=.452, p=.000), and board gender diversity (β=.273, p=.002), had a positive and significant effect on effective corporate tax rate. On the other hand, corporate ownership structure (β=-.136, p=.004) was shown to have a negative and significant effect on effective corporate tax rate. There was a significant moderating effect of capital intensity on the relationship between board size ($R^2\Delta$=0.06; β= 0.33; ρ<0.05), board independence ($R^2\Delta$=0.06; β= 0.57; ρ<0.01) and board gender diversity ($R^2\Delta$=0.03; β= 0.17; ρ<0.01) and effective corporate tax rate. Similarly, there was a significant moderating effect of leverage on the relationship between board size ($R^2\Delta$=0.06; β= -0.52; ρ<0.01), board independence ($R^2\Delta$=0.08; β= -0.23; ρ<0.01) and board gender diversity ($R^2\Delta$=0.06; β= -0.27; ρ<0.01) and effective corporate tax rate. The study therefore concludes that corporate governance has a significant impact on effective corporate tax rates among NSE listed firms. This study was expected to aid policy makers in corporate and fiscal policy formulation as well as enriching the existing literature. Similar studies can be extended to other firms not listed on the NSE.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

CAPINT : Capital Intensity

CBO : Congressional Budget Office

CG : Corporate Governance

CIT : Corporate Income Tax

CMA **:** Capital Markets Authority

ECTR : Effective Corporate Tax Rates

ETR : Effective Tax Rate

GAO : Government Accountability Office`

IAS : International Accounting Standard

ICPAK : Institute of Certified Public Accountants of Kenya

LEV : Leverage

KRA : Kenya Revenue Authority

NACOSTI : National Commission of Science, Technology and Innovation

NASDAQ : National Association of Security Dealers Automated Quatations

NED : Non-Executive Director

NSE : Nairobi Securities Exchange

OECD : Organization for Economic Cooperation and Development

OLS : Ordinary Least Squares

PPE	:	Property, Plant and Equipment
S&P	:	Standard and Poor's
SBF	:	Societe des Bourses Francaises (French Stock Market Index)
SEZ	:	Special Economic Zones
UNCTAD	:	United Nations Conference on Trade and Development
VIF	:	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

Board gender diversity	refers to the percentage of female directors on the board
Board independence	refers to the percentage of non-executive directors on the board
Board size	refers to the total number of directors on the board
Capital Intensity	refers to the proportion of property, plant and equipment to total assets figure
Corporate governance	refers to the composition of the board of directors in terms of size, independence, gender diversity and ownership structure of the firm.
Effective corporate tax rate	is the ratio of a corporation's cash tax paid to Profit before tax
Leverage	refers to the ratio of total debt to total equity
Impact	refers to long term effect
Ownership structure	refers to the proportion of the largest five shareholders to the total outstanding shares. Where the largest five shareholders have more than 50% shareholding then the

	firm has concentrated ownership, otherwise it is dispersed.
Rent extraction activities	refers to decisions that benefit managers at the expense of shareholders and stakeholders. They include excessive perquisites, higher executive compensation, empire building, blatant embezzlement of funds and stealing of corporate assets.
Statutory tax rate	refers to the legally imposed rate typically contained in a tax statute

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter presents the background of the study, the statement of the problem, study objectives, research hypotheses, significance of the study as well as scope and limitations of the study.

1.2 Background of the Study

Corporate tax is one of the main sources of government revenue especially for developing economies where alternative sources of income are thin (Crivelli, Mooij and Keen, 2016). Apart from being a source of revenue, corporate tax is also used by governments in fiscal management of the economy in such areas like foreign direct investments. To achieve these objectives, governments set statutory corporate tax rates at which corporations are expected to pay their taxes (Crivelli *et al*, 2016).

However, statutory corporate tax rates do not provide a complete picture of a firm's total tax expense since a firm's tax cost is obtained by applying a series of deferrals, accruals and other deductions to the pre -tax income (Ribeiro, Cerqueira and Brandao, 2015). These adjustments are brought about due to differences between accounting and tax treatment of certain items in the financial statements. Thus effective tax rates (ETR) provide a more reliable and realistic measure of a firm's tax burden than the statutory rates.

Corporate tax plays a crucial role in corporate financial decisions (Graham, 2003). Some of the financial decisions affected by corporate income tax include capital budgeting decisions, capital structure decisions and dividend policy. Nekesa, Namusonge and Makokha (2017) established that corporate income tax has a significant positive relationship with financial performance of firms listed on the Nairobi Securities Exchange (NSE) thus suggesting the influence corporate tax has on major corporate decisions.

Since tax represents a significant expense to a firm which in turn affects its performance, firms will always look for ways of reducing their tax burden by lowering their effective tax rates. A study by Congressional Budget Office (GAO, 2008) revealed that Effective tax rates are always lower than the statutory tax rates (Appendix 1). Similarly a study by Pomerleau and Jahnsen (2017) and Fernandez-Rodriguez, Garcia-Fernandez and Martinez-Arias (2019) also shows that ETRs are always lower than the statutory tax rates.

Lower effective tax rates benefit a company through cash savings which affords it the opportunity to make new investments which in turn enhances the value of the firm. Consequently, shareholders' wealth is maximized in terms of increased share price and higher dividends (Annuar, Salihu and Sheikh-Obid, 2014). Lim (2011) also cites the benefit of lower cost of debt brought about by lower effective tax rate as a result of reduced default risk and increased financial slack. The benefits of lower ETR do not only accrue to shareholders but also to management team who in most cases receive compensations for their work in reducing a company's tax liabilities.

While a lower effective tax rate is beneficial to the company and her shareholders in terms of tax savings, the costs associated with it may be too large to bear. Annuar *et al*. (2014) list these costs to include the potential penalty imposed by tax authorities, agency costs of rent extraction, fall in a company's share price and damage to company's reputation and legitimacy. A specific study by Hanlon and Slemrod (2009) established that news about corporate tax aggressiveness leads to a negative effect on the stock prices of these companies. On the other hand, companies reporting higher effective corporate tax rates record an increased market value (Desai, Dyck and Zingales, 2007).

The goal of minimizing tax cost has been referred to with numerous phrases by preceding researchers. For instance, Minnick and Noga (2010) called it "tax management" and defined it as "the capacity to pay a low amount of taxes". Desai and Dharmapala (2006) and Dyreng, Hanlon and Maydew, (2008) name it tax avoidance and define it as "anything that explicitly reduces taxes". On their part, Wahab and Holland (2012) and Armstrong, Blouin and Larcker (2012) refer to it as "tax planning". Hanlon and Slemrod (2009), Garbarino (2009) and Boussaidi (2015) on their part call it "tax aggressiveness".

Tax aggressiveness does not necessarily benefit shareholders. Yeung (2010) cites the famous Enron case in the United States of America where the corporation was so involved in reduction of effective tax rates that it eventually collapsed leaving shareholders with a huge loss of investment amounting to 74 billion US Dollars. In this particular case, the tax department had been turned into a business department with an annual revenue target. All the while the top managers were receiving huge bonuses for their perceived good performance.

Several studies have documented widespread revenue losses due to corporate tax avoidance. For instance, Crivelli *et al*. (2016) estimate global revenue losses at around 650 billion US Dollars annually, with developing countries constituting one-third of this figure. Cobham and Gibson (2016) estimate the revenue losses at around 2-3 percent of total tax revenue in OECD countries, and 6-13 per cent in developing countries. Cobham and Jansky (2017) put the global revenue loss at 500 billion US Dollars per year and show that the greatest losses occur in low and lower middle- income economies.

United Nations Conference on Trade and Development (UNCTAD, 2015), using data on returns to Foreign Direct Investments (FDI) to project tax losses arising from shifting of profits from developing nations to developed nations, put the revenue losses at around one hundred billion US Dollars per year. Organization for Economic Cooperation and Development (OECD, 2015), estimates a worldwide loss of between One hundred billion to Two hundred and fourty billion US Dollars in 2014 (and up to 2.1 Trillion US Dollars over 2005-2014 period).

Barford and Holt (2013) reported huge corporate tax losses by some of the largest multinationals in the world. For instance, out of the sales of £3.35 billion in the United Kingdom, Amazon only reported a tax expense of just £1.8 million. Starbucks was also cited for failing to pay any corporation tax despite making sales of £400 million in the United Kingdom in 2012. It was also reported that a subsidiary of Google located in the United Kingdom paid a paltry £ 6 million as corporate tax on a turnover of £395 million.

Following the continued decline in effective tax rates over the years and the huge losses in corporate tax revenue, many scholars and researchers have conducted studies to

establish the possible causes (Dryeng, Hanlon and Maydew, 2016 and Kowano and Slemrod, 2016). Such studies include Desai and Dharmapala (2006); Dryeng *et al.* (2008); Desai and Dharmapala (2009b); Gupta and Newberry (1997); Minnick and Noga (2010); Hanlon and Heitzman (2010) and Armstrong *et al*. (2012). These studies have in general considered the impact of firm's specific characteristics such as firm size, capital structure, profitability and asset mix on effective tax rates.

Most of these studies have failed to provide a full picture of what exactly determines effective tax rates among corporations that are characterized by separation of ownership from control. These studies generally assume that companies make their tax decisions without considering agency problem and ignore the role the board of directors could have on a company's tax strategy (Ribeiro *et al*., 2015). This has led to calls by scholars to consider the impact of corporate governance on effective corporate tax rates.

Corporate governance, according to the Capital Markets Authority (CMA, 2015) is defined as "the process and structures used to direct and manage business affairs of a company towards enhancing prosperity and corporate accounting with the ultimate objective of realizing shareholders long-term value while taking into account the interests of other stakeholders". In Kenya, all NSE listed companies are required to comply with corporate governance guidelines issued by the Capital Markets Authority.

According to Organization for Economic Co-operation and Development (OECD, 2015), corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. OECD (2015) notes that the main purpose of corporate governance is "to help build an environment of trust, transparency

and accountability necessary for fostering long-term investment, financial stability and business integrity, thereby supporting stronger growth and more inclusive societies".

Corporate governance has been hailed as a way to solve agency problem emanating from separation of ownership and control. As Shleifer and Vishny (1997) observe, the board of directors have a duty to protect the interest of shareholders. This is because the board has the power to recruit, dismiss and compensate top management as well as to approve and monitor important company decisions. This view is shared by Bhagat and Bolton (2008) who state that the role of the board is to protect the company shareholders by monitoring management and that the effectiveness of the board in doing this depends on its composition.

The relationship between effective corporate tax rates and corporate governance may best be explained by the agency conflict between shareholders and managers (Jensen and Meckling, 1976). As Desai and Dharmapala (2008) observe, managers may engage in complex and opaque tax management activities for their own benefit. The problem may further be compounded if their compensation packages are tied to their performance thus providing an incentive for them to pursue activities that will result in the lowering of effective tax rates for their own private gain.

While it may be expected that shareholders will always approve of lower effective tax rates due to extra after-tax income, such benefits could be extinguished by the agency costs that might be incurred to prevent management from engaging in rent extraction activities (Chen, Chen, Cheng and Shevlin, 2010). Therefore, the attitude of shareholders towards ETRs will depend on their evaluation of both benefits and costs. Also, various

classes of shareholders whether majority or minority may exhibit varying desire for ETRs. In all this, the board of directors has a role to play in reducing agency conflicts by playing both an advisory and monitoring role to prevent managerial opportunism (Annuar *et al*. 2014; Hanlon and Heitzman, 2010).

As Oyenike, Olayinka and Emeni (2016) observe, company directors have an influence on a firm's tax management activities because of their oversight role on executive decisions. The board therefore plays a key role in the success or failure of tax strategies. Because of this, several studies have in the recent past been conducted to ascertain the impact of board characteristics (such as board independence, board size, board gender diversity, CEO/Chairman duality) on effective tax rates. Some of these studies include Yeung (2010), Mahenhiran and Kasipillai (2011), Wahab and Holland (2012), Zemzem and Ftouhi (2013) and Ribeiro *et al*, (2015). However, few studies if any have been conducted in Kenya.

Board size is one of the corporate governance mechanisms that has been identified by prior studies to have an influence on the effective tax rates. Jensen (1993) observes that the size of the board determines its effectiveness which influences a company's management policy. While smaller boards have been praised for ease in decision making they have been castigated for making low quality decisions due to limited variety of skills (Dalton and Dalton, 2005 and Kaymark and Bektas, 2008). Prior studies such as Minnick and Noga (2010), Lanis and Richardson (2011), Aliani and Zarai (2012a), Khaoula and Ali (2012), Ribeiro *et al*. (2015) and Pratama (2017) have reported mixed findings with

some reporting significant effect of board size on effective tax rates while others have reported insignificant effect.

Another key attribute of the board of directors which has the potential to influence the way organizations are run is board independence. Literature has defined board independence in terms of non-executive (outside) and executive (inside) directors (Ribeiro *et al*., 2015). Previous studies have reported conflicting findings on the effect of board independence on effective tax rates. For instance, Zhou (2011), Lanis and Richardson (2011), Khaoula and Ali (2012) and Oyenike *et al*., (2016) obtained results showing that board independence improves tax practices. In other words board independence increases effective tax rates. This could be attributed to better monitoring by non-executive directors which deny managers the opportunity to engage in opaque activities aimed at lowering effective tax rates for their own personal gain. Other studies such as Pratama (2017) have found an insignificant effect of board independence on effective tax rate.

Board gender diversity is another feature of the board that can have an influence on tax decisions. Past studies have shown that female directors generally exhibit greater risk aversion and are usually more sensitive to ethical issues (Bernardi and Arnold, 1997; Powell and Ansic, 1997; Croson and Gneezy, 2008; Adams and Ferreia, 2009). As Kastlunger, Dressler, Kirchler, Mittone and Voracek (2010) argue interpretation of tax laws and regulations differ depending on gender traits. It was observed that women generally manifest higher levels of tax compliance than men. However, prior studies have reported mixed findings on the impact of gender diversity on effective tax rates. Aliani,

Mhamid and Zarai (2011), Khaoula and Ali (2012), and Oyenike *et al*. (2016), for instance found an insignificant effect of female directors on effective tax rates which they attributed to low number of women sitting on the board. On the other hand, studies by Boussaidi and Hamed (2015) and Francis, Hasan, Wu and Yan (2014) reported a significant effect.

Equally, corporate ownership structure has been found to influence decisions on effective tax rates by affecting the nature of agency conflicts in a corporate setting (Annuar *et al*. 2014, Chen *et al.* 2010). These studies reveal that not all types of shareholders approve of their managers engagement in activities aimed at managing taxes. Florackis (2008) contends that shareholders with a small stake in the company have little incentive to monitor management as opposed to those with significant stake due to differing risk profile. The same view is shared by Khurana and Moser (2012) who opine that support for tax management varies across different categories of shareholders due to varying investment horizons. As Shleifer and Vishny (1997) note, the agency conflict between minority and majority stockholders arises due to the fact that majority stockholders have immense power that allows them to extract private benefits by influencing major decisions of the firm including tax planning.

While past studies have mainly documented a direct relationship between various corporate governance attributes and effective tax rates, moderating effect of other factors on this relationship has seldom been explored. Two of these factors that could have a moderating effect on the relationship between the two due to their tax treatment in tax computations are capital intensity and leverage. According to Pattiasina, Tammubua,

Numberi, Patiran and Temalagi (2019) management is usually keen to attain the desired compensation by improving the performance of the company. One of the ways management does this is by investing in fixed assets so as to enjoy depreciation deduction thereby lowering the company's tax burden. But the decision to invest in fixed assets usually requires approval from the board due to the huge capital outlay involved thereby impacting on tax strategy.

As Kraft (2014) observes a firm's financing choice plays a part in managing agency conflicts between shareholders and managers. Managers of corporations that have more debt in their capital structure are under strict monitoring owing to the strict debt covenants put in place by the debt holders. This limits the managers from engaging in rent extraction activities. As Hope *et al.* (2013) observe more leveraged firms are less likely to avoid corporate taxes because they might benefit from debt financing.

Corporate tax compliance is without a doubt, critical to any governments' fiscal policy. This is because most of the tax revenues are collected or paid by corporations (Joulfaian, 2000). As Crivelli *et al.* (2016) found out, developing countries tend to be more reliant on the corporate income tax as a share of all tax revenue than are higher income countries. ICPAK (2016) established that tax revenue accounts for over ninety per cent of Kenya's revenue portfolio with income tax identified as the major contributor to tax revenue accounting for over fourty five percent. These findings corroborate the earlier findings by Mutua (2012).

In the recent past, Kenya has witnessed a widening budget deficit and a ballooning public debt that has caused a lot of concern among policy makers and the public in general.

Central Bank of Kenya figures show that public debt has risen from 1.3 Trillion Kenya shillings to over 4.5 Trillion in the period 2011 to 2017. The same figures also indicate that budget deficit has grown from a low of 156 Billion Kenya shillings in 2011 to stand at a staggering 737 Billion in the year 2017 (Appendix 4 and 5). Moreover, Kenya Revenue Authority(KRA) has reported missed revenue targets by a cumulative figure of 185 Billion Kenya shillings in the period 2015/2016 to 2017/2018 financial years (KRA, 2018).

As has been discussed earlier, Corporation tax is an important source of revenue to any government. Past studies have shown that developing economies are more reliant on corporate income tax as a share of all tax revenue than are developed economies. In Kenya, income tax accounts for over 45% of the total government revenue collected with corporation tax constituting almost half of this figure (ICPAK, 2016 and Mutua, 2012).

Listed firms being among the largest companies in Kenya make a significant contribution to tax revenue. The government must therefore ensure it gets a steady and fair share of revenue from these taxpayers through the enactment of appropriate legal and regulatory framework to govern their taxation. Equally, Corporations have a keen interest in the corporate tax architecture in their areas of jurisdiction since it has a huge bearing on major corporate decisions.

The main focus of this study was therefore to investigate the impact of corporate governance on effective corporate tax rates. Specifically, the study investigated the direct impact of board size, board independence, board gender diversity and corporate ownership structure on effective tax rates among listed firms in Kenya. The study also

examined the moderating effect of capital intensity and leverage on the relationship between corporate governance and effective tax rates.

1.3 Statement of the Problem

Prior research has documented huge corporate tax losses globally as a result of corporate tax avoidance. Estimates from past studies for show that Kenya loses 122 billion Kenya shillings annually in corporation tax. This amount could play a significant role towards meeting the socio-political and economic goals enshrined in "Vision 2030", which is Kenya's economic blue print for transforming the country into a middle income economy by the year 2030. Also, if this lost revenue was collected it could go a long way in reducing the ever increasing budget deficits and the ballooning public debt in Kenya. Companies listed on the Nairobi Securities Exchange are among the largest companies in Kenya with a total market capitalization of over two Trillion Kenya shillings. What is not known is whether these companies pay their fair share of corporate taxes or are involved in excessive tax management practices at the expense of government revenue. Additionally, few studies if any, have documented the impact of corporate governance on the effective tax rates among the listed companies. Further, the moderating effect of leverage and capital intensity on the relationship between corporate governance and effective corporate tax rate has not been explored by prior studies. This study therefore attempts to fill this gap in the literature by using firms listed on the Nairobi Securities Exchange to investigate the impact of board characteristics' and ownership structure on effective corporate tax rates in Kenya.

1.4 General Objective

The main objective of the study was to investigate the impact of corporate governance on effective corporate tax rates among listed firms in Kenya.

1.5 Specific Objectives

Specifically, the study sought to:

1. Analyze the impact of board size on effective corporate tax rates among listed firms in Kenya.
2. Evaluate the impact of board independence on effective corporate tax rates among listed firms in Kenya.
3. Establish the impact of board gender diversity on effective corporate tax rates among listed firms in Kenya.
4. Examine the impact of corporate ownership structure on effective corporate tax rates among listed firms in Kenya.
5. Examine the moderating effect of capital intensity on the relationship between board size, board independence, board gender diversity, corporate ownership structure and effective corporate tax rates among listed firms in Kenya.
6. Examine the moderating effect of leverage on the relationship between board size, board independence, board gender diversity, corporate ownership structure and effective corporate tax rates among listed firms in Kenya.

1.6 Research Hypotheses

The following hypotheses were tested:

H_{O1}: Board size has no significant impact on effective corporate tax rates among listed firms in Kenya

H_{O2}: Board independence has no significant impact on effective corporate tax rates among listed firms in Kenya

H_{O3}: Board gender diversity has no significant impact on effective corporate tax rates among listed firms in Kenya

H_{O4}: Corporate ownership structure has no significant impact on effective corporate tax rates among listed firms in Kenya

H_{O5}: Capital intensity has no significant moderating effect on the relationship between:

H_{O5a}: Board size and effective corporate tax rates among listed firms in Kenya

H_{O5b}: Board independence and effective corporate tax rates among listed firms in Kenya

H_{O5c}: Board gender diversity and effective corporate tax rates among listed firms in Kenya

H_{O5d}: Corporate ownership structure and effective corporate tax rates among listed firms in Kenya

H_{O6}: Leverage has no significant moderating effect on the relationship between:

H_{O6a}: Board size and effective corporate tax rates among listed firms in Kenya

H_{O6b}: Board independence and effective corporate tax rates among listed firms in Kenya

H_{O6c}: Board gender diversity and effective corporate tax rates among listed firms in Kenya

H_{O6d}: Corporate ownership structure and effective corporate tax rates among listed firms in Kenya

1.7 Justification of the Study

Taxes from income of body corporates are an important source of revenue for any country. Every government should strive to ensure it collects adequate revenues to meet its budgetary obligations. Corporate taxes on the other hand, represent significant costs to corporations and therefore a motivation by these corporations to reduce their tax bill by lowering their effective tax rates. A reduction in the tax expense will enhance their after tax earnings and maximize shareholder wealth. This conflicting objective creates a potential conflict; on one hand firms want to minimize their tax burden while on the other hand, the government wants to maximize revenue collection.

This study is therefore justified on the following grounds: First, the huge corporate tax losses globally and especially in developing economies like Kenya calls for a re-examination of the corporate tax architecture with a view to minimizing further leakages.

Secondly, Kenya has in the recent past witnessed widening budget deficits and a ballooning public debt as a result of missed tax revenue targets. There is therefore a need to investigate the possible causes of inadequate revenue collections which this study attempts to do.

Thirdly, cut throat competition among businesses as a result of globalization has led to reduced earnings for many businesses which has forced them to institute cost cutting measures one of which is reduction of tax expense. This study will therefore be a valuable tool in the hands of corporations in achieving their objectives.

Finally, the NSE listed companies which are huge contributors to tax revenue have been under studied in the area of corporate governance and effective corporate tax rates. This study attempts to fill this gap.

1.8 Significance of the Study

The findings of this study are beneficial to governments around the world since they provide evidence that will inform policy development to help in better fiscal management of the economy.

Tax authorities are interested in maximizing revenue collections and thus will find the study useful in instituting appropriate measures, policies, and initiatives to address or seal loopholes exploited by firms to manipulate their effective corporate tax rates.

Capital Markets Authority as the regulator of listed firms will find the results of this study useful in the formulation of appropriate policies and laws to enhance corporate governance practices.

Since decisions regarding corporate governance and effective corporate tax rates affect vital corporate decisions, corporations will find this study useful in designing their tax management strategies so as to maximize the value of the firm.

Investors and shareholders will find the findings of this study useful in making investment decisions.

Academicians and other researchers will find this study useful as a point of reference. The findings will increase stock on the existing pool of theoretical and empirical knowledge on corporate governance and effective tax rates. Researchers can also use this study as a basis for further research in related field.

1.9 Scope of the Study

The study investigated the impact of board size, board independence, board gender diversity and corporate ownership structure on effective corporate tax rates among firms listed on the Nairobi Securities Exchange (NSE), Kenya for a period between 2011 and 2017. The period of seven years was considered ideal to take care of accruals and deferrals in income tax computation. Also, it is in this period that Kenya's public debt and budget deficits have grown rapidly as per Central Bank of Kenya figures.

1.10 Limitations of the Study

This study focused on NSE listed companies in Kenya. Restricting the study to publicly traded companies only excluded a significant part of taxpaying corporations that should be studied to obtain a complete picture of the subject under study. However, since listed firms are among the largest companies in Kenya and major corporate taxpayers, it is expected that the findings will still be useful to policy makers. Another limitation is that the study relied on tax information that is available in the publicly published financial statements which may be different from the actual tax return submitted to the tax authority. However, the use of publicly available tax information is still justified on the ground that it helps to paint a picture of the company's tax status in the public eye thereby portraying the practical relevance that an empirical research should achieve.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a detailed review of related literature. It starts by reviewing the empirical literature then discusses the theoretical framework which culminates in the identification of research gap and the development of conceptual framework.

2.2 Review of Related Literature

2.2.1 The Concept of Corporate Governance

The simplest and most concise definition of corporate governance was provided by the Cadbury Committee Report in 1992, which stated that corporate governance is the system by which companies are directed and controlled (Cadbury, 1992). While this definition appears simplistic, it offers an insight into the nature of corporate governance and the important role that leaders of corporations should play in coming up with effective practices. For most organizations, those leaders are the directors, who are tasked with developing strategies that enhance the interests of the owners (shareholders) and also take care of the interests of other stakeholders such as employees, suppliers, customers, financiers, regulators and the community at large.

According to Organization for Economic Co-operation and Development (OECD, 2015), "Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. The purpose of corporate governance is

to help build an environment of trust, transparency and accountability necessary for fostering long-term investment, financial stability and business integrity, thereby supporting stronger growth and more inclusive societies".

Corporate governance, according to the Capital Markets Authority (CMA, 2015) is defined as "the process and structures used to direct and manage business affairs of the company towards enhancing prosperity and corporate accounting with the ultimate objective of realizing shareholders long-term value while taking into account the interests of other stakeholders". According to Osebe and Chepkemoi (2016), corporate governance instills rules and policies that ensure the cohesiveness of an organization. It is meant to hold an organization accountable to its stakeholders while helping the organization stay away from legal, financial, and ethical pitfalls.

Evidence from Prior literature indicates that organizations with good corporate governance practices make a company not only attractive to investors and lenders but also more profitable (Barger and Lubrano, 2006). Black *et al.* (2006) in a study of corporate governance choices among Korean firms obtained results showing that well governed firms traded at a premium of 160 percent to poorly governed firms. Another study of S&P 500 firms by Deutsche Bank showed that companies with strong or improving corporate governance outperformed those with poor or deteriorating governance practices by about 19 percent over a two-year period(Grandmont *et al*.,2004)

The history of corporate governance can be traced from the industrial revolution in the nineteenth century. This was a period characterized by rapid expansion of industries. As the industries expanded they started facing governance challenges due to separation of

ownership and control. But it is in the 1930s during the US great depression that the issues of corporate governance gained prominence. This period was marked by massive corporate failures. The result was the establishment of the Security Exchange Commission (SEC) to provide a legal framework for management of corporations (Berle and Means, 1932).

Recent debate on corporate governance generally tends to make reference to principles raised in three documents published since 1990: "The Cadbury Committee report" (United Kingdom, 1992), "The Principles of Corporate Governance" (OECD, 1999, 2004 and 2015) and the "Sarbanes-Oxley Act" enacted in 2002 (United States, 2002). The Cadbury and OECD reports present guidelines around which organizations are required to operate to guarantee proper corporate governance. The Sarbanes-Oxley Act was aimed at legislating the various principles contained in the OECD and Cadbury reports to stem the wave of corporate failures witnessed in the early 2000s. These principles can be summarized under:

"Rights and equitable treatment of shareholders: Organizations should respect the rights of shareholders and help shareholders to exercise those rights. They can help shareholders exercise their rights by openly and effectively communicating information and by encouraging shareholders to participate in general meetings.

Interests of other stakeholders**:** Organizations should recognize that they have legal, contractual, social, and market driven obligations to non-shareholder stakeholders, including employees, investors, creditors, suppliers, local communities, customers, and policy makers.

Role and responsibilities of the board**:** The board needs sufficient relevant skills and understanding to review and challenge management performance. It also needs adequate size and appropriate levels of independence and commitment.

Integrity and ethical behavior: Integrity should be a fundamental requirement in choosing corporate officers and board members. Organizations should develop a code of conduct for their directors and executives that promotes ethical and responsible decision making.

Disclosure and transparency: Organizations should clarify and make publicly known the roles and responsibilities of board and management to provide stakeholders with a level of accountability. They should also implement procedures to independently verify and safeguard the integrity of the company's financial reporting. Disclosure of material matters concerning the organization should be timely and balanced to ensure that all investors have access to clear, factual information".

Corporate governance issues have not only been documented and addressed in developed economies but also in developing countries. Mangena and Chamisa (2008), report that South Africa was the pioneer country among the developing nations to come up with a code of corporate governance through the King Report of 1994. Further revisions on the 1994 code were done in 2002 and 2009 to address emerging issues. The South African code borrows extensively from the Cadbury Committee report of 1992.

In Kenya, listed firms are governed by corporate governance guidelines developed by the Capital Markets Authority. The key recommendations of the guidelines include " Separation of the roles of the chair person (who must be an independent NED) and that of

the CEO; An adequate number of board members with a mix of skills and background; A unitary board structure with a balance between executive and non-executive directors (NEDs) preferably with a majority of NEDs, of which a majority number should be independent; and Formation of at least the audit and remuneration committees dominated and shared by independent NEDs" (CMA, 2015).

Previously, the CMA guidelines adopted the "Comply or Explain" approach requiring listed companies to state in their annual reports if they have complied with the guidelines or not stating reasons for non-compliance and what they are doing to ensure compliance (CMA, 2002). However, due to implementation weaknesses noted in the 2002 guidelines that was marked by a number of high profile corporate failures, CMA reviewed the guidelines and issued new guidelines in 2015 called "Code of Corporate Governance Practices for Issuers of Securities to the Public" (the 2015 Code) to replace the 2002 guidelines. The 2015 code adopted "Apply or Explain" approach making it principle-based with few mandatory provisions that are enumerated in the "Capital Markets (Securities) (Public Offers, Listing and Disclosures) Regulations, 2016".

2.2.2 The Concept of Effective Corporate Tax Rates

Corporate tax is an important source of revenue to governments around the world. This is the reason governments set statutory rates at which all taxpayers are expected to pay their taxes. Tax rates are an important component of any tax system. A tax rate is generally defined as the ratio (usually expressed as a percentage) at which an individual person or a body corporate is taxed. Tax rates are usually either statutory tax rate or effective tax rate.

The statutory tax rate is the legally imposed rate typically contained in a tax statute. Although this measure fails to take into account other relevant information such as tax credits, deductions and accruals which sffects tax liability, it still has an impact on important company decisions. One such decision is where to locate profits. Research has shown that Corporations usually have a motivation to locate their profits in low tax jurisdiction rather than high tax jurisdictions (Graham, 2003).

The effective tax rate (ETR) is basically the average rate at which an individual or corporation is taxed. For a corporation, ETR is the proportion of tax paid/payable to the pretax income. It is considered a correct measure of tax burden since it takes into account the statutory tax rate, credits and other adjustments that affect a corporation's tax liability (Salihu *et al.*, 2013).

Prior studies have documented several variants in the effective tax rate (Salihu *et al.*, 2013). They include accounting ETR also known as GAAP ETR which is computed by dividing total tax expense by pretax income. There is also current ETR that is computed as a ratio of the current-year tax expense to the profit before tax. Cash ETR is another form that has been reported in the literature. It is the proportion of cash tax paid to the pretax income. These measures are applied by researchers depending on their research objectives (Hanlon and Heitzman, 2010).

The information used for calculating effective tax rates may be collected from either the income tax returns filed with the tax authorities or from financial statements contained in the annual reports of the company (Salihu *et al.*, 2013). Information from the two sources is usually not the same due to differences in the objectives and laws governing financial

and tax accounting. Although tax returns provide the most accurate information about a company's tax liability, accessibility to those returns is limited to a few people. Consequently, many researchers use financial statements' as a source of information in computing ETRs (Desai and Dharmapala, 2008). The most obvious advantage of using financial statements is that it paints a picture of the company's tax status in the public eye thereby portraying the practical relevance that an empirical research should achieve (Hanlon and Heitzman, 2010) Also, the use of publicly available financial statements facilitates verifiability and replicability of such studies. As such, numerous studies in both advanced and developing countries have used the publicly available financial statements in their study of effective corporate tax rates.

Research has shown that not only have statutory rates declined over the years, the same has happened for effective tax rates (Pomerleau and Jahnsen, 2017 and GAO, 2008). This has been attributed to tax competition where countries use the tax rates as a way of not only attracting new foreign direct investments but also as a way of promoting businesses generally. It has also been observed that the rates have gone down due to expansion in the tax base. For corporations, the drive to lower effective tax rates has been occasioned by cut throat competition among businesses as a result of globalization (Kowano and Slemrod, 2016).

Corporate tax rate is an important tool of fiscal management. Governments use it to achieve a number of policy objectives. For instance, it can set a particular rate to attract and promote investments in the country, raise more revenue or redistribute income.

Therefore studies concerning tax rates are useful for regulators and policy makers since they impact on the economy as a whole (Ribeiro *et al.,* 2015)

Corporate tax rate has also been found to influence a majority of corporate decisions. Apart from impacting on business location decisions, corporate tax rates influence capital structure decisions, capital budgeting decisions, and dividend policy among other corporate decisions. (Ribeiro *et al.,* 2015; Graham, Hanlon, Shelvin and Shroff, 2017)

Pomerleau and Jahnsen (2017) obtained results showing that corporate taxes influence the choice of business location. They opine that corporations will generally locate their businesses in a country that has lower effective tax rate due to higher after tax earnings. This is consistent with shareholder wealth maximization objective.

As Graham (2003) notes, effective tax rates affect capital structure decisions. Studies have shown that the choice of a particular source of finance is influenced by its tax treatment (Ribeiro *et al*., 2015). For instance a firm may decide to use equity financing because it is cheap but investors stand to suffer reduced earnings because dividends are not tax deductible. The deductibility of interest expense may drive a firm to utilize more debt financing compared to equity in its capital structure. Kraft (2014) also observes that a firm's financing choice plays a part in managing agency conflicts between shareholders and managers. Managers of corporations that have more debt in their capital structure are under strict monitoring owing to the strict debt covenants put in place by the debt holders. This limits the managers from engaging in rent extraction activities.

Capital budgeting refers to the decision to commit the company's current funds in viable projects for long term returns. Managers are required to evaluate and choose those projects that guarantee positive returns in the long run. By doing this, shareholders wealth will be maximized. Corporate tax rate is an important factor that is considered when appraising investment projects (Graham *et al*., 2017). Tax expense will affect the after-tax earnings thereby affecting shareholders earnings and the value of the firm in general. Managers will therefore be inclined towards selecting those projects with less tax expense or rather lower effective tax rates.

Literature has shown that dividend decisions are important part of a firm's strategic financing decision. Management must therefore make a choice on how much of the earnings to declare as dividends or retain in the company. For instance, payment of high dividends means less retained earnings which may force the firm to go to the market to borrow for investment purposes. This will increase its gearing level. Management therefore requires formulating an optimal dividend policy which will maximize the value of the firm. Payment of dividends has also been documented as a way of resolving agency problem (Graham, 2003; Graham *et al*., 2017). These studies advocate for payment of high dividends meaning low retained earnings. This may necessitate managers to call for fresh equity issue that will expose the managers financing decision to providers of capital who will demand full disclosure of the firms operations. Full disclosure prevents management from engaging in opaque activities thus aligning their interest to that of the owners and other stakeholders. Since dividends are distributed from the after-tax income, the amount of income tax expense is thus an important determinant of the dividends payable which ultimately affects the value of the firm.

2.2.3 Corporate Tax System in Kenya

The Kenya Revenue Authority established under section 3(1) of the Kenya Revenue Authority Act, CAP 469 laws of Kenya is the body mandated under section 5 of that Act to administer tax laws and to collect taxes in Kenya.

The Income Tax Act, CAP 470 laws of Kenya is the law that governs the charge, assessment and collection of income tax in Kenya. Section 3(1) of the Act is the charging section and provides that "a tax to be known as income tax shall be charged for each year of income upon all the income of a person, whether resident or non-resident, which accrued in or was derived from Kenya". A person in this context means either an individual or body corporate.

The corporate tax is computed on the taxable income of a company, having deducted expenses which are "wholly and exclusively incurred in the production of that income". Resident companies are taxable in Kenya on income accrued or derived from Kenya. Resident companies with business activities outside Kenya are also taxed on income derived from business activities outside of Kenya. Non-resident companies on the other hand, are subject to Kenya corporate income tax (CIT) only on the trading profits attributable to a Kenyan permanent establishment (Income Tax Act, 2017).

One of the tax deductible expenses contained in the Income Tax Act is interest paid on borrowed money. The Act also allows corporations to deduct from business profits certain capital expenditures contained in the second schedule to the Act when

determining taxable income. The purpose for these deductions is not only to promote investment but also to facilitate replacement of these assets (Income Tax Act, 2017).

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The various tax rates are contained in the third schedule to the Income Tax Act. For resident corporations in Kenya, the applicable corporate tax rate is 30%. For non-resident corporations with a permanent establishment in Kenya, the applicable corporate tax rate is 37.5%.

To encourage the raising of capital in capital markets, there are preferential tax rates applicable to newly listed companies whose corporate tax rates range from 20% to 27% for a period ranging from three to five years depending on the percentage of listed shares made available to the public through the Nairobi Securities Exchange: A 20% rate if 40% of issued share capital is listed (applicable for five-year period); 25% rate if 30% of issued share capital is listed (applicable for five-year period) and 27% rate if 20% of issued share capital is listed (applicable for three-year period) (Income Tax Act, 2017).

Companies operating within Export Processing Zones ("**EPZ**") enjoy the following tax incentives: A 10-year corporate tax holiday giving exemption from corporate tax for the first 10 years of trading; a lower corporate tax of 25% for the 10 subsequent years; Exemptions from all withholding tax on dividends and other payments to non-residents during the first 10 years of trading (Income Tax Act, 2017).

Effective from 1st January 2016, the Income Tax Act allows a lower corporate tax rate of 10%, applicable for companies under the Special Economic Zones regime ("**SEZ**") for the first 10 years, and a 15% rate for the subsequent 10 years.

According to the Income Tax Act (2017), companies with taxable income are required to pay installment tax in the fourth, sixth, ninth and twelfth month of their accounting year and the balance of tax, if any, by the last day of the fourth month following the end of the accounting period. The income tax return must be filed by the last day of the sixth month following the end of the accounting period. The Tax Procedures Act provides for heavy penalties and late payment interest for non-compliant taxpayers.

ICPAK (2016) in a study of Kenya's revenue analysis for the period between 2010 and 2015 showed that corporation tax contributes over 20% to the total tax revenue. The study observes that the figure could be much higher if the tax base was to be expanded and the entire Income Tax Act overhauled so as to realize the full potential of this tax head.

2.2.4 Corporate Governance and Effective Tax Rates

One of the most important corporate governance mechanisms is the board of directors. Being agents of shareholders, they are expected to take actions that contribute to the maximization of shareholder wealth (Adams *et al.,* 2010). Prior literature has postulated that it is the board of directors that has powers to recruit, reward and fire managers and also to monitor and approve vital corporate decisions. One of the major corporate decisions is tax strategy. Consequently, the board as a representative of the 'owners' of

the firm, has a say in decisions regarding effective tax rates (Shleifer and Vishny, 1997 and Fama and Jensen, 1983).

As it was noted by Hanlon and Heitzman (2010), tax aggressiveness hurts the reputation of the company resulting in the decrease in the value of the firm leading to a decline in the shareholders' return on investment. Hanlon and Heitzman (2010) argue that it is the board of directors that must act to protect the interest of shareholders. Apart from reputational costs associated with tax avoidance, literature has identified other costs such as political costs and marginal costs (Chen *et al.,* 2010). The marginal costs include potential penalties and fines that may imposed by tax authorities. As Desai and Dharmpala (2006) note, managers may mask their rent extraction activities by engaging in tax aggressiveness thereby creating agency costs causing investors to discount the share prices of the company.

Ribeiro *et al*. (2015) observe that it is the board of directors that has a responsibility to develop policy based governance systems and framework to influence management actions. Because of this role, they argue that the board can on one hand contribute to promotion of shareholders rights and interests and on the other hand, provide an opportunity for managerial opportunism depending on the level of power wielded by management team.

Hanlon and Heitzman (2010) emphasize the agency theory based argumentation that the reaction of firms on tax matters depends on firm-level governance structures. In the context of the institutional ownership literature, Minnick and Noga (2010) obtained results showing a positive relationship between the two. Contrarily, Khurana and Moser

(2012) suggest a negative relation. Huseynov and Klamm. (2012) posit that increased corporate governance causes the change in effective tax rates.

In the wider corporate governance literature, Desai and Dharmapala (2006) established that lower effective tax rates causes agency costs. Similarly, the paper by Armstrong *et al.* (2015) emphasizes the role of shareholder preferences regarding effective tax rates and explains how governance mechanisms can influence the relation in either direction.

This mixed and inconclusive relationship gives reason to seek further empirical evidence on the relationship between the two and hence this study. In the following sections, the study discusses the empirical literature related to the four corporate governance variables (board size, board independence, board gender diversity and corporate ownership structure) and how they interact with effective corporate tax rates. This will culminate into hypothesis development.

2.2.5 Board Size and Effective Corporate Tax Rates

According to Jensen (1993) the size of the board determines its effectiveness noting that board size influences a company's management policy. He opines that small boards perform a better controlling function than large boards which acts as a curb on managerial opportunism. Similarly, Kaymak and Bektas (2008) while supporting smaller boards for making good quality decisions, castigate larger boards for being difficult to control by the chairperson leading to poor quality decisions. Ribeiro *et al.* (2015) observe that decision making is more difficult under large boards due to difficulty in achieving consensus which may derail the implementation of vital corporate decisions. A

study by Yermack (1996) established that companies with smaller boards have higher market value and concluded that smaller boards make good quality decisions that enhance the value of the firm.

However, other researchers argue that larger boards perform better than smaller boards. Barnhart and Rosenstein (1998) and Dalton and Dalton (2005) justified this by stating that larger boards do not only offer a multitude of opinions that enrich quality of decisions but also increase board diversity in terms of professional backgrounds, experience, gender and nationalities. Pearce and Zahara (1991) in supporting larger boards argue that firms benefit from better advice on strategic decisions due to a variety of skills afforded by these large boards.

For Minnick and Noga (2010), smaller boards contribute to good tax management practices compared to large boards, a fact they attribute to ease in decision making. This ease in decision making by small boards could deny managers an opportunity to mask their rent extraction activities by engaging in excessive tax management practices.

Lanis and Richardson (2011) in a study of the effect of board of director composition on corporate tax aggressiveness found that the level of tax management is significantly affected by board size. Păunescu,Vintila and Gherghina, (2016) in a study of the link between corporate governance characteristics and effective tax rates found a negative and significant relationship between the two. This study was based on 50 firms listed on the NASDAQ and component of Dow Jones Index and was focused on companies in the technology area over the period 2000-2013. By limiting the sample to firms in the

technology area alone, the study lacks variety which affects validity of the reported results.

However, Aliani and Zarai (2012a) did not find significant relationship between board size and effective tax rates. Likewise, Khaoula and Ali (2012) using a sample of 300 S&P firms for periods 1996-2009 found insignificant relationship between the two. This may be attributed to failure by boards to effectively monitor management thereby allowing management to take decisions they deem fit.

Ribeiro *et al.* (2015) observed that large boards are related to high effective corporate tax rates. This can be explained by the fact that as the size of the board increases, it becomes difficult to arrive at a consensus due to varying opinions. This makes it difficult to execute vital corporate decisions such as tax planning.

Pratama (2017) conducted a study among listed Indonesian companies and obtained results indicating a significant negative relationship between the size of the board and effective tax rates implying the higher the number of directors, the lower the effective tax rate. He attributes this to difficulty in arriving at a consensus thus allowing management to take decisions that benefit themselves. Similarly, Khamoussi, Neifar and Abdelaziz (2016) found a negative and significant relationship between board size and effective tax rates among American firms listed on the NASDAQ 100.

From the foregoing, the first hypothesis emerges as follows:

Ha_1: *Board size has significant impact on effective corporate tax rates among listed firms in Kenya*

2.2.6 Board Independence and Effective Corporate Tax Rates

From past studies, opinion is divided on the role played by independent directors in monitoring management. One school of thought led by Ozkan and Ozkan (2004) and Florackis (2008) argue that independent directors are better monitors of management team. They studies further state that non-executive directors do not only improve decision making process but also defend shareholders' interest. As Fama and Jensen (1983) observe, independent directors help in reducing agency problems by acting as mediators of internal managers' disagreements and by controlling competition among top corporate managers. They assert that since compensation for outside directors is not pegged on performance, they are likely to monitor management more effectively. Armstrong *et al.* (2015) also advocate for boards with a higher proportion of independent directors arguing that they perform a better monitoring function since board members having affiliations with the company might protect their own interests.

A counter argument presented by Florackis (2008) states that independent directors have little knowledge about the company and usually favour non-confrontational approach instead of actively monitoring the managers. The study advocates for a large number of inside directors on the board. This view has been opposed viciously by authors like Lanis and Richardson (2011) who argue that boards dominated by inside directors are likely to ignore interest of shareholders and instead pursue their own private benefits. This view is supported by Wahab and Holland (2012) who observe that directors from outside are more effective in mitigating agency conflicts because of their independence, experience and professional expertise.

Previous studies have returned conflicting findings on the effect of board independence on effective tax rates. For instance, Khaoula and Ali (2012) in a study of 300 S&P firms for periods 1996-2009 obtained results showing that board independence improves tax practices. In other words board independence increases effective tax rates. This could be attributed to better monitoring by non-executive directors which deny managers the opportunity to engage in opaque tax avoidance activities.

Pratama (2017) in a study of listed Indonesian companies found that board independence has no significant impact on effective tax rates. The study attributed this to a low percentage of independent directors which makes it difficult for them to conduct proper monitoring.

Zhou (2011) opines that companies with more independent directors are less likely to be affected by tax aggressiveness. He argues that outside directors shield shareholders from managerial opportunism since they represent shareholders interest. Consequently, companies with a high number of non-executive directors would manifest higher rates of effective tax rates.

Lanis and Richardson (2011) in a study conducted on 32 corporations obtained results showing that the number of independent directors has a negative but significant relationship with the bold tax scheme. In other words, the more the number of independent members of board of directors, the less the firm will turn to activities aimed at lowering the effective tax rates. Although this study has been criticized for using a small sample, it nonetheless offers an insight into the relationship between board independence and effective tax rates.

Ribeiro *et al.* (2015) in analyzing the determinants of effective tax rate using firm characteristics and corporate governance obtained results showing a positive and significant relationship between the number of independent directors and the effective corporate tax rate (ECTR).

Oyenike *et al.* (2016) in their study of 11 listed banks in Nigeria obtained results showing a significant relationship between board independence and tax aggressiveness. This implies that independent directors sitting on the board paly a big role in tax decisions taken by the company.

Accordingly, hypothesis two is formulated as follows:

Ha_2: *Board independence has significant impact on effective corporate tax rates among listed firms in Kenya*

2.2.7 Board Gender Diversity and Effective Corporate Tax Rates

Past studies have shown that female directors exhibit greater risk aversion and are usually more sensitive to ethical issues. Female directors have also been found to have a better board meetings attendance record than their male counterparts (Bernardi and Arnold, 1997; Powell and Ansic, 1997; Croson and Gneezy, 2008; Adams and Ferreia, 2009). These virtues have been found by various researchers to have an impact on tax decisions.

Kastlunger *et al.* (2010) state that women play an important role in tax matters. They argue that interpretations of tax laws and regulations differ depending on gender traits. They suppose further that women manifest higher levels of tax compliance than men.

Similarly, Aliani, Mhamid and Zarai (2011), report that the presence of female board members influences the tax planning strategy within the company.

In a study conducted by Oyenike *et al.* (2016) on listed banks in Nigeria in the period between 2012-2014 it was found that although the presence of women on the board is positively related to effective tax rates, the effect is not significant. This is due to the presence of a few women on these boards that hinder them from effectively discharging their role.

Khaoula and Ali (2012) obtained results showing that presence of female directors on the board has no significant effect on effective tax rates, a factor they attributed to low percentage of women on these boards. Equally, Aliani and Zarai (2012a) did not find the presence of women on the board to have a significant impact on tax planning among American firms. This could be attributed to low percentage of female directors which hampers their influence on board decisions.

Aliani *et al*. (2011) found existence of a positive relationship between board gender diversity and effective tax rates. The study observe in their conclusion that female directors are usually against strategies aimed at lowering effective tax rates within the firm thus work towards increasing tax compliance.

Francis *et al.* (2014) conducted a study involving S&P 1500 firms to find out if female Chief Finance Officers (CFOs) are less tax aggressive. They obtained results showing that female CFOs exhibit lower tax avoidance tendencies compared to their male counterparts. They also compared male-to-female CFO turnover and obtained similar

results where there was a transition from a male to a female CFO. This implies that the existence of female directors on a firm's board plays a role in tax decisions.

Boussaidi and Hamed (2015) in a study of 39 Tunisian listed firms obtained results showing a significant and negative link between female directors and tax aggressive actions. They conclude that a higher proportion of women on the board increase the effective corporate tax rate. Similarly, Zemzem and Ftouhi (2013) reported a significant influence on tax aggressive activities by female directors among SBF 120 Index French companies.

Therefore, the third hypothesis for this study is as follows:

Ha_3: *Board gender diversity has significant impact on effective corporate tax rates among listed firms in Kenya*

2.2.8 Corporate Ownership Structure and Effective Corporate Tax Rates

Corporate ownership structure has been found to be one of the main corporate governance mechanisms that is usually overlooked in the corporate governance literature. Many scholars have identified and categorized shareholder structures as either dispersed or concentrated. Dispersed ownership structure is where the company is owned by many but small shareholders while concentrated ownership is where a company is owned by few but large shareholders who have controlling stakes in the firm. Research has shown that dispersed ownership is prevalent among listed firms in the Unites States and United Kingdom while concentrated ownership is more frequent in the rest of Continental Europe (La Porta, López-de-Silanes and Shleifer ,1999).

The nature of ownership structure has been found to have an impact on the way organizations are run. While firms with concentrated ownership structures are subject to close and strict control, shareholders in firms with dispersed ownership structure do not exercise strict and close control. The possible explanation for this is that the large shareholders are faced with higher risk due to the magnitude of their investment and therefore would like to monitor company operations closely. For small shareholders, the risk they face is small due to diversification (Volpin, 2007).

While ownership concentration is viewed as a way to resolve agency conflict between shareholders and managers, it gives birth to another type of agency conflict: that between the majority and minority shareholders (Florackis, 2008; Desai and Dharmapala, 2008). As Fan and Wong (2002) point out, concentrated ownership provides opportunities and incentives for controlling shareholders to expropriate company resources to the detriment of outside minority shareholders. The study concludes that companies with concentrated ownership have greater motivation to reduce the effective corporate tax rates and will therefore induce managers to act in this way. But as Chen *et al.* (2010) note, this may not always be true. Majority shareholders also face high risks arising from engaging in aggressive tax management activities. The study cites potential penalties from tax authorities and reputational damage which would affect the long term survival of the firm.

The few studies that have been done to show the impact of corporate ownership structure on effective tax rates have returned inconclusive and mixed results. For instance Bradshaw, Liao and Ma (2014) using a sample drawn from publicly traded companies in

China found that state owned enterprises exhibit effective tax rates that are significantly higher than those of non-state owned enterprises. These findings suggest that state owned enterprises make tax decisions favourable to the controlling shareholder but costly to the minority shareholders.

Also, Salaudeen and Ejeh (2018) in a study titled "Equity ownership structure and corporate tax aggressiveness" among listed Nigerian firms established a positive but insignificant relationship between the two. The possible explanation for the insignificant results is that majority shareholders may not be effectively monitoring management to ensure they make decisions that are in the interest of majority shareholders.

Studies by Boussaidi and Hamed(2015) and Li (2014) reported a positive and significant relationship between ownership concentration and effective tax rate. This can be attributed to the fact that the presence of high ownership concentration is likely to make shareholders to closely monitor management due to the huge risk they bear. This close supervision denies managers the opportunity to mask their rent extraction activities resulting in higher effective tax rates.

Chen *et al.* (2010) found out that family ownership can influence company's tax policy. The study concluded that companies with family ownership adopt less bold policies about tax. These findings show that family owners are inclined to prevent tax management in order to avoid reduction of company's share value derived from minority of shareholders' concern about risks of tax activities.

A study by Mahenthiran and Kasipillai (2011) on the influence of ownership structure on tax policy among listed Malaysian firms, obtained results showing a negative and insignificant relationship between ownership structure and effective tax rate. While a sample of 345 firms out of a total of 577 listed companies may be considered reasonable, the two year period the study covered limits the validity of the findings.

In support of Adhikari, Derashid and Zhang (2006) who posit that the true impact of corporate ownership structure on effective tax rates has not been investigated conclusively especially in developing economies there is need to conduct further research in this area.

From the forgoing literature, the fourth hypothesis is:

Ha_4: *Corporate ownership structure has significant impact on effective corporate tax rates among listed firms in Kenya*

2.2.9 Capital Intensity, Corporate Governance and Effective Tax Rates

Capital intensity generally means the extent to which the company has invested in fixed assets. It refers to the proportion of property, plant and equipment to the total asset figure. Decisions to invest in fixed assets usually require approval from the board of directors due to the huge capital outlay required (Graham, 2003). This means that the board has a say on the level of investment in fixed assets thereby impacting on tax payable since depreciation on these assets is usually a tax deductible item. Despite this fact, the moderating effect of capital intensity on the relationship between corporate governance

and effective corporate tax rate has not been explored hitherto. However, past studies have documented a relationship between capital intensity and effective corporate tax rate.

Pattiasina *et al.,* (2019) observe that management is usually keen to attain the desired compensation by improving the performance of the company. One of the ways management does this is by investing in fixed assets so as to enjoy depreciation deduction thereby lowering the company's tax burden.

Companies that are more capital intensive have been found to benefit more from depreciation deductibility resulting in lower effective tax rates. Previous studies like Derashid and Zhang, (2003); Adhikari *et al*., (2005); and Chen *et al*. (2010) have confirmed this relationship. Gupta and Newberry (1997) and Derashid and Zhang (2003) also report a negative association between capital intensity and effective tax rates. This variable is thus included to test for its moderating effect on the relationship between corporate governance and effective corporate tax rates.

From the forgoing literature, the fifth hypothesis is:

Ha_5: *Capital intensity has a significant moderating effect on the relationship between corporate governance and effective corporate tax rates among listed firms in Kenya*

2.2.10 Leverage, Corporate Governance and Effective Corporate Tax Rates

Leverage has been variously described by different authors. It generally means the extent to which a company is using borrowed money. In this study, leverage refers to the ratio of total debt to total equity. As Kraft (2014) observes a firm's financing choice plays a part in managing agency conflicts between shareholders and managers. Managers of

corporations that have more debt in their capital structure are under strict monitoring owing to the strict debt covenants put in place by the debt holders. This limits managers from engaging in rent extraction activities. As Hope *et al.,* (2013) observe, firms with higher leverage ratios are less likely to avoid corporate taxes because they might benefit from debt financing.

While limited studies have specifically investigated the moderating effect of leverage on the relationship between corporate governance and effective tax rates, prior studies have documented the existence of an association between leverage and effective tax rates. A review of some of these studies follows.

Minnick and Noga (2010) established a significant relationship between leverage and effective tax rate. They opine that companies with a high leverage ratio will use the interest expense incurred on the debt to lower their corporation tax payable since interest expense is usually a tax deductible item.

Richardson and Lanis (2007) and Kraft (2014) also obtained results showing a significant negative relationship between leverage and effective tax rates. They study argues that managers of highly leveraged firms are usually under strict monitoring by financiers thus preventing them from taking decisions that have the sole purpose of extracting private gains. Therefore, more leveraged firms will be expected to exhibit lower effective tax rates.

Rani, Susyeto and Faudah (2018) in a study of the effects of corporate characteristics on tax avoidance among Indonesian firms obtained results showing a positive relationship

between leverage and effective tax rate. They argue that companies with high leverage ratios will aim at reducing tax avoidance activities so as to portray a positive picture in the eyes of debt providers due to strict debt covenants.

From the foregoing, the sixth hypothesis emerges as follows:

Ha_6: *Leverage has a significant moderating effect on the relationship between corporate governance and effective corporate tax rates among listed firms in Kenya*

2.3 Theoretical Framework

Although the recent past has witnessed an upsurge of studies on corporate governance and effective tax rates, there is yet to be established a theoretical framework that provides a full explanation of the relationship between the two. The most common theories in corporate governance circles include agency theory, stakeholder theory, stewardship theory, resource dependence theory and signaling theory (Eng and Mak, 2003).

Because of inadequacies inherent in each of these theories, there have been calls to use a mix of theories to obtain greater understanding of the subject under study (Roberts, McNulty and Stiles, 2005; Ees, Gabrielsson and Morton, 2009; Chen and Roberts, 2010). Consequently, in this study Agency theory and stakeholder theory were both used to provide the theoretical framework. A discussion of the two follows.

2.3.1 Agency Theory

Jensen and Meckling developed this theory in 1976. The essence of this theory is that in large corporations, there is usually a separation of ownership from management. This is

because not all shareholders may be available to run the company and even if they were, there large numbers could hinder them from running the company effectively. They therefore hire persons to help them run the business on their behalf. Thus, their exists an agency relationship where the shareholders are the principals and the managers are the agents (Jensen and Meckling, 1976)

It is expected that managers being the hired agents would take those decisions and actions that are in the best interest of their principals which is to maximize the shareholders wealth. In practice however, managers may pursue their own self-interest at the expense of shareholders. This creates what is known as agency conflict or agency problem (Fama and Jensen, 1983).

Literature has documented several ways by which managers may pursue their own personal interests at the cost of shareholders interest. First, managers may undertake low risk projects leading to lower returns for shareholders. They undertake low risk projects because of the fear to lose their jobs and reputation that may come with undertaking high risk projects (Fama and Jensen, 1983 and Eisenhardt, 1989).

Secondly, while managers are usually interested in short term success, shareholders are usually mindful of the long term success of the business. Managers might therefore undertake projects that give them instant success and fame which may not be sustainable in the long-run. This is against the shareholder wealth maximization objective (Fama and Jensen, 1983 and Eisenhardt, 1989).

Thirdly, Managers may have been hired on fixed term contract with fixed salaries and allowances. This may not motivate them to expend much time and effort in maximizing the value of the firm. They may engage in other self gratifying activities such as serving on boards of other companies, engaging in leisure activities such as golfing and holidaying (Pandey, 2010).

Fourthly, Managers may use company's resources on activities that benefit them more than the shareholders. For instance, they may insist on having huge lavish offices, high end vehicles, several personal assistants, and luxurious houses. All these expenditure lower the net earnings of the shareholders (Pandey, 2010).

Lastly, managers may fail to disclose all the pertinent information about the business to investors. Sometimes they might fail to release bad news to them in fear of reprisals. This may eventually work at the detriment of the company because the lack of full disclosure may leave the investors unsure of the business thus raising the cost of capital. This will lower the value of the firm (Pandey, 2010).

To manage this conflict, shareholders are compelled to incur what is known as agency costs (Jensen and Meckling, 1976 and Craig, 2010). These are costs incurred for the purpose of monitoring managers and to align their interests with those of the shareholders. One of the ways this is done is by linking managers' rewards to shareholder wealth improvements. This is done by granting managers share options where they are allowed to own a piece of the company by purchasing company shares at a favourable price. Since managers will become part owners of the business they might be motivated

to work towards enhancing the firm's value even though this comes at a cost to shareholders.

Secondly, shareholders incur monitoring costs. This comes in different forms. For instance, shareholders hire external auditors to review the operations of the business. They may also invest in a strict internal control system. All these costs are incurred to achieve goal congruence between managers and shareholders (Fama and Jensen, 1983 and Eisenhardt, 1989).

Another way to manage agency problem is by instituting corporate governance guidelines. A code of conduct for managers and other top executives prescribes certain actions and activities that are aimed at maximizing shareholders wealth. Shareholders will have to shoulder the cost of instituting such mechanisms and ensure total compliance (Fama and Jensen, 1983 and Eisenhardt, 1989).

The mechanism shareholders use to manage the inherent conflict between managers and shareholders is the board of directors (Fama and Jensen, 1983 and Eisenhardt, 1989). The board does this by playing both advisory and monitoring role. The effectiveness of the board to play these roles and therefore guarantee shareholders maximum benefits is influenced by several factors including the size of the board, board independence, board diversity in terms of gender and skill mix et citra. For instance, while small boards may facilitate faster decision making, they may at the same time lack the necessary skill set to effectively monitor management. Studies have also shown that independent directors perform better monitoring of management due to their impartiality. Likewise female directors have been found to exercise better monitoring role than their male counterparts.

While the board is generally expected to take decisions that are in the best interest of all shareholders, this may not always be the case depending with the nature of ownership structure. This may lead to another agency problem-that of majority and minority shareholders. Since majority shareholders monitor company operations closely, they are likely to use their position to expropriate company resources at the expense of minority shareholders. Minority shareholders in this case may also be forced to incur additional cost to militate this conflict (Shleifer and Vishney, 1997).

The relevance of the Agency Theory in explaining the relationship between corporate governance mechanisms and effective corporate tax rates is best seen in the study conducted by Desai and Dharmapala (2006) in which they found that managers may use effective tax rates to mask their rent extraction activities. They argue that shareholders should discourage tax aggressiveness as part of managing agency problem. Similarly, Desai *et al*. (2007) observe that opportunistic managers usually structure the company in such a way as to reduce corporate taxes for their private gain.

While it is expected that shareholders will benefit from enhanced after tax cash from tax avoidance activities, this may not be true as the extra cash could in fact go towards paying bonuses to managers. Equally, the potential penalty by tax authorities for tax aggressiveness may wipe away the benefits of lower effective tax rates. Moreover the company may suffer reputational and legitimacy damage resulting in the loss of profits and drop in share prices (Scholes, Wolfson, Erickson, Maydew &Shevlin, 2005 and Slemrod, 2004).

Research has shown that tax aggressiveness does not necessarily benefit shareholders. Yeung (2010) cites the famous Enron case in the United States where the corporation was so involved in reduction of effective tax rates that it eventually collapsed leaving shareholders with a huge loss of investment amounting to 74 billion US Dollars. In this particular case, the tax department had been turned into a business department with an annual revenue target. All the while the top managers were receiving huge bonuses for their perceived good performance.

Bauman and Schadelwald (2001) found out that those managers who reduce the effective corporate tax rates are usually compensated by shareholders depending with the level of tax liabilities they have reduced. Armstrong *et al*. (2015) also note that agency problem makes managers engage in activities aimed at reducing the ECTR with the aim of showing a positive image to shareholders in the short run ignoring the firm's long term performance. They recommend the presence of independent directors with developed financial expertise as a way of reducing agency problems.

As Florackis (2008) observes, ownership concentration can be used to reduce agency problems. He points out that shareholders with a small stake in the company have little incentive to monitor management as opposed to those with significant stakes who have a keen interest in active and effective monitoring of managers. According to Ozkan and Ozkan (2004) it is this active monitoring that helps in refraining managerial discretion thereby mitigating agency conflicts between shareholders and management. But an attempt to use ownership concentration as a way to solve agency problem can give rise to another agency conflict, that of majority and minority shareholders. Majority

shareholders may use their power and influence to engage in rent extraction activities at the detriment of minority shareholders (Shleifer and Vishney, 1997). As Florackis (2008) argues majority shareholders will benefit from the advantage of reducing the effective tax rate and will require management to fulfill this task but they will actively monitor the process. However, as Chen *et al*. (2010) observe it is the large shareholders that will suffer the most in terms of potential penalties and reputational costs associated with tax aggressiveness.

The board of directors is therefore expected to play its role effectively by doing a cost-benefit analysis of activities aimed at reducing effective tax rates before approving or rejecting them. This will go a long way in protecting shareholders interest hence maximizing the value of the firm. How well the board executes this mandate will to a large extent depend on its composition in terms of size, independence and gender diversity.

Agency Theory, however, does not fully explain the relationship between corporate governance and effective tax rates because its focus is mainly on the relationship between managers and shareholders. It fails to factor in other stakeholders who may influence decisions regarding effective tax rates. This problem is solved by the stakeholder theory that is discussed next.

2.3.2 The Stakeholder Theory

Freeman (1984) in his seminal work was the originator of the stakeholder theory. This theory is premised on the idea that the most important duty of managers is to maximize

the total wealth of all the stakeholders of the firm and not only that of the shareholders. He argues that a company's success depends on its ability to balance the diverse interests of its stakeholders. Hence corporate governance efforts are intended to meet the various needs of these stakeholders.

According to Freeman *et al.* (2011) a stakeholder is an individual, group or entity that can influence or be influenced by the achievement of organizational goals. Literature identifies the following key stakeholders apart from the shareholders: employees; creditors and suppliers; financiers; customers; government; and society in general. It is the role of managers to ensure that the business maximizes the utility of all these stakeholders (Lako, 2011 and Chriri, 2008). For instance employees must be guaranteed of their job security. Creditors and suppliers look forward to receiving their payments when they fall due. Financiers must be paid their interest on time. Customers must be assured of high quality products at fair price. The government expects the business to comply with various laws and regulations including tax payment. And the society at large must benefit because business existence depends on the society.

The board of directors through their monitoring and advisory role is expected to ensure that managers take decisions that will meet the expectations of the various stakeholders. They should guard against managerial opportunism that will deny stakeholders their rights (Ibrahim, Howard and Angelidis, 2003). Again, the success of this will depend on the various aspects of the board such as the size, independence and diversity. The nature of corporate ownership may also influence board's effectiveness.

Prior studies have shown that decisions regarding effective tax rates could have severe consequences for all stakeholders (Lee, 1998). Managers may be motivated to undertake tax planning so as to maximize the after tax earnings for them to receive higher performance bonus at the detriment of government in terms of low tax revenue.

Hill and Jones (1992) recommend the need for stakeholders to institute additional structures for monitoring managers to meet their needs. One of the ways stakeholders limit opportunistic behaviour of managers is through lobbying and boycotts. They also engage in public shaming of managers running companies that engage in excessive tax management practices. The result of these actions has at times worked at the detriment of some stakeholders. For instance, boycott of the products of a company engaging in excessive reduction of ETRs may reduce the company's earnings leading to reduced earnings and massive job cuts. Financiers may lose their investment as do the creditors who may suffer bad debts and the society in general will lose.

According to Stakeholder Theory therefore, the board of directors as a corporate governance mechanism should promote compliance with tax regulations so as to meet the needs of the various stakeholders (Lanis and Richardson, 2012)

Just like any other theory, Stakeholder Theory has also suffered its fair share of criticism. Goodpaster (1991) for instance criticizes stakeholder approach for failing to recognize that the relationship between management and shareholders is ethically different in kind from the relationship that exists between management and other parties (like customers, suppliers, employees, government). He further argues that though managers have many non-fiduciary duties to various stakeholder groups, their fiduciary duties are only to

shareholders. In other words the primary concern of managers should be the maximization of shareholder wealth since they are the ones who have risked their capital.

From the foregoing discussion, corporate governance mechanisms should consider not just shareholders' interest but also stakeholders' interest to obtain a full picture of the impact such mechanisms could have on effective corporate tax rates.

2.4 Conceptual Framework

Conceptual framework is helpful in developing understanding and awareness of the phenomenon under inquiry and to effectively communicate it (Smyth, 2004). A well articulated conceptual framework assists the researcher to make meaning of subsequent findings. It gives a graphical or diagrammatic representation of the variables under study.

Stratman and Roth (2004) observed that a conceptual framework is developed from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at and find suitable literature. It helps to clarify the research question and objectives of the study. The conceptual framework for this study is presented in Figure 2.1.

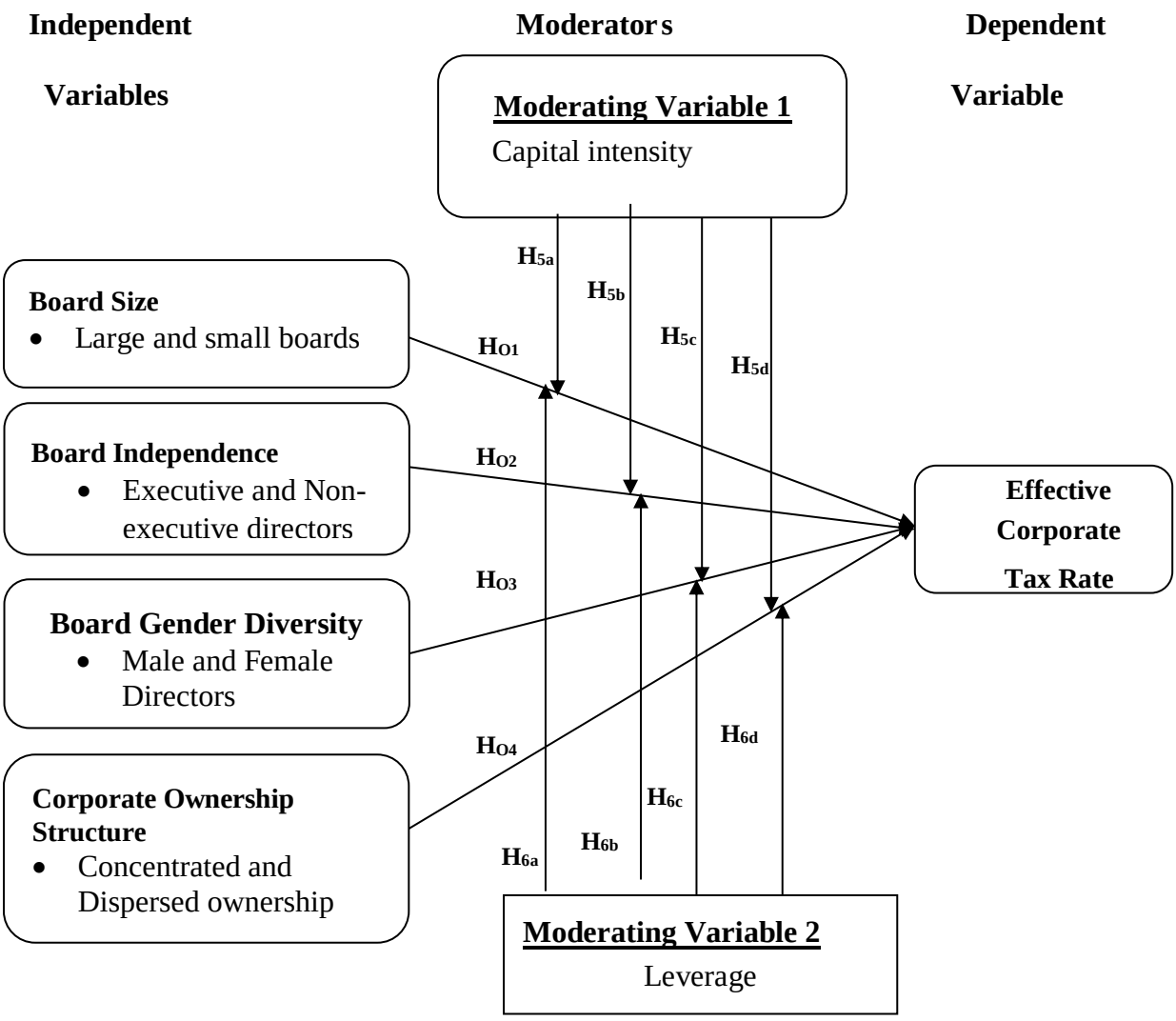

Figure 2.1: Conceptual Framework

(Source: Researcher, 2019)

The dependent variable is represented by Effective Corporate Tax Rate. The ECTR is computed as follows:

$$\text{ECTR} = \frac{\text{Cash Tax Paid}}{\text{Profit Before Tax}} \quad \text{..... Equation 2.1}$$

While there are several measures of ETR, this study adopts the use of cash ETR. This is because cash ETR captures permanent and contemporary tax strategies (Dryeng *et al*., 2008 and Watson, 2015). According to Dryeng *et al* (2008) the advantage of using cash amount of tax paid as opposed to tax expense is that it helps to minimize the likely effects of items such as valuation allowance and tax cushions. Minnick and Noga (2010) also advocate for cash ETR arguing that cash tax measured ETR "takes into account the tax benefits of employee stock options which accounting ETR does not". The use of Profit before Tax rather than Taxable Profit in the denominator helps in studying the impact of tax preferences on effective tax rates before tax adjustments. Many past studies such as Minnick and Noga (2010), Dryeng *et al* (2010), Chen et al (2010), Huseynov and Klamm (2012), Armstrong et al (2012), Ribeiro *et al* (2015) and Fernandez-Rodriguez *et al* (2019) use these variables to compute ETRs.

The first independent variable is Board Size**.** This is measured by the total number of directors that constitute the board. Prior research has shown that the size of the board can negatively or positively influence effective tax rates through their advisory and monitoring role (Minnick and Noga, 2010; Khaoula and Ali, 2012; Ribeiro *et al.*, 2015; Khamoussi *et al.*, 2016 and Păunescu,Vintila and Gherghina, 2016).

Board Independence is the second independent variable. It is measured as the percentage of non-executive directors on the board. Non-executive director means a member of a board of a company who can own shares in the company but is not part of the management team or affiliated with the company in any way; and is not an employee of the company (CMA, 2015). It has been found out by previous studies that board independence can have an effect on effective tax rates (Yeung, 2010; Minnick and Noga, 2010; Zhou, 2011; Ribeiro *et al.*, 2015 and Păunescu *et al*., 2016).

Another independent variable is the Board Gender Diversity. This is measured in terms of the percentage of women on the board. Past research has shown that the presence of women on the board can influence managerial choices on tax strategy of the company hence affecting effective tax rates. Studies such as Khaoula and Ali (2012), Zemzem & Ftouhi (2013), Boussaidi and Hamed (2015), Lanis *et al*. (2015), Oyenike *et al*. (2016) have reported varying influence of board gender diversity on effective tax rates.

The last independent variable in this study is corporate ownership structure. This is measured as the percentage of shares held by the top five shareholders. Where the largest five shareholders have more than 50% shareholding then the firm has concentrated ownership, otherwise it is dispersed. This will be measured by a dummy variable of 1 if concentrated and 0 if dispersed. Past studies have shown that ownership structure is associated with effective tax rates. Such studies include Florackis (2008), Chen *et al.* (2010), Fraile and Fradejas (2014), Ribeiro *et al.* (2015).

All the variables will be measured on a yearly basis in order to obtain more rigorous and precise estimations contrary to most of the past studies that considered these variables as

constant during more than one year. This also addresses the question of time value for money.

Two moderating variables, that is, capital intensity (CAPINT), and leverage (LEV) are used since they have previously been linked to effective tax rates but their moderating effect on the relationship between corporate governance and effective tax rates has not been explored. The variables are defined as follows:

Leverage represents a firm's capital structure which is measured by dividing total debt with total equity. While few studies if any, have specifically investigated the moderating effect of leverage on the relationship between corporate governance and effective tax rates, prior studies have documented the existence of an association between leverage and effective corporate tax rates. A firm with high financial leverage would be expected to have lower ETR because of the deductibility of interest payments for tax purpose. Similarly, a company with high tax liability has motivation to use more debt in its capital structure. Past studies have generally reported a negative relationship between highly levered firms and effective tax rates (Gupta and Newberry, 1997; Wison, 2009; Lisowsky, 2010 and Rego and Wilson, 2012). Other studies such as Rani, Susyeto and Faudah (2018) have reported a positive relationship between leverage and effective tax rate. Since financing decisions are usually determined by the board of directors, it means therefore that leverage is likely to affect the relationship between corporate governance and ECTR and is therefore included as a moderating variable.

Capital Intensity is also included as a moderating variable. It is calculated by dividing property, plant, and equipment (PPE) figure with total assets figure. The moderating

effect of capital intensity on the relationship between corporate governance and effective corporate tax rate has hardly been explored by previous studies. Companies that are more capital intensive have been found to benefit more from depreciation deductibility resulting in lower effective tax rates. Past studies like Derashid and Zhang, (2003); Adhikari *et al*. (2005); and Chen *et al.* (2010); have confirmed this relationship. A decision to invest in fixed assets of the company usually requires approval from the board. It means therefore that the level of investment in fixed assets and consequently the amount of depreciation allowance that can be claimed in the income tax computation is influenced by the board. Capital intensity is thus included to determine its moderating effect on the relationship between corporate governance and effective corporate tax rates.

2.5 Identification of Knowledge Gap

From a review of the empirical literature it is clear that most studies on corporate governance and effective corporate tax rates have been conducted in developed economies (Desai and Dharmapala, 2006; Dryeng *et al.*, 2008; Desai and Dharmapala, 2009b; Gupta and Newberry, 1997; Minnick and Noga, 2010; Hanlon and Heitzman, 2010 and Armstrong *et al*., 2012; Fernandez-Rodriguez *et al.*, 2019). This study attempted to break this monotony by conducting a similar study in Kenya. This is particularly important because the results obtained from developed economies may not necessarily be generalizable to developing economies like Kenya due to huge variations in economic, political and social environment between the nations.

Secondly, past studies provide mixed and inconclusive findings about the impact of corporate governance mechanisms on effective corporate tax rates. Also, very few of the

prior studies combine ownership structure and board characteristics in the study of corporate governance and effective tax rates (Dryeng *et al.*, 2008; Desai and Dharmapala, 2009b; Minnick and Noga, 2010; Hanlon and Heitzman, 2010; Armstrong *et al*., 2012; Ribeiro *et al.* and Fernandez-Rodriguez *et al*., 2019). This study therefore sought to bring clarity on the relationship between corporate governance and effective tax rates.

Thirdly, few studies if any have been done to investigate the relationship between corporate governance and effective tax rates among firms listed on the Nairobi Securities Exchange despite them being among the largest companies in the country and possibly among the biggest contributors to tax revenue in Kenya. By using NSE as the study population, this study delved into uncharted waters.

Fourthly, rather than using a single corporate governance score to capture the effect of ownership structure and board characteristics as has been done by previous studies, this study uses different proxies to show the impact these two important elements of corporate governance have on Effective Corporate Tax rates.

Fifthly, the moderating effect of leverage and capital intensity on the relationship between corporate governance and effective corporate tax rate has not been explored by previous studies. By incorporating moderating variables, this study therefore stands out from the rest in terms of methods.

Finally, unlike many of the past studies which do not measure the variables on a yearly basis but rather use averages thus failing to address the question of time value for money, this study by the use of longitudinal research design is able to address this anomaly.

This study attempts to fill the knowledge gap in the extant literature by using NSE listed companies to investigate the impact of board characteristics' and ownership structure on a firm's effective corporate tax rates in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, location of study, the study population, sample and sampling procedures, data collection procedures, data analysis and presentation techniques and ethical considerations for the study.

3.2 Research Design

Research is a process of planning, executing and investigating a phenomenon in order to find answers to specific questions. This study adopted a positivist research paradigm which involved following a deductive logic of formulation of hypotheses, collection of data to test the hypotheses after which the hypotheses were either rejected or accepted depending with the results obtained (Kivunja and Kuyini, 2017). Positivist approach is ideal because it is objective, measurable and predictable (Cohen, Lawrence and Morrison, 2000). To achieve the objectives of the study, longitudinal research design was employed. This is because the data set obtained assumed a panel structure. use of panel data models have become widely used in applied economics research because they allow researchers to control for unobserved individual time-invariant heterogeneity which is not easily done with pure cross-sectional data (Andrea *et al.,* 2013; Baltagi, 2008; Hsiao, 2014; Irungu *et al.,* 2018; Jawadi *et al.,* 2017; Kenn-Ndubuisi and Nweke, 2019)

3.3 Location of Study

The study was conducted in Kenya. The Republic of Kenya is located in East Africa. It borders the Indian Ocean and Somali to the East, Uganda to the West, Tanzania to the South and South Sudan and Ethiopia to the North (Appendix 7). Kenya is considered the economic hub of East and Central Africa. Its economy is ranked the biggest in East and Central Africa and the eighth largest in Africa (Appendix 6). The choice of Kenya was informed by the fact that it has in the recent past experienced a widening budget deficit and a ballooning public debt due to inadequate tax revenue collections (Appendix 4 and 5). It is believed that the results obtained will mirror the state of affairs in other developing economies or will at least guide similar studies in different economies.

3.4 Study Population

The target population for this study was the 67 firms listed on the Nairobi Securities Exchange (NSE) as at 31st December, 2017. The firms are divided into thirteen categories based on their nature as follows: Banking; construction and allied; Automobiles and accessories; Commercial and services; Manufacturing and allied; Insurance; Investment; telecommunication and Technology; Agriculture; Investment services; Energy and petroleum; Real estate investment trust; and exchange traded Fund (www.nse.co.ke). (See *Appendix 2*).

The choice of NSE listed firms is informed by the fact that effective tax planning requires huge amount of resources which can only be provided by large companies most of which are listed at the NSE (Dryeng *et al*., 2008; Huseynov and Klamm, 2012). Also, listed firms are required to publish their financial statements in the public making it easy to

obtain data required for this study. Moreover, the listed firms are under strict regulation including compulsory adherence to the Code of Corporate Governance issued by the Capital Markets Authority.

3.5 Sample and Sampling Procedures

Purposive sampling was used in this study to select listed firms that met the following criteria. First, the firm should not be enjoying preferential tax rate other than the 30%. Secondly, the firm must have reported profits in the period. As Godambe (1982) states purposive sampling has the advantage of being able to be used with a number of data gathering techniques.

Table 3.1 Sample Selection Table

Sampling Procedure	Number of Companies
Total listed firms as at 31st December 2017	67
Firms with preferential tax treatment	09
Firms that reported losses in the period	18
The remaining firms in the sample	40

Firms with preferential tax treatment are eliminated because they enjoy a lower tax rate than the statutory tax rate of 30%. Such firms mainly include newly listed firms. Firms that reported business losses (negative pretax income) in the period are excluded from the sample since negative ETR has no economic meaning. This follows the usual procedure

from previous studies such as Mahenthiran and Kasipillai (2011) and Fernandez-Rodriguez *et al*. (2019).

3.6 Data Collection Instrument

The content analysis form (Appendix 3) was used to collect data from the published annual reports. Content analysis is the use of recorded information in various formats such as texts, audio, video or pictures to study a phenomenon. The advantage of content analysis is that it is non-invasive and therefore ideal in studying topics such as tax matters (Alan and Bryman, 2011).

Information regarding board size which is the total number of directors on the board was extracted from the corporate governance section contained in the published annual reports. Similarly data relating to board independence which is the number of non-executive directors was obtained from the same section of the firm's annual reports. Board gender diversity data showing the number of female persons on the board was also obtained from the same annual reports. To obtain data on ownership structure as to whether it is concentrated or dispersed, percentage shareholding of the top five shareholders was extracted from the reports.

Figures on profit before tax and cash tax paid used to compute the effective tax rate was extracted from the financial statements, that is, income statement, statement of financial position and statement of cash flows that are contained in the annual reports. Data on Property, Plant and Equipment (PPE), total debt and total equity as well as total asset figures were also obtained from the same financial statements.

3.6.1 Validity

The content validity of the instrument (content analysis form) was determined by discussing the items in the instrument with supervisors, lecturers and colleagues from the School of Business and Economics and also with experts in corporate governance and taxation in the country. Since the determination of content validity is judgmental, all these people helped to refine the contents in the instrument (Krippendorff, 2013).

3.6.2 Reliability

Marston and Shrives (1991) states that "The results obtained can be considered to be reliable if the results can be replicated by another researcher". Reliability of the content analysis form was ensured by subjecting it to reviews by several independent persons in line with recommendations by Krippendorff (2013). Since the data is obtained from annual reports that are publicly published and do not change over time, there was no hindrance to reliability. Also, the financial statements of most of the listed firms are audited by the 'Big Four' audit firms therefore data collected from them can be considered reliable. Furthermore, reliability of the data collected was achieved by subjecting it to checks by three independent persons who verified its accuracy.

3.7 Data Collection Procedures

The study used secondary data consisting of published annual financial statements and reports of the firms listed on the Nairobi Securities Exchange. All listed firms are required to meet stringent requirements including publishing their annual reports (CMA,

2015). The study adopted a time-frame of seven years from 2011 to 2017. This period was considered ideal because of the constant corporate tax rate of 30% which allowed easier comparability. Secondly this is the period that Kenya witnessed widening budget deficits and exponential growth of public debt (Appendix 4 and 5).

Financial statements of all the listed firms were downloaded from the individual company's and NSE websites. Using content analysis approach, the required information was extracted from these financial statements and posted to the content analysis form for further processing.

3.8 Data Analysis and Presentation

Data was coded according to variables in the study. After completion of coding, the data was classified on the basis of common characteristics and attributes. Data was presented graphically using figures and tables as appropriate. The Statistical Package for Social Sciences (SPSS) windows version 21 and STATA version 13 was used to aid in the statistical analysis of the data. Both descriptive and inferential tests were conducted.

A Multiple Linear Regression Model was used to predict effective corporate tax rates using the four independent variables in the study. In addition, the β coefficients for each independent variables generated from the model was subjected to a z –test, in order to test each of the hypotheses under study.

3.8.1 Panel Regression Model

Panel data is a kind of data in which observations are obtained on the same set of entities at several periods of time (Jirata, 2018). A panel data set contains N entities each of which includes T observations measured at i through t time period. Thus, the total number of observations is NT. Panel data is a marriage of time series and cross sectional data, in other words there will be space as well as time dimensions.

Panel data can be balanced or unbalanced. A balanced panel data is one in which each subject has the same number of observations. If a balanced panel contains N panel members and T periods, the number of observations (n) in the dataset is necessarily n = N×T. If each subject has a different number of observations, then it has an unbalanced data. If an unbalanced panel contains N panel members and T periods, then the number of observations (n) in the dataset: n < N×T (Cameron and Trivedi, 2009). This study was based on balanced panel data as data for all the sampled firms listed at Nairobi Securities Exchange for the period under study was available.

Due to the increased availability of panel data and recent theoretical advances, panel data regression methods have become widely used in applied economics research because they allow researchers to control for unobserved individual time-invariant heterogeneity which is not easily done with pure cross-sectional data (Andrea *et al.*, 2013; Baltagi, 2008; Hsiao, 2014; Irungu *et al.*, 2018; Jawadi *et al.*, 2017; Kenn-Ndubuisi and Nweke, 2019). Analysis of panel data requires taking into account the panel specific structure of several observations for each individual. But it is unlikely, that the error terms are uncorrelated between individuals and over time.

The two most popular approaches to take account of the special time structure are fixed and random effects models. The fixed effects model assumes that the differences across units can be captured in differences in the constant term which needs to be estimated as parameters. The most appealing aspect of the fixed effect model is that it is robust to the omission of any relevant time-invariant regressors which cannot be estimated because their influence is captured in the individual specific dummy or, in the case of a simplified formulation, because the variables are zero. On the other hand, in the random effects model it is assumed that the individual specific effects are uncorrelated with the explaining variables and these specific effects are treated as part of error term (Ogunwale *et al.*, 2011). Data therefore do not carry useful information about the error term. A variance-covariance matrix can be used to describe how much certain observation depends on each other. The major difference between random effects model and the fixed effects model is that in the random effects model, the omitted time-invariant variables are assumed to be uncorrelated with the included time varying covariates while in the fixed effects model they are allowed to correlate (Mundlak, 1978). The random effects model has the advantage of greater efficiency relative to the fixed effects model leading to smaller standard errors and higher statistical power to detect effects (Hsiao, 2003). The difference in assumptions made by the two approaches allows the researcher to choose an approach which is appropriate for the study attributes based on Hausman Test (Hausman, 1978).

The Hausman Test can be applied anytime to an econometric model and can be consistently estimated under the alternative hypothesis as well as under the null hypothesis. The test is based on comparing the two estimates. Since, under the null

hypothesis both estimation procedures are consistent, observing a statistical difference between the two provides evidence against the null hypothesis (Ahn and Moon 2001; Mundlak, 1978). The random and fixed effects models yield different estimation results, especially if T is small and N is large. The null hypothesis is that the individual and time-effects are not correlated with the $x_{it's}$. The basic idea behind this test is that the fixed effects estimator is consistent whether the effects are or are not correlated with the $x_{it's}$.

According to Macmanus (2011), if the difference in coefficients is not significant (P > 0.05), then the null hypothesis is rejected and it is concluded that the unique errors are correlated with the regressors and thus the fixed effects regression model will be used and vice versa. The Hausman specification test tests the null hypothesis that the slope coefficients of the models being compared do not differ significantly with the fixed effects being used when there are differences in the slope coefficients. Therefore, the null hypothesis is rejected when Prob > χ^2 is less than the critical p- value and in such a case the fixed effects regression is appropriate.

The following regression model was used to test the first four hypotheses.

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \varepsilon_{it}}$$

Where;

ECTR - Effective Corporate Tax Rate

β_0 - Constant

$\beta_{1it}, \beta_{2it}, \beta_{3it}, \beta_{4it}$ - Coefficient indicating rate of change of Effective Corporate Tax Rate as Board size, Board independence, Board gender diversity and corporate ownership structure changes respectively.

BS - Board size

BI - Board independence

BG - Board gender diversity

COS - Corporate ownership structure

ε_{it} *=Error terms*

i=Firm 1....., 40

t= Time in years form 2011-2017

Since this study is incorporating moderating variables, according to Baron and Kenny (1986) an equation that regresses the independent variables against the dependent variable while controlling for moderating variable firm attributes, has to be designed so as to ascertain the moderation effect. In their seminal article on mediation and moderation, Baron and Kenny (1986) define a moderator as a qualitative or quantitative variable that affects the direction and/or strength of a relationship between an independent or predictor variable and a dependent or criterion variable. Moderation occurs when the strength or direction of the effect of a predictor variable on an outcome variable varies as a function of the values of another variable, called a moderator (Hayes, 2013; Marsh *et al.,* 2013). A moderation effect could be Enhancing, where increasing the moderator would increase the effect of the independent variable (IV) on the dependent variable (DV); Buffering, where increasing the moderator would decrease the effect of the independent variable on the dependent variable; or Antagonistic, where increasing the

moderator would reverse the effect of the independent variable on the dependent variable (Andersson *et al.,* 2014).

Past studies such as Muigai *et al*., (2017); Saha *et al.,* (2014) Shou-Min *et al.,* (2014); Meme, (2017); Zatton *et al.,* (2017) incorporated the moderating variable in their regression models in order to determine the moderation effects on the relationship between the independent and dependent variables. Given several studies that have gone further to combine panel data and moderation regression model, this study will use a moderated panel regression model to help test for moderation effect of capital intensity and leverage to analyze the data which incorporates both time series and cross-sectional dimensions.

Several studies have used the interaction term to show the moderating effect such as (DeBoskey *et al.,* 2012; DeBoskey and Jiang, 2012; Gomariz and Bellesta, 2014; Samet and Jarboui, 2017). According to Bisbe and Otley (2004) hierarchical moderated regression model is an appropriate method for identifying the effect of moderating variables. It is used to show if variables of your interest explain a statistically significant amount of variance in your dependent variable after accounting for all other variables. In this framework, the study builds several regression models by adding variables to a previous model at each step; later models always include smaller models in previous steps. In many cases, the interest is to determine whether newly added variables show a significant improvement in R^2 (the proportion of explained variance in dependent variable by the model) (Little *et al.,* 2012).

Therefore, hierarchical moderated linear regression analysis with panel data was used to test the moderator effects in this study. To evaluate whether capital intensity and leverage have a moderating effect, moderated regression analysis was done in two stages. The first stage involved regressing of the independent variables (CG) with the dependent variable (ECTR) in a hierarchical regression analysis to determine the direct effects. The second stage involved loading the independent variables, the moderator variable and the introduction of the interaction variables one at a time to test the moderation effect. Entering the interaction term in the second step allows for the measurement of the unique predictive relationship of the interaction term (Baron and Kenny, 1986; Cohen *et al.,* 2003; Little *et al.,* 2012).

The study employed the hierarchical multiple regression model (Baron and Kenny 1986). The hypotheses were tested using a series of hierarchical linear regression analysis as specified in the equations below;

Moderation 1: Capital Intensity

$$\boldsymbol{ECTR_{it} = \beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \varepsilon \ldots\ldots\ldots\ldots 1}$$

$$\boldsymbol{ECTR_{it} = \beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}CI_{it} + \varepsilon \ldots 2}$$

$$\boldsymbol{ECTR_{it} = \beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}CI_{it} + \beta_{5ait}BS_{1it} * CI_{it} + \varepsilon \ldots\ldots 3}$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}CI_{it} + \beta_{5ait}BS_{1it} * CI_{it} + \beta_{6bit}BI_{2it} * CI_{it} + \varepsilon} \ldots\ldots 4$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}CI_{it} + \beta_{5ait}BS_{1it} * CI_{it} + \beta_{6bit}BI_{2it} * CI_{it} + \beta_{7BGt}BG_{3it} * CI_{it} + \varepsilon} \ldots\ldots 5$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}CI_{it} + \beta_{5ait}BS_{1it} * CI_{it} + \beta_{6bit}BI_{2it} * CI_{it} + \beta_{7BGt}BG_{3it} * CI_{it} + \beta_{8dit}COS_{4it} * CI_{it} + \varepsilon} \ldots 6$$

Where;

ECTR - Effective Corporate Tax Rate

β_0 - Constant

β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, - Coefficient indicating rate of change of Effective Corporate to changes in the predictor variables.

BS - Board size

BI - Board independence

BG - Board gender diversity

COS - Corporate ownership structure

CI -Capital intensity

ε_{it}=*Error terms*

i=Firm 1....., 40

t= Time in years form 2011-2017

Moderation 2: Leverage

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \varepsilon} \ldots\ldots\ldots\ldots\ldots\ldots \mathit{1}$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{it} + \beta_{5it}LEV_{it} + \varepsilon} \ldots \mathit{2}$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}LEV_{it} + \beta_{5ait}BS_{1it} * LEV_{it} + \varepsilon} \ldots\ldots\ldots\ldots \mathit{3}$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}LEV_{it} + \beta_{5ait}BS_{1it} * LEV_{it} + \beta_{6bit}BI_{2it} * LEV_{it} + \varepsilon} \ldots\ldots\ldots\ldots \mathit{4}$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}LEV_{it} + \beta_{5ait}BS_{1it} * LEV_{it} + \beta_{6bit}BI_{2it} * LEV_{it} + \beta_{7BGt}BG_{3it} * LEV_{it} + \varepsilon} \ldots\ldots\ldots\ldots \mathit{5}$$

$$\boldsymbol{ECTR_{it}} = \boldsymbol{\beta_{0it} + \beta_{1it}BS_{1it} + \beta_{2it}BI_{2it} + \beta_{3it}BG_{3it} + \beta_{4it}COS_{4it} + \beta_{5it}LEV_{it} + \beta_{5ait}BS_{1it} * LEV_{it} + \beta_{6bit}BI_{2it} * LEV_{it} + \beta_{7BGt}BG_{3it} * LEV_{it} + \beta_{8dit}COS_{4it} * LEV_{it} + \varepsilon} \ldots\ldots\ldots\ldots \mathit{6}$$

Where;

ECTR - Effective Corporate Tax Rate (ECTR)

β_0 - Constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8,$ - Coefficient indicating rate of change of Effective Corporate Tax Rate to changes in the predictor variables.

BS - Board size

BI - Board independence

BG - Board gender diversity

COS - Corporate ownership structure

LEV -Leverage

ε_{it} *=Error terms*

i=Firm 1....., 40

t= Time in years form 2011-2017

Table 3.2 gives a summary of the variables under study, their abbreviations and how they were measured.

Table 3.2: Study Variables

Variable	Abbreviation	Measures used
Effective Corporate Tax Rate	ECTR	Cash tax paid divided by Profit Before Tax

Board Size	BS	The total number of directors
Board Independence	BI	Percentage of non-executive directors on the board
Board Gender Diversity	BG	Percentage of female directors on the board
Corporate Ownership Structure	COS	Percentage of top 5 shareholding
Leverage	LEV	Total Debt divided by Total Equity
Capital Intensity	CI	Property, Plant and Equipment divided by Total assets

3.8.2 Testing for Assumptions of the Regression Model

The need to identify any violations of the underlying assumptions of regression model is emphasized in research (Hair *et. al.,* 1998). The assumptions which are considered necessary if conclusions can be drawn about a population on the basis of a regression analysis done on sample data includes normality tests, heteroscedasticity, multicollinearity, autocorrelation test and specification error test (Field, 2005). These assumptions are considered in the following subsections.

3.8.2.1 Multicollinearity

Multicollinearity refers to the existence of a linear relationship between two or more explanatory variables. Multicollinearity makes it difficult to differentiate the individual effects of the explanatory variables and regression estimators may be biased in that they tend to have large variances (Murray, 2006). Furthermore, if there is a perfect linear relationship among the explanatory variables, the estimates for a regression model cannot be uniquely computed. The possible existence of multicollinearity is tested based on the

correlation matrix incorporating all the independent variables. The problem of Multicollinearity occurs when the relative movements of two or more independent variables match. It means that the standard OLS estimates become unable to distinguish between the variables. To examine the level of correlation between the independent variables, Variance Inflation Factors (VIF) test was done after each standard OLS regression. This was important because many other independent variables might have a priori suspect of multicollinearity. The rule of thumb for absence of multicollinearity is that the VIF figure should be less than ten and the tolerance value must be higher than 0.10. (Field, 2005, Hair *et al*. 1998).

3.8.2.2 Heteroskedasticity

The problem of heteroskedasticity occurs when the residuals of the regression are heteroskedastic, that is, the variance of residuals is not constant for all observations. In such a case the standard OLS estimators no longer produce a minimum variance meaning the standard error of the coefficients gives inaccurate estimates. In the presence of heteroskedasticity, the estimated parameters may remain consistent but inefficient. In order to test for heteroskedasticity, Breusch Pagan/Cook-Weisberg (1979) test was performed. The said test is the Lagrange Multiplier test that is based on the assumption that residuals are normally distributed with K degree of freedom. The null hypothesis states that the variance of the disturbance terms is homoscedastic. In other words, the variance of the error terms is constant. Homoscedasticity assumption is satisfied when at each level of the predictor variable(s) the variance of the residual terms are constant. If the assumption does not hold, the accuracy of the *r* coefficient may be untenable.

Assuming that distribution of data is homoscedastic when indeed it is heteroscedastic leads to a result which overestimates the goodness of fit as measured by the Pearson coefficient (Field, 2005).

3.8.2.3 Autocorrelation

One of the fundamental assumptions of Linear Regression Model is that the covariance between the error terms over the time is equal to zero, or the error terms are not correlated with each other (Brooks, 2010). If, however, the error terms are correlated it creates the problem of autocorrelation or serial correlation, which leads to making the standard error biased. Hence, the standard OLS estimators no longer remain the minimum variance ones. This follows that a diagnostic test is required to check for the presence of serial correlation after each standard OLS regression of the analysis. The graphical method is commonly used as a first-hand method to judge the presence of autocorrelation. But to confirm the presence of autocorrelation a formal statistical test is applied. Tests such as Wooldridge test, Durbin-Watson and Breusch-Godfrey are the simplest and commonly used tests in time series analysis in order to detect autocorrelation. Wooldridge test was conducted in this study to test for autocorrelation.

3.8.2.4 Normality Test

Normality test helps to determine how likely it is for a random variable underlying the data set to be normally distributed. The study performed the Jarque-Bera test for normality. Additionally, skewness and kurtosis were used as proposed by Jarque and Bera (1987) for the omnibus test. Improved Jarque-Bera tests have been discussed by

many authors. The Jarque-Bera statistic follows the chi-squares distribution with two degrees of freedom. Under the null hypothesis of normality, the expected value of the statistic is two.

3.8.2.5 Unit Root Test

The study used panel data and therefore, there was need to determine whether the variables in question were stationary or non-stationary. Whenever there is stationarity, series of finite variance and uniform oscillations from the mean will be observed (Baltagi, 2005). Consequently, there was a need to test whether the variables have a uniform mean and variance across time variation. It is possible to have deceptive inferences if the information collected is not stationary and regression models gained may be spurious or affected by uneven regression problems. Time series data consists of observations which are considered to be random variables that can be described by some stochastic processes. Time series is only possible where data is stationary. This means the data must have statistical properties (mean, variance and covariance) that never vary with time. Therefore, it is important that one should first test a time series to see if it is stationary or not (Brockwell, 2011). In this study Levin-Lin-Chu unit root test, Harris-Tsavalis unit root test and Im-Pesaran-Shin unit root tests were conducted.

3.8.2.6 Specification Error Test

Ramsey RESET test was conducted to determine whether the regression model was correctly specified. According to Studenmund (2000), the probability value of the computed statistics should be more than the threshold value of 0.05.

3.8.2.7 Hausman Test

A panel data framework was used to test the hypotheses. Panel data, as noted by Hsiao (1986), has several distinct advantages: it provides more degrees of freedom, increases variations in the data and thereby reduces the chances of multicollinearity, and makes it possible to control for fixed effects. Also panel data has the strength of accommodating more observations hence increases the degrees of freedom. In addition, it reduces the problem of collinearity of regressors and modeling flexibility of behavior differences within and between countries and/or groups or institutions (Biwott, 2011and Hsiao, 2007).

Panel data was analyzed using fixed effect model and random effects model. Fixed effects model is used when controlling for omitted variables that differ between individuals but are constant over time. If some omitted variables might be constant over time but vary between individuals, and others might be fixed between individuals but vary over time, then random effects model will be of help in taking the two types into account. The random effects model would be appropriate if data are representative of a sample rather than the entire population because the individual effect term can be a random outcome rather than a fixed parameter.

Hausman test was conducted to decide whether the fixed effect or the random effect is the appropriate model to explain the relationship between variables. The null hypothesis is that the random effect model is more suitable. If the null hypothesis is rejected, then the fixed effect model should be used (Greene, 2008). The null hypothesis is that there is no significant correlation between the individual effects and the regressors is rejected at

0.1% significance level in this test. Again, if the test value of Chi-square is higher than the critical value, the null hypothesis is rejected and the fixed effect is a better estimation method.

3.9 Ethical Considerations

Ethical consideration is an important aspect in research. In this study, institutional consent was obtained from the University of Kabianga and the National Commission of Science, Technology and Innovation (NACOSTI) before embarking on data collection (Appendix 8 and 9). To guard against fabrication and falsification of data, three independent persons were used to check the accuracy of the data collected. Confidentiality was achieved through coding the data obtained to conceal identity of participating firms. Since this study relied on secondary data from published financial statements of firms listed on the NSE, there was very limited contact with human subjects. Therefore there was no fear of infringement of respondents' rights of informed consent and voluntary participation.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results and discussion of the findings. The results presented here are organized under four key sections: descriptive statistics, correlation analysis, random effects regression models and the moderation results. Thereafter a discussion of the findings follows.

4.2 Presentation and Interpretation of Results

4.2.1 Descriptive Statistics

Descriptive statistics for the dependent, independent and test variables are presented in Table 4.1.

Table 4.1 Descriptive statistics of study variables

Stats	N	Min	Max	Mean	P50	Sd	Skewness	Kurtosis
ECTR	40	0.000	0.739	0.247	0.252	0.149	0.428	3.114
BS	40	4.000	17.000	8.975	9.000	2.308	0.272	3.145
BI	40	0.167	0.941	0.800	0.818	0.125	-1.308	5.894
BG	40	0.000	0.500	0.161	0.167	0.125	0.170	2.099
COS	40	19.440	93.03	66.398	71.090	16.377	-0.522	2.912
LEV	40	0.000	7.770	0.521	0.230	7.407	-9.279	88.650
CI	40	0.000	0.97	0.282	0.170	0.382	4.206	32.604

Source: Research Data, 2019

From the results, the targeted firms have a board with a minimum of 4 members and a maximum of 17 members. On average, there were 9 members on the board (mean = 8.975).

Out of the total number of directors on the board, 80% of them are non-executive directors (mean=0.8).The minimum percentage of non-executive directors is 16.7% and the maximum percentage is 94.1%. The results indicate that boards of NSE listed firms are dominated by non-executive directors.

The results of Board gender diversity show that on average women constitutes 16.1% of total board membership. The minimum percentage is 0% and the maximum is 50%. It can therefore be deduced that there is a low representation of women on the boards of listed firm in Kenya.

Corporate ownership structure is at a mean of 66.398 meaning that the percentage shareholding of top five shareholders was at an average of 66.398%. Minimum shareholding of the top five shareholders is at 19.4% and the maximum is at 93.03%. These findings imply that firms listed on the Nairobi securities exchange have to a large extent concentrated ownership.

The results also show that leverage was at a mean of 0.521 implying that the ratio of debt to equity was 52.1%. The minimum is 0 and the maximum is 7.70. This result indicate that NSE listed firms finance their operations on an approximately 50-50 basis between debt and equity.

Capital intensity has a mean of 0.282 indicating that property plant and equipment account for 28.2% of the total assets figure. The minimum is 0 and the maximum is 97%. The results show that firms listed on the NSE are less capital intensive.

Finally the study has revealed that the average effective corporate tax rate for NSE listed firms is at 24.7%. The minimum ECTR figure is 0 and the maximum is 73.9%. Evidently, the mean ECTR figure of 24.7% is below the statutory corporate tax rate of 30%. This indicates existence of some level of tax avoidance.

4.2.2 Trend by Years

The study also sought to establish whether the study variables exhibited a trend within the time period of 2011 to 2017.

4.2.2.1 Effective Tax Rate

The tax rate is of utmost importance to the economy as a whole. It is used to achieve a number of policy goals. For instance, the government can set it at a particular rate to attract net inflows of investment in the country and raise more revenue. On the other hand, it can also be used to redistribute income. The study therefore deemed it important to establish the trends in tax rate between 2011 and 2017. Table 4.2 presents the trend in effective tax rate over the seven year period.

Table 4.2 Effective corporate tax rate

Year	N	Min	Max	p50	Mean	sd	Skewness	Kurtosis
2011	40	0.001	0.651	0.214	0.222	0.126	0.803	5.086
2012	40	0.000	0.731	0.245	0.236	0.171	0.634	3.596
2013	40	0.008	0.519	0.239	0.240	0.155	0.106	1.783
2014	40	0.003	0.739	0.288	0.275	0.157	0.481	3.800
2015	40	0.010	0.508	0.256	0.226	0.117	-0.038	2.568
2016	40	0.003	0.579	0.245	0.244	0.131	0.316	2.821
2017	40	0.000	0.606	0.273	0.283	0.173	0.104	1.792
mean difference(ANOVA)								
F	3.11							
Prob>F	0.203							
Bartlett's test for equal variances:								
chi2(7)	233.519							
Prob>chi2	0.00							

Source: Research Data, 2019

From the results, the mean effective tax rate ranged from a low of 22.2% in 2011 to a high of 28.3% in 2017. However, there was no trend elicited by effective tax rate over the years ($F= 3.11$, $\rho=0.203>0.05$).

4.2.2.2 Board Size

The size of the board influences its management policy and its overall effectiveness (Jensen, 1993). The study therefore deemed it important to establish the trends in size of the board of the targeted firms. The years of interest were 2011 to 2017. The resuts are presented in table 4.3.

Table 4.3 Board size

Year	N	Min	Max	Mean	p50	Sd	Skewness	Kurtosis
2011	40	4	14	8.775	9	2.29	0.15	2.87
2012	40	4	16	8.925	9	2.41	0.24	3.37
2013	40	4	15	8.95	9	2.42	0.25	2.83
2014	40	5	15	9.125	9	2.24	0.19	2.69
2015	40	5	15	9.1	9	2.41	0.25	2.59
2016	40	4	14	8.9	9	2.27	0.03	2.54
2017	40	5	17	8.95	9	2.26	0.95	5.26
mean difference(ANOVA)								
F	0.11							
Prob>F	0.9957							
Bartlett's test for equal variances:								
chi2(7)	0.5148							
Prob>chi2	0.998							

Source: Research Data, 2019

From the results, the board was comprised of an average of 9 members. The minimum number of board members ranged from a mean of 8.775 to a high of 9.122 over the period. Nonetheless, there was no trend exhibited in the board size over the years ($F= 0.11$, $\rho=0.9957>0.05$).

4.2.2.3 Board Independence

Independent directors play an instrumental role in ensuring that there is better monitoring of the management team and the protection of the shareholders interest. It was therefore

necessary to ascertain the trends in board independence during the study period. Table 4.4 presents the results of board independence.

Table 4.4 Board independence

Year	N	Min	Max	p50	Mean	sd	Skewness	Kurtosis
2011	40	0.167	0.9286	0.826	0.794	0.153	-2.106	9.012
2012	40	0.400	0.9375	0.818	0.792	0.137	-1.260	4.657
2013	40	0.455	0.9333	0.818	0.814	0.110	-0.728	4.225
2014	40	0.444	0.9333	0.818	0.790	0.122	-0.980	3.649
2015	40	0.571	0.9333	0.818	0.797	0.111	-0.453	2.239
2016	40	0.429	0.9286	0.840	0.811	0.125	-1.051	4.277
2017	40	0.429	0.9412	0.826	0.803	0.119	-1.174	4.469
mean difference(ANOVA)								
F	0.24							
Prob>F	0.9625							
Bartlett's test for equal variances:								
chi2(7)	6.5026							
Prob>chi2	0.369							

Source: Research Data, 2019

From Tale 4.4, board independence ranged from a mean of 79% to 81% for the period 2011 to 2017. Evidently, there was no trend in the composition of nonexecutive directors in the board ($F= 0.24$, $\rho=0.9625>0.05$).

4.2.2.4 Board Gender Diversity

Tax compliance could vary with gender. Consequently, the study sought to establish the trends in board gender diversity over the period 2011 to 2017. The results are as captured in Table 4.5.

Table 4.5 Board gender diversity

Year	N	min	max	Mean	p50	sd	skewness	kurtosis
2011	40	0.000	0.375	0.135	0.125	0.124	0.434	2.049
2012	40	0.000	0.417	0.140	0.146	0.130	0.332	1.897
2013	40	0.000	0.417	0.141	0.134	0.123	0.345	2.129
2014	40	0.000	0.400	0.176	0.182	0.119	-0.076	2.016
2015	40	0.000	0.375	0.185	0.182	0.126	-0.124	1.783
2016	40	0.000	0.500	0.161	0.182	0.120	0.210	2.871
2017	40	0.000	0.500	0.192	0.211	0.130	0.078	2.441
mean difference(ANOVA)								
F	*3.01*							
Prob>F	*0.004*							
Bartlett's test for equal variances:								
chi2(7)	*4.3112*							
Prob>chi2	*0.331*							

Source: Research Data, 2019

From the results, the mean for Board gender diversity ranged from a low of 13.5% to a high of 19.2% over the years. However, no discernable trend is seen (F= 2.08, ρ=0.0554>0.05).

4.2.2.5 Corporate Ownership Structure

The manner in which firms are run may be influenced by the ownership structure. For instance, firms with dispersed control do not exercise strict and close control while those

with concentrated ownership tend to have strict control mechanism. It is against this backdrop that the study found it important to establish the trends in corporate ownership structure. Table 4.6 gives the results of the trend in ownership structure over the study period.

Table 4.6 Corporate ownership structure

Year	N	Min	Max	Mean	p50	sd	Skewness	Kurtosis
2011	40	31.46	90.12	66.45	69.21	14.81	-0.32	3.03
2012	40	22.47	92.11	66.93	70.33	15.66	-0.62	3.94
2013	40	31.1	93.03	66.87	72.09	15.40	-0.53	2.78
2014	40	19.44	92.89	65.79	71.03	17.78	-0.54	3.03
2015	40	28.453	91.62	67.93	72.05	17.23	-0.42	2.62
2016	40	26.83	91.60	63.98	66.83	17.03	-0.48	2.20
2017	40	26.83	91.70	66.21	68.67	17.56	-0.50	2.72
mean difference(ANOVA)								
F	0.2							
Prob>F	0.9752							
Bartlett's test for equal variances:								
chi2(7)	2.2277							
Prob>chi2	0.898							

Source: Research Data, 2019

From the results, on average, the ownership structure ranged from a mean of 63.98% to 67.93% over the study period. However, there was no trend evidenced in the corporate ownership structure ($F= 0.2$, $\rho=0.9752>0.05$).

4.2.2.6 Leverage

Financial leverage which measures the extent of debt financing has on impact on tax payable due to tax deductibility of interest expense. In light of the foregoing, the study sought to establish the financial leverage among the listed firms for a period ranging from 2011 to 2017. Table 4.7 presents the results of the trends in leverage.

Table 4.7 Leverage

Year	N	Min	Max	Mean	p50	sd	Skewness	Kurtosis
2011	27	0.000	1.490	0.300	0.190	0.323	1.764	6.471
2012	29	0.000	4.820	0.509	0.165	0.931	3.130	13.349
2013	31	0.000	3.260	0.455	0.155	0.801	2.580	8.595
2014	27	0.000	3.830	0.524	0.160	0.894	2.703	9.795
2015	25	0.000	1.830	0.328	0.200	0.407	2.575	9.846
2016	24	0.080	1.980	0.638	0.425	0.537	0.973	2.860
2017	26	0.01	7.77	0.890	0.39	1.58	3.48	15.27
mean difference(ANOVA)								
F	1.45							
Prob>F	0.1988							
Bartlett's test for equal variances:								
chi2(7)	86.6305							
Prob>chi2	0.000							

Source: Research Data, 2019

From the findings, the use of debt financing was highly evidenced in 2017 (mean = 0.89) and lowest in 2011 (mean = 0.30). Nonetheless, there was no trend exhibited in the leverage over the years ($F= 1.45$, $\rho=0.1988>0.05$).

4.2.2.7 Capital Intensity

Stickney and McGee (1982) argued that capital intensity creates variation in effective tax rate across companies. The study therefore sought to establish the trends in capital intensity between 2011 and 2017. Table 4.8 presents the results of the trend of capital intensity over the period.

Table 4.8 Capital intensity

Year	N	Min	Max	Mean	p50	sd	Skewness	Kurtosis
2011	40	0.000	0.800	0.215	0.075	0.248	1.084	2.867
2012	40	0.000	.930	0.306	0.120	0.517	3.828	20.430
2013	40	0.010	.960	0.395	0.230	0.620	3.909	20.573
2014	40	0.000	.970	0.306	0.230	0.311	1.461	5.139
2015	40	0.000	.910	0.263	0.200	0.266	1.140	3.873
2016	40	0.000	0.950	0.242	0.090	0.271	0.965	2.764
2017	40	0.000	0.860	0.248	0.130	0.266	0.837	2.390
mean difference(ANOVA)								
F	0.82							
Prob>F	0.5531							
Bartlett's test for equal variances:								
chi2(7)	398.5193							
Prob>chi2	0.000							

Source: Research Data, 2019

Based on the findings in Table 4.8, capital intensity was at a high mean of 0.395 in 2013 while the lowest was 0.215 in 2011. There was however no trend in capital intensity over the years (F= 0.82, ρ=0.5531>0.05).

4.2.3 Diagnostic Tests

4.2.3.1 Normality Test

Normality test helps to determine how likely it is for a random variable underlying the data set to be normally distributed (Field, 2005). There are several normality tests such as Skewness/ Kurtosis test, Jarque Bera test, Shapiro Wilk test, Kolmogorov-Smirnov test. The study incorporates the use of skewness/kurtosis test, Jarque-Bera test and Shapiro Wilk test.

Skewness is a measure of the asymmetry of the probability distribution of a random variable about its mean. It represents the amount and the direction of skew. On the other hand, Kurtosis represents the height and sharpness of the central peak relative to that of a standard bell curve. Skewness/Kurtosis presents a test for normality based on skewness and another based on kurtosis and then combines the two tests into an overall test statistic.

The results of Skewness/Kurtosis in Table 4.9 shows that the number of observations are 278 and the probability of skewness is 0.361 implying that skewness is normally distributed (p-value of skewness > 0.05). Similarly, 0.272 Pr(Kurtosis) indicates that kurtosis is asymptotically distributed (p-value of kurtosis > 0.05). Finally, χ^2 is 0.357

which is greater than 0.05 meaning that the null hypothesis cannot be rejected. Therefore, according to Skewness/Kurtosis test for normality, residuals show normal distribution.

Jarque-Bera test was also used to test the normality of research variables. In this test, if significance level is lower than 5% (Sig< 5%), the null hypothesis is rejected at confidence level 95%. Test assumptions are as follows:

H0: Data distribution is normal.

H1: Data distribution is not normal.

For the Jarque-Bera Test, if the p-value is lower than the χ^2 value then the null hypothesis cannot be rejected. It can therefore be concluded that the residuals are normally distributed. From Table 4.9, the χ^2 was 0.3818 which is greater than 0.05 meaning that the null hypothesis cannot be rejected. The implication is that there is no violation of the normal distribution assumption.

Table 4.9 Skewness/Kurtosis and Jarque-Bera Test

Skewness/Kurtosis tests for Normality

					------- joint ------	
Variable	**Obs**	**Pr(Skewness)**	**Pr(Kurtosis)**	**adj**	**chi2(2)**	**Prob>chi2**
Myresiduals	278	0.361	0.272		2.060	0.357

Jarque-Bera normality test: 1.926 Chi(2) .3818

Jarque-Bera test for Ho: normality:

Source: Research Data, 2019

Shapiro Wilk Normality test was also used to test the assumption of normality. As depicted in Table 4.10, the p-values of the Shapiro-Wilk's tests are computed under the assumption that the residuals show normal distribution. Since the p-value (0.536) is larger than 0.05, the hypothesis of normality cannot be rejected.

Table 4.10 Shapiro-Wilk W test

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
Myresiduals	278	0.831	1.043	1.69	.536

Source: Research Data, 2019

4.2.3.2 Unit Root Test

When there is a stationary process the mean, the variance and auto covariance stay unchanged regardless of the period which we measure (Verbeek 2004). It necessitates testing stationary of variables before estimation of model. It is not recommended to use some tests such as Dickey-Fuller test and Philips-Pron test for panel data since they are less capable in determination of stationary. In order to conduct stronger stationary tests in panel models, it is suggested to pool data and then test their stationary level (Andreas, 2007). Leven, Lin and Chu, Harris-Tsavalis tests and Im-Pesaran-Shin unit-root test were used to determine presence of unit root in panel data.

As shown in Table 4.11, the significance level was less than 5% for stationary testing of all variables. This implies that the research variables are stationary at confidence level 95%.

Table 4.11 Unit root test

	Levin-Lin-Chu unit-root test		Harris-Tzavalis unit-root test		Im-Pesaran-Shin unit-root test	
	Statistic	p-value	Rho	p-value	Z-t-tilde-bar	p-value
ECTR	-5.556	0.000	-0.308	0.000	-4.088	0.000
BS	-2.921	0.002	-0.143	0.000	-4.948	0.000
BI	-7.599	0.000	-0.296	0.000	-6.197	0.000
BG	5.134	0.000	-0.146	0.000	-5.428	0.000
COS	-4.961	0.000	-0.252	0.000	-5.094	0.000
LEV	-4.154	0.000	-0.282	0.000	-6.533	0.000
CI	-3.046	0.001	0.454	0.000	-2.690	0.004

Source: Research Data, 2019

4.2.3.3 Heteroscedasticity

If error terms do not have constant variance, they are said to be heteroscedastic. On the other hand, when the variance of the error term is constant, it is called homoscedasticity (Williams, 2015). The study used Breusch and Pegan Lagrangian Multiplier test to identify the presence of heteroscedasticity. The null hypothesis for the test is homoscedasticity and alternative hypothesis suggest heteroscedasticity.

From Table 4.12, since the p values are 0.52, we accept the null hypothesis. Thus, the model does not suffer from heteroscedasticity. Further, the Cameron & Trivedi's decomposition of IM test indicated that the probability value of the chi-square statistic is more than 0.05. Therefore, the null hypothesis of constant variance cannot be rejected at 5% level of significance. It implies there is no presence of heteroscedasticity in the residuals.

Table 4.12 Test for Heteroscedasticity

	chi2(1)	**Prob > chi2**
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	0.51	0.52
White's test for Ho: homoskedasticity against Ha: unrestricted heteroskedasticity	36.91	0.11
Cameron & Trivedi's decomposition of IM-test		
Heteroskedasticity	48.25	0.07
Skewness	7.96	0.34
Kurtosis	0.59	0.44
Total	56.81	0.08

Source: Research Data, 2019

4.2.3.4 Multicollinearity

For enhancement of the regression validity, multicollinearity test was performed. Presence of multicollinearity in regression can cause independent variables to be closely

correlated with one another, leading to a bias in the probability values (p-values). In testing for the presence of multicollinearity, the Variance Inflation Factors (VIF) test and tolerance was performed in STATA. These tests measure how the standard errors inflate the coefficients in the regression model, leading to a bias in the p-values. An ideal VIF should be less than ten and the tolerance value must be higher than 0.1(Akpa, 2011).

Table 4.13 shows that the tolerance value for each independent variable is higher than 0.1 and the VIF value is less than 10. This rules out the existence of multicollinearity.

Table 4.13 Multicollinearity test

Variable	VIF	1/VIF
BI	2.180	0.459
CI	1.510	0.662
BG	1.450	0.689
BS	1.440	0.694
COS	1.200	0.833
LEV	1.090	0.917
Mean VIF	1.478	

Source: Research Data, 2019

4.2.3. 5 Autocorrelation

One of the fundamental assumptions of Linear Regression Model is that the covariance between the error terms over the time is equal to zero, or the error terms are not correlated with each other (Brooks, 2010). If, however, the error terms are correlated it creates the problem of autocorrelation or serial correlation, which leads to making the standard error biased. This is the case because, with serial correlation, the standard OLS

estimators no longer remain the minimum variance ones. Serial correlation causes the standard errors of the coefficients to be smaller than they actually are and higher R-squared. This follows that a diagnostic test is required to check for the presence of serial correlation after each standard OLS regression of the analysis. Although the graphical method is commonly used as a first-hand method to judge the presence of autocorrelation, to confirm the presence of autocorrelation, a formal statistical test is required to be applied. This study applied Wooldridge test to test for autocorrelation. The null hypothesis is no serial correlation.

From the findings in Table 4.14, null hypothesis of no serial correlation cannot be rejected at 5% level of significance.

Table 4.14 Autocorrelation test

Wooldridge test for autocorrelation in panel data	
H0: no first-order autocorrelation	
F(1, 32)	0.448
Prob > F	0.0824

Source: Research Data, 2019

4.2.3.6 Specification Error Test

Table 4.15 highlights the results of the Ramsey RESET test. The findings reveal that the probability values of the computed statistics in the Ramsey RESET test are more than the

threshold value of 0.05 which implies that the model was correctly specified (Studenmund, 2000).

Table 4.15 Ramsey RESET

(test using powers of the fitted values of ECRT)

Ho:	model has no omitted	Variables
	F(3, 296) =	11.97
	Prob > F =	0.08

Source: Research Data, 2019

4.2.3.7 Linearity Test

To test linearity the study used coefficient of determination (R^2) and ANOVA test ((F stat). Based on the findings in Table 4.16, the p values for Fstat were all less than 0.05 indicating linearity between the independent variable (BS, BI, BG and COS) and dependent variable (ECTR). Further, findings showed that board independence explained the highest contribution in ECTR with 36% variation (R^2=.36) followed by board size explaining 18% variation in ECTR (R^2=.18). Corporate ownership structure had the lowest contribution (R^2=.03)

Table 4.16 Linearity test

	F stat	Prob > F	R-squared	Adj R-squared	Root MSE
ECTR*BS	60.59	0.00	0.18	0.18	0.95
ECTR*BI	153.01	0.00	0.36	0.35	0.84
ECTR*BG	45.80	0.00	0.14	0.14	0.97
ECTR*COS	7.49	0.01	0.03	0.02	1.03

Source: Research Data, 2019

4.2.4 Correlation Results

Correlation is a method of assessing a probable two-way linear association between two measurable variables. The extent of correlation is measured by a statistic called the correlation coefficient, which represents the strength of the putative linear association between the two selected variables. In other words, it is a statistic representing how closely two variables co-vary; it is a dimensionless quantity whose value can vary from −1 (perfect negative correlation) through 0 (no correlation) to +1 (perfect positive correlation).

The findings of correlation are presented in table 4.17.

Table 4.17 Correlation Results

	ECTR	BS	BI	BG	COS	LEV	CI
ECTR	1						
BS	.423**	1					
BI	.596**	.524**	1				
BG	.377**	.340**	.468**	1			
COS	-.162**	-0.117	-.139*	0.113	1		
LEV	-0.026	0.109	.255**	.197**	0.004	1	
CI	-.247**	.158**	.160**	.310**	.315**	0.037	1

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

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

Source: Research Data, 2019

The findings reveal that there was a positive correlation between board size and effective corporate tax rates ($r = 0.423$, $p < 0.01$). This means that as board size increases, effective corporate tax rate also increases. The correlation between board independence and effective corporate tax rate is positive ($r = 0.596$, $p < 0.01$) and significant. Furthermore, there is positive correlation between board gender diversity and effective corporate tax rate ($r = 0.377$, $p < 0.01$). This implies that as board independence and board gender diversity increase, effective corporate tax rate also increases. Corporate ownership structure has a negative correlation ($r = -0.162$) with effective corporate tax rate and the relationship is significant at $p < 0.01$. This means that as ownership concentration

increases, effective corporate tax rate decreases. The findings also reveal that leverage is negatively correlated with effective corporate tax rate ($r = -0.026$). The relationship is however not significant. In addition, capital intensity has a negative correlation with effective corporate tax rate ($r = -0.242$, $p < 0.01$). This suggests that as capital intensity increases, effective tax rate decreases.

4.2.5 Hausman Test

The major challenge faced while conducting panel data analysis is to choose between random effects model and fixed effects model for regression analysis. This is overcome by conducting the Hausman test. The hypotheses for the test are as follows:

Null hypothesis: Random effect model is appropriate.

Alternative hypothesis: Fixed effect model is appropriate

After running the Hausman test, if the p value is significant at 5% then we have to reject the null hypothesis and accept the alternative hypothesis, that is, we should use the fixed effect model. From the results in Table 4.18, the chi-square value of 3.34 was not significant, p-value = 0.752 hence the hypothesis of "difference in coefficients not systematic" was not rejected. This means that the most appropriate model for regression analysis for this study was the random effects model.

Table 4.18 Hausman Test

	---- Coefficients ----			
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	Fe	**Re**	**Difference**	**S.E.**
BS	0.158	0.148	0.010	0.043
BI	0.471	0.452	0.019	0.048
BG	0.235	0.273	-0.038	0.043
COS	-0.105	-0.136	0.031	0.042

---

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 3.34

Prob>chi2 = 0.752

Source: Research Data, 2019

Based on the Hausman test, the study hypotheses were tested using a random effect model. The random effect results were used in the final analysis to overcome the deficiencies associated with the fixed effect results similar to Wachira (2017). As Kohler and Kreuter (2009) suggest the random effect estimator handles better those models that contain time-invariant variables that are usually omitted by the fixed-effects model.

4.3 Regression Results

The study used the random effects model to test the first four hypotheses. The results are presented in Table 4.19.

Table 4.19 Random effects model

			Number of obs	=	278	
Random-effects GLS regression			Number of groups	=	40	
Group variable: firmid			Obs per group: min	=	3	
R-sq: within = 0.5033			Avg	=	5.5	
between = 0.534			Max	=	7	
overall = 0.5155			Wald chi2(6)	=	259.54	
corr(u_i, X) = 0 (assumed)			Prob > chi2	=	0.0019	
ECTR	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
BS	0.148	0.070	2.120	0.034	0.011	0.285
BI	0.452	0.102	4.430	0.000	0.252	0.652
BG	0.273	0.087	3.140	0.002	0.102	0.443
COS	-0.136	0.100	-1.360	0.004	-0.333	0.060
_cons	-3.399	0.672	-5.060	0.000	-4.715	-2.082
sigma_u	0.293					
sigma_e	0.728					
Rho	0.139					

Source: Research Data, 2019

The relevant results to take note of are the p-values and the coefficient of the regressors. The significance level is set at 95% levels, with p-values greater than 0.05 considered to be insignificant.

The Wald χ^2 test is used to check whether the response variable, effective corporate tax rate is dependent on the model. If p-value related to the Wald χ^2 is < 0.05 then the

response variable significantly depends on the model. From the findings, Wald χ^2 (6) = 259.54, p-value = 0.0019 indicating that effective corporate tax rate depends on the model meaning that the change in ECTR is dependent on the effects of the explanatory variables.

Furthermore, the estimated standard deviation of α_i (sigma_u) was 0.293 which is smaller than the standard deviation of ε_{it} (sigma_e) which was 0.728 suggesting that the individual-specific component of the error is less important than the idiosyncratic error. The standard error component model assumes that the regression disturbances are homoscedastic.

The random effects model show that board size, board independence, board gender diversity and corporate ownership structure explain 51.55% variation in the effective corporate tax rate (R^2= 0.5155, p< 0.05). It implies that 48.45% variation in effective corporate tax rates is explained by other factors.

4.3.1 Board Size and Effective Corporate Tax Rate

The results in Table 4.19 show that board size had a positive and significant effect on effective corporate tax rate (β=.148, p = 0.034). The null hypothesis that board size has no significant effect on effective corporate tax rate is thus rejected and it is concluded that, there is up to .148-unit increase in effective corporate tax rate for each unit increase in board size.

Consistent with this result, Lanis and Richardson (2011) in a study of the effect of board of director composition on corporate tax aggressiveness found that the level of tax

management is significantly affected by board size. The findings are also in support of the results by Ribeiro *et al.* (2015) which indicated that large boards are related to high effective corporate tax rates. This can be explained by the fact that as the size of the board increases, there is more representation of shareholders' and stakeholders interests which denies managers the opportunity for rent extraction activities such as tax avoidance.

Contrary to the results of this study, Aliani and Zarai (2012) found out that there is no significant relationship between board size and effective tax rates. Similarly, Khaoula and Ali (2012) found an insignificant relationship between board size and effective corporate tax rate. This was attributed to the fact that the board was unable to effectively monitor management hence the management made decisions that they deemed fit for themselves.

Pratama (2017), on the other hand obtained results indicating a significant negative relationship between the size of the board and effective tax rates implying the higher the number of directors, the lower the effective tax rate. . Păunescu *et al.* (2016) also found a negative and significant relationship between the two. Similarly, Khamoussi, Neifar and Abdelaziz (2016) found significant negative relationship between board size and effective tax rates among American firms listed on the NASDAQ 100. The negative association between the two may be attributed to difficulty faced by large boards in arriving at a consensus thus allowing management to take decisions that favour them.

4.3.2 Board Independence and Effective Corporate Tax Rate

From Table 4.19, Board independence had a positive and significant effect on effective corporate tax rate (β=.452, p = 0.000)). The null hypothesis that board independence has

no significant effect on effective corporate tax rate is therefore rejected. The results indicate that for every unit increase in board independence there is 0.452-unit increase in effective corporate tax rate.

This finding is in line with the result obtained by Khaoula and Ali (2012) indicating that board independence increases effective tax rates. The positive effect of board independence on effective corporate tax rate is due to the fact that the non- executive directors engaged in better monitoring of the management. Further support for this finding is by Ribeiro *et al.* (2015) who obtained results showing a significant positive relationship between the number of independent directors and the effective corporate tax rate (ECTR). Another study by Oyenike *et al.* (2016) also shows a significant relationship between board independence and tax aggressiveness. Further, Lanis and Richardson (2011) established that the more the number of independent members of board of directors, the less the firm will turn to activities aimed at lowering the effective tax rates hence the higher the effective tax rates. As Zhou (2011) opines, companies with more independent directors are less likely to be affected by tax aggressiveness. The possible explanation for this is that outside directors shield shareholders and stakeholders from managerial opportunism since they represent the interests of these shareholders and stakeholders. Consequently, companies with a high number of non-executive directors would manifest higher rates of effective tax rates.

Contrary to the findings of this study, Pratama (2017) established that board independence had no influence on effective tax rates. The reason for this could be that

there was low presence of non-executive directors on the board which limited their influence on board decisions.

4.3.3 Board Gender Diversity and Effective Corporate Tax Rate

According to Table 4.19, Board gender diversity had a positive and significant effect on effective corporate tax rate (β=0.273, p = 0.002). The study therefore rejects the null hypothesis that board gender diversity has no significant effect on effective corporate tax rate. This result suggests that there is up to 0.273-unit increase in effective corporate tax rate for each unit increase in board gender diversity.

This result support that of Boussaidi and Hamed (2015) who in their study of 39 Tunisian listed firms obtained results showing a significant positive effect of board gender diversity on effective tax rates. Similarly, Zemzem and Ftouhi (2013) reported a significant influence on tax aggressive activities by female directors among SBF 120 Index French companies. Aliani *et al* (2011) also established the existence of a positive relationship between board gender diversity and effective tax rates. The reason for this could be that female directors are usually against strategies aimed at lowering effective tax rates within the firm thus work towards increasing tax compliance. Indeed the finding of this study lends credence to the finding by Kastlunger *et al.* (2016) that women generally manifest higher level of tax compliance than their male counterparts.

Although, in the study conducted by Oyenike *et al.* (2016) on listed banks in Nigeria between 2012-2014 periods it was found that the presence of women on the board is positively related to effective tax rates, the effect is not significant. This could be

explained by the presence of a low number of women on these boards which hinder them from asserting their authority on tax decisions.

Khaoula and Ali (2012) on their part, which is against the finding of this study obtained results showing that presence of female directors on the board has no significant effect on effective tax rates, a factor they attribute to the low percentage of women on the boards. Equally, Aliani and Zarai (2012a) did not find the presence of women on the board to have a significant impact on tax planning among American firms. This could be attributed to low percentage of female directors which hampers their influence on board decisions.

4.3.4 Corporate Ownership Structure and Effective Corporate Tax Rate

From Table 4.19, Corporate ownership structure is shown to have a negative and significant effect on effective corporate tax rate (β=-0.136, p = 0.004). The study therefore rejects the hypothesis that corporate ownership structure has no significant effect on effective corporate tax rate. According to the findings, an increase in corporate ownership structure by one unit would lead to a 0.136-unit decline in effective corporate tax rate.

Although their exists scanty literature linking the two, this result is in agreement with Fan and Wong (2002). The negative relationship could be explained by the fact that majority shareholders will look for ways of maximizing their after tax income and will therefore induce managers to act in this way. Although Bradshaw *et al.* (2014) in a study of ownership structure and tax avoidance among Chinese firms reported a negative relationship between the two, the results were insignificant. Mahenthiran and Kasipillai

(2011) also found a negative relationship between ownership structure and effective tax rate among Malaysian listed firms. The relationship was however not statistically significant.

Contrary to the results of this study, Salaudeen and Ejeh (2018) in a study of Equity ownership structure and corporate tax aggressiveness among listed Nigerian firms established a positive but insignificant relationship between the two. The possible explanation for the insignificant results is that majority shareholders may not be effectively monitoring management to ensure they make decisions that are in the interest of majority shareholders.

Studies by Boussaidi and Hamed (2015), Li (2014) and Chen *et al*. (2010) reported a positive and significant relationship between ownership concentration and effective tax rate. This may be attributed to the fact that the presence of high ownership concentration is likely to make shareholders to closely monitor management due to the huge risk they bear. This close supervision denies managers the opportunity to mask their rent extraction activities resulting in higher effective tax rates.

Evidently, there is limited empirical work on the relationship between corporate ownership structure and effective corporate tax rate. This study therefore offers sufficient insights on the negative link between ownership structure and effective corporate tax rate.

4.4 Moderating Effect of Capital Intensity

Results of the moderation effect of Capital intensity on the relationship between corporate governance and effective tax rates are presented in table 4.20.

Table 4.20 Moderating Effect of Capital Intensity

ECTR	Model 1 B(SE)	Model 2 B(SE)	Model 3 B(SE)	Model 4 B(SE)	Model 5 B(SE)	Model 6 B(SE)
_cons	-3.24(.73)**	-1.48(.76)	-1.57(.75)*	-2.10(.76)*	-2.72(.74)**	(-4.21(.91)**
BS	0.21(.08)*	0.16(.07)*	-0.03(.10)	-0.09(.10)	-0.14(.10)	(-0.12(.09)
BI	0.53(.11)*	0.44(.10)**	0.52(.10)**	0.82(.14)**	0.87(.14)**	0.91(.14)**
BG	0.26(.10)*	0.16(.09)	0.19(.09)*	0.14(.09)	0.27(.09)**	0.28(.09)*
COS	-0.31(.011)*	-0.53(.11)**	-0.48(.11)**	-0.61(.12)**	-0.56(.12)**	(-0.25(.16)
CI		0.19(.04)**	0.43(.09)**	-1.97(.80)*	-2.76(.80)*	(-3.11(.78)**
BS_CI			0.33(.06)*	0.12(.04)**	-0.15(.04)**	(-0.14(.04)**
BI_CI				0.57(.20)**	0.67(.18)**	0.69(.17)**
BG_CI					0.17(.20)**	0.09(.02)**
COS_CI						-0.06(.02)
R-sq: within	0.53	0.57	0.59	0.61	0.65	0.65
Between	0.59	0.68	0.68	0.68	0.66	0.66
Overall	0.52	0.58	0.64	0.70	0.73	0.73
R-sq Δ	.24	.06	.06	.06	.03	.00
Wald chi2(2)	236.58	295.78	312.94	333.97	385.23	402.74
Prob > chi2	0.00	0.00	0.00	0.00	0.00	0.00
sigma_u	0.19	0.13	0.15	0.17	0.20	0.11
sigma_e	0.74	0.70	0.69	0.68	0.64	0.64
Rho	0.07	0.03	0.04	0.06	0.09	0.03

Note: * and ** means significant level at 5% and 1% respectively

Source: Research Data, 2019

4.4.1 Moderating Effect of Capital Intensity on Board Size and ECTR

The moderation results in Table 4.20 show that capital intensity had a positive and significant moderating effect on the relationship between board size and effective corporate tax rate ($R^2\Delta$=0.06; β= 0.33; ρ<0.05). The results indicate that there is a 6% increase in the variation of the effective corporate tax rate by the addition of capital

intensity on the relationship between board size and effective corporate tax rate. The increase is significant ($\rho<0.05$) and positive ($\beta= 0.33$). The results suggest that capital intensity strengthens the relationship between board size and effective corporate tax rate. The null hypothesis that capital intensity has no significant moderating effect on the relationship between board size and effective corporate tax rate was thus rejected.

This finding is in line with prior literature that has predicted the existence of a relationship between capital intensity and effective corporate tax rate. Examples of such studies include Aliani and Zarai (2012a), Khamoussi *et al*. (2016) and Minnick and Noga (2010).

4.4.2 Moderating Effect of Capital Intensity on Board Independence and ECTR

The results of Table 4.20 indicate a positive and significant moderating effect of capital intensity on the relationship between board independence and effective corporate tax rate ($R^2\Delta=0.06$; $\beta= 0.57$; $\rho<0.01$). The results indicate that there is a 6% increase in the variation of the effective corporate tax rate by the addition of capital intensity on the relationship between board independence and effective corporate tax rate. The increase is significant ($\rho<0.01$) and positive ($\beta= 0.57$). The results suggest that capital intensity strengthens the relationship between board independence and effective corporate tax rate. This implies that capital intensity contributes to variation in effective tax rate. The null hypothesis that capital intensity has no significant moderating effect on the relationship between board independence and effective corporate tax rate was thus rejected.

This finding is in line with past studies that have predicted existence of a relationship between capital intensity and effective corporate tax rate. These studies include Zhou (2011), Lanis and Richardson (2011), Ribeiro *et al*. (2015) and Pratama (2017).

4.4.3 Moderating Effect of Capital Intensity on Board Gender Diversity and ECTR

In addition, capital intensity had a positive and significant moderating effect on the relationship between board gender diversity and effective corporate tax rate ($R^2\Delta$=0.03; β= 0.17; ρ<0.01). The results indicate that there is a 3% increase in the variation of the effective corporate tax rate by the addition of capital intensity on the relationship between board gender diversity and effective corporate tax rate. The increase is significant (ρ<0.01) and positive (β= 0.17). The results suggest that capital intensity strengthens the relationship between board gender diversity and effective corporate tax rate. This implies that capital intensity contributes to variation in effective tax rate. The null hypothesis that capital intensity has no significant moderating effect on the relationship between board gender diversity and effective corporate tax rate was thus rejected.

This finding is in line with prior literature that has predicted existence of a relationship between capital intensity and effective corporate tax rate. Aliani *et al.* (2011), Khaoula and Ali (2012), Francis *et al.* (2014) and Oyenike *et al.* (2016) are some of the studies that have documented this relationship

The positive and significant moderating effect of capital intensity could be attributed to the deductibility of depreciation (capital allowances) on fixed assets when computing corporate tax liability. Different levels of capital intensity will thus lead to varied changes in effective corporate tax rates.

4.4.4 Moderating Effect of Capital Intensity on Corporate Ownership Structure and ECTR

Finally, the results in Table 4.20 show an insignificant moderating effect of capital intensity on the relationship between corporate ownership structure and effective corporate tax rate ($R^2\Delta$=0.00; β= -0.06; ρ>0.05). The results indicate that there was no change in the variation of the effective corporate tax rate by the addition of capital intensity on the relationship between corporate ownership structure and effective corporate tax rate. Therefore, capital intensity has no moderating effect on the relationship between corporate ownership structure and effective corporate tax rate. The study thus fails to reject the null hypothesis that capital intensity has no significant moderating effect on the relationship between corporate ownership structure and effective corporate tax rate.

This finding is against many past studies that have reported existence of a relationship between corporate ownership structure and effective tax rates. Such studies include *Chen et al.* (2010), Bradshaw *et al.* (2014), Li (2014), Boussaidi and Hamed (2015) and Salaudeen and Ejeh (2018. The insignificant moderating effect of capital intensity on the relationship between corporate ownership structure and effective corporate tax rate could be as a result of weak monitoring by majority shareholders which allows management to determine levels of investment in the fixed assets of these firms.

4.4.5 Nature of Moderating effect of Capital Intensity using Modgraphs

As concerns the moderating effect of capital intensity, Figure 4.1 reveals an enhancing effect that as board size and capital intensity increases effective corporate tax rate at all levels also increases as indicated by the steepness of the slopes. From the graph,

companies with a high number of members on its board with high capital intensity levels will record the highest effective corporate tax rates. So, the null hypothesis that capital intensity has no moderating effect on the relationship between board size and ECTR is not supported.

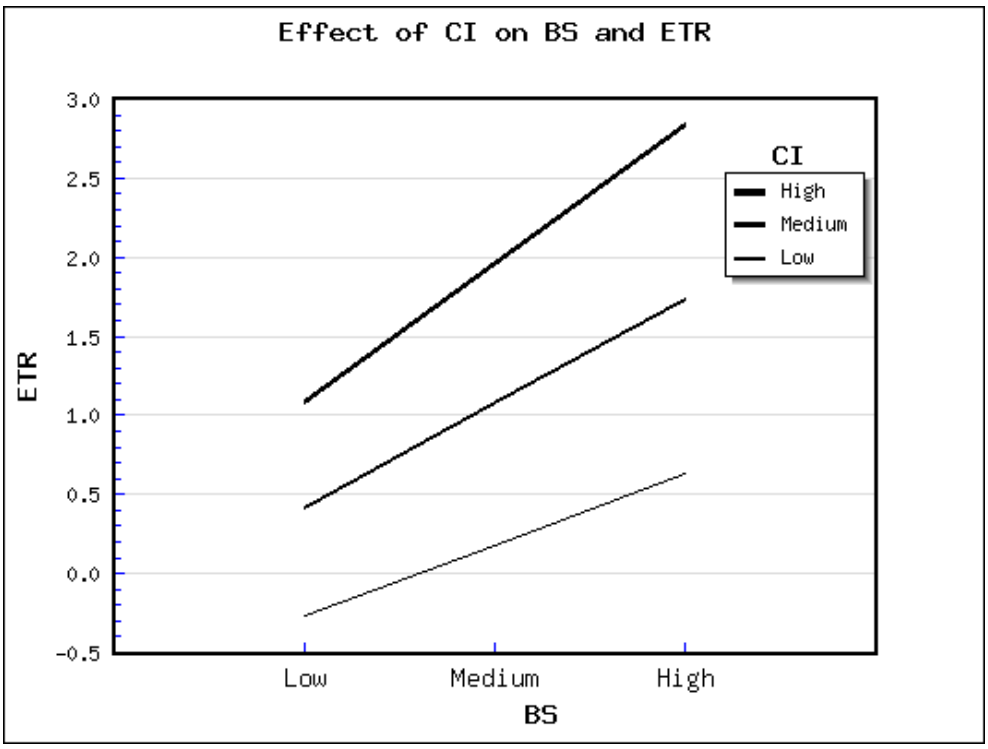

Figure 4.1 Modgraph of capital intensity on the relationship between board size and ETR

Source: Research Data, 2019

The interaction effect in Figure 4.2 reveals an enhancing effect that as board independence and capital intensity increases effective corporate tax rate at all levels also increases as indicated by the steepness of the slopes. From the graph, companies having high board independence levels with high capital intensity levels record the highest effective corporate tax rates. It can also be observed that at some point between low to medium levels of board independence, ECTR is the same for companies with low, medium or high capital intensity levels. So, the null hypothesis that capital intensity has no moderating effect on the relationship between board size and ECTR is not supported.

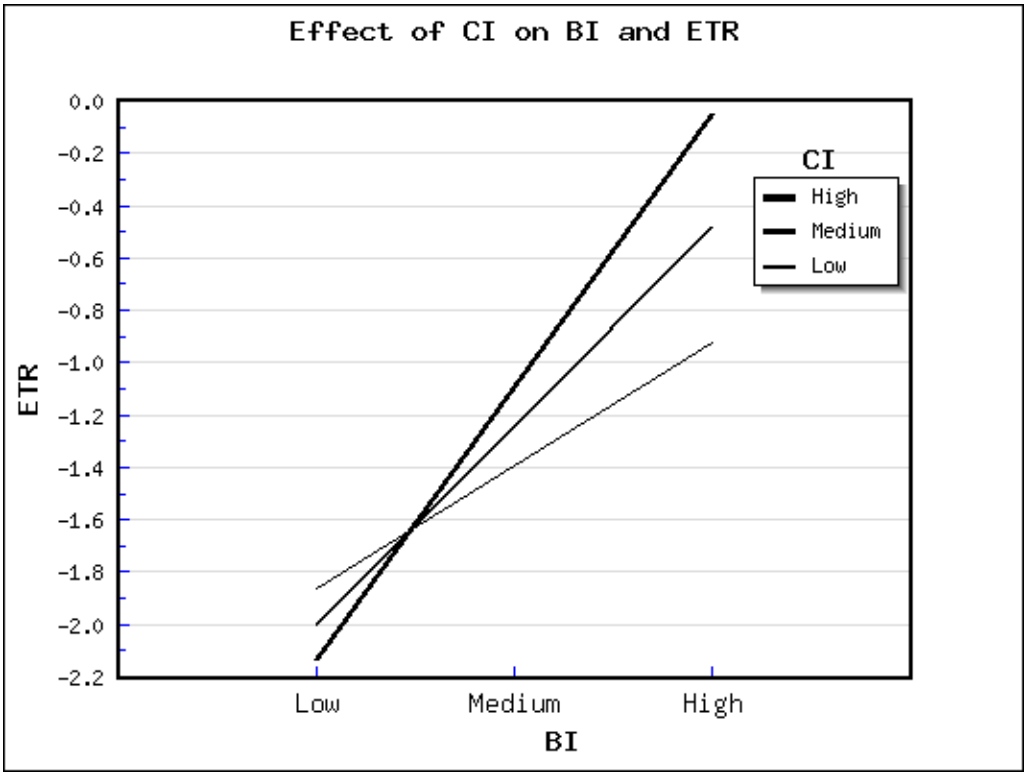

Figure 4.2 Modgraph of capital intensity on the relationship between board independence and ETR

Source: Research Data, 2019

As concerns the moderating effect of capital intensity on the relationship between board gender diversity, Figure 4.3 reveals an enhancing effect that as board gender diversity and capital intensity increases effective corporate tax rate at all levels also increases as indicated by the steepness of the slopes. From the graph, companies with a high percentage of female directors on its board with high capital intensity levels will record the highest effective corporate tax rates. So, the null hypothesis that capital intensity has no moderating effect on the relationship between board gender diversity and ECTR is not supported.

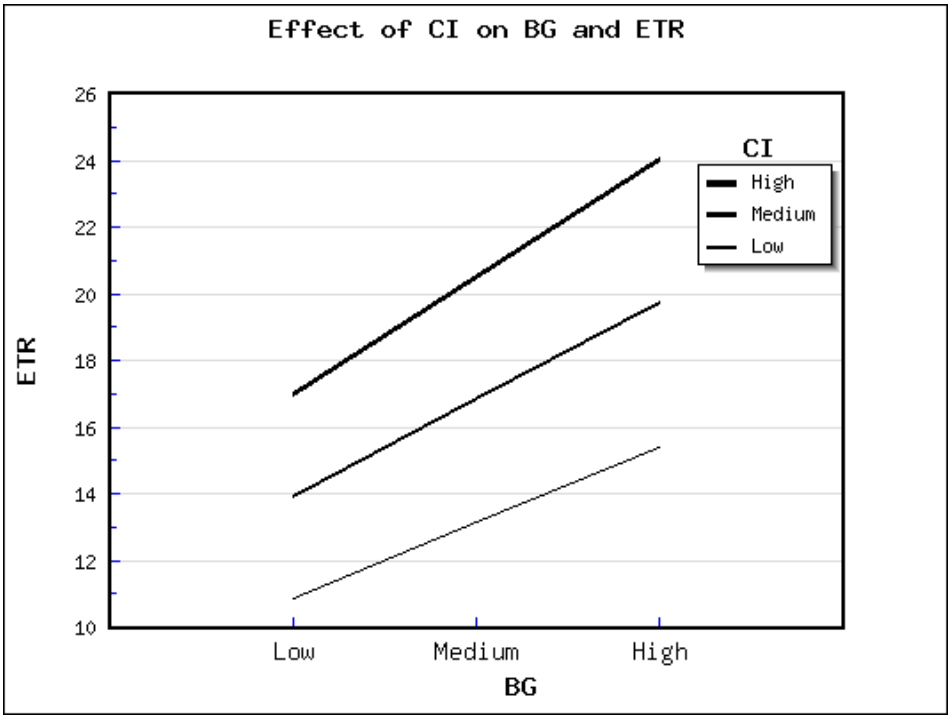

Figure 4.3 Modgraph of capital intensity on the relationship between board gender and ETR

Source: Research Data, 2019

4.5 Moderating Effect of Leverage

Results of the moderation effect of leverage on the relationship between corporate governance and effective tax rates are presented in Table 4.21.

Table 4.21 Moderating Effect of Leverage

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
ECTR	**B(SE)**	**B(SE)**	**B(SE)**	**B(SE)**	**B(SE)**	**B(SE)**
_cons	-3.24(.73)**	-4.59(.75)**	-4.48(.74)**	-4.51(.71)**	-4.76(.64)**	(-4.56(1.59)**
BS	0.21(.08)*	0.21(.09)*	0.27(.08)**	0.20(.08)*	0.14(.08)	0.14(.08)
BI	0.53(.11)*	0.65(.12)*	0.61(.12)**	0.72(.12)**	0.65(.11)**	0.65(.11)**
BG	0.26(.10)*	0.23(.10)*	0.27(.10)*	0.24(.01)	0.34(.09)**	0.35(.09)**
COS	-0.31(.011)*	-0.21(.12)	-0.27(.12)*	-0.40(.12)**	-0.25(.11)*	(-0.30(.34)
LEV		-0.17(.04)**	-0.46(.10)	-1.92(.39)**	-2.58(.37)**	(-2.48(.79)**
BS_LEV			-0.52(.04)**	0.13(.03)**	0.09(.03)**	0.10(.03)**
BI_LEV				-0.23(.07)**	0.33(.07)**	0.33(.08)**
BG_LEV					-0.27(.06)**	0.25(.04)**
COS_LEV						-0.05(.05)
R-sq: within	0.53	0.61	0.62	0.66	0.74	0.7404
Between	0.59	0.59	0.65	0.65	0.62	0.6208
Overall	0.52	0.61	0.68	0.76	0.82	0.82
R-sq Δ	.24	.05	.06	.08	.06	.00
Wald chi2(2)	236.58	252.19	275.24	312.88	410.35	408.06
Prob > chi2	0	0.00	0	0	0	0
sigma_u	0.19	0.67	0.50	0.51	0.54	0.54
sigma_e	0.74	0.64	0.63	0.60	0.53	0.53
Rho	0.07	0.53	0.38	0.42	0.51	0.52

Note: * and ** means significant level at 5% and 1% respectively**.**

Source: Research Data, 2019

4.5.1 Moderating Effect of Leverage on Board Size and ECTR

The moderation results show that leverage had a negative and significant moderating effect on the relationship between board size and effective corporate tax rate ($R^2\Delta$=0.06; β= -0.52; ρ<0.01). The results indicate that there is a 6% increase in the variation of the effective corporate tax rate by the addition of leverage on the relationship between board size and effective corporate tax rate. The increase is significant (ρ<0.01) and negative (β= -0.52). The null hypothesis that leverage has no significant moderating effect on the relationship between board size and effective corporate tax rate is thus rejected.

This result implies that leverage contributes to variation in effective tax rate. This finding is in line with prior literature that has predicted a relationship between leverage and effective corporate tax rate. Examples of such studies include Aliani and Zarai (2012a), Khamoussi *et al.* (2016) and Minnick and Noga (2010).

4.5.2 Moderating Effect of Leverage on Board Independence and ECTR

Similarly, leverage had a negative and significant moderating effect on the relationship between board independence and effective corporate tax rate ($R^2\Delta$=0.08; β= -0.23; ρ<0.01). The results indicate that there is an 8% increase in the variation of the effective corporate tax rate by the addition of leverage on the relationship between board independence and effective corporate tax rate. The increase is significant (ρ<0.01) and negative (β= -0.23). The null hypothesis that leverage has no significant moderating effect on the relationship between board independence and effective corporate tax rate is thus rejected.

This result implies that leverage contributes to variation in effective tax rate. This finding is in line with prior literature that has documented a relationship between leverage and effective corporate tax rate. Examples of such studies include Zhou (2011), Lanis and Richardson (2011), Ribeiro *et al*. (2015) and Pratama (2017).

4.5.3 Moderating Effect of Leverage on Board gender diversity and ECTR

As well, the inclusion of leverage as a moderator on the relationship between board gender diversity and effective corporate tax rate strengthens the effect of board gender diversity on effective corporate tax rate ($R^2\Delta$=0.06; β= -0.27; ρ<0.01). The results indicate that there is a 6% increase in the variation of the effective corporate tax rate by the addition of leverage on the relationship between board gender diversity and effective corporate tax rate. The increase is significant (ρ<0.01) and negative (β= -0.52). The null hypothesis that leverage has no significant moderating effect on the relationship between board gender diversity and effective corporate tax rate was thus rejected.

The implication of the results in Table 4.21is that that leverage contributes to variation in effective tax rate. This finding is in line with prior literature that has predicted a relationship between leverage and effective corporate tax rate. Aliani *et al*. (2011), Khaoula and Ali (2012), Francis *et al*. (2014) and Oyenike *et al*. (2016) are some of the studies that have documented a relationship between leverage and effective tax rate.

The significant moderating effect of leverage may be attributed to the deductibility of interest expense when computing corporate tax liability. Different levels of leverage will thus lead to varied changes in effective corporate tax rates.

4.5.4 Moderating Effect of Leverage on Corporate ownership structure and ECTR

Finally, the results show an insignificant moderating effect of leverage on the relationship between corporate ownership structure and effective corporate tax rate ($R^2\Delta$=0.00; β= -0.05; ρ>0.05). The results show that there was no change in the variation of the effective corporate tax rate by the addition of leverage on the relationship between corporate ownership structure and effective corporate tax rate. The variation is not significant. Therefore, leverage has no moderating effect on the relationship between corporate ownership structure and effective corporate tax rate. The study thus fails to reject the null hypothesis that leverage has no significant moderating effect on the relationship between corporate ownership structure and effective corporate tax rate.

The meaning of the results in Table 4.21 is that leverage does not contribute to variation in the effective corporate tax rate. This finding is against many past studies that have reported existence of a relationship between leverage structure and effective tax rates. Such studies include *Chen et al.* (2010), Bradshaw *et al.* (2014), Li (2014), Boussaidi and Hamed (2015) and Salaudeen and Ejeh (2018. The insignificant moderating results may also be as a result of companies wanting to portray a positive picture in the eyes of debt providers due to strict debt covenants rather than using it as a tool to lower their effective tax rates. It could also be as a result of firms making capital structure decisions with the aim of reducing agency costs rather than benefiting from lower tax deduction (Lasfer, 1995).

4.5.5 Nature of Moderating effect of Leverage using Modgraphs

Regarding the moderating effect, Figure 4.4 reveals a decreasing effect that as board size and leverage increases, effective corporate tax rate at all levels decreases as indicated by the steepness of the slopes. The graph shows that firms having a high number of board members with high leverage levels record the lowest ECTR figures. Thus, the null hypothesis that leverage has no moderating effect on the relationship between board size and effective corporate tax rate was not supported.

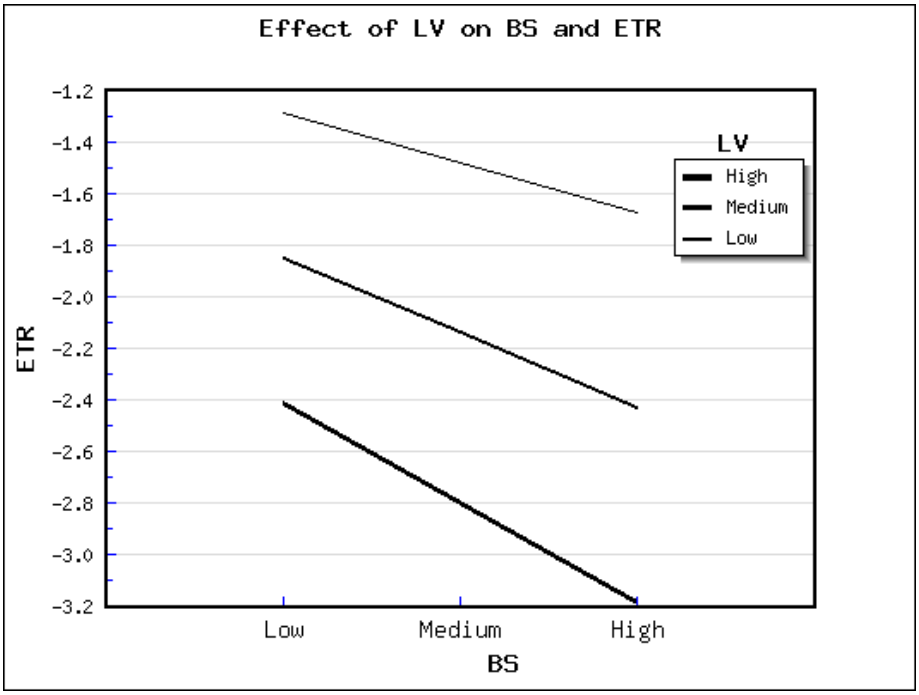

Figure 4.4 Modgraph of Leverage on the relationship between board size and ETR

Source: Research Data, 2019

The interaction effect in figure 4.5 reveals that as board independence and leverage increases, effective corporate tax rate decreases at high level of leverage, but increases at low level of leverage and is almost constant at medium level of leverage. The graph shows that companies will show varying responses to different levels of leverage and board independence. Thus, the null hypothesis that leverage has no moderating effect on the relationship between board size and effective corporate tax rate was not supported.

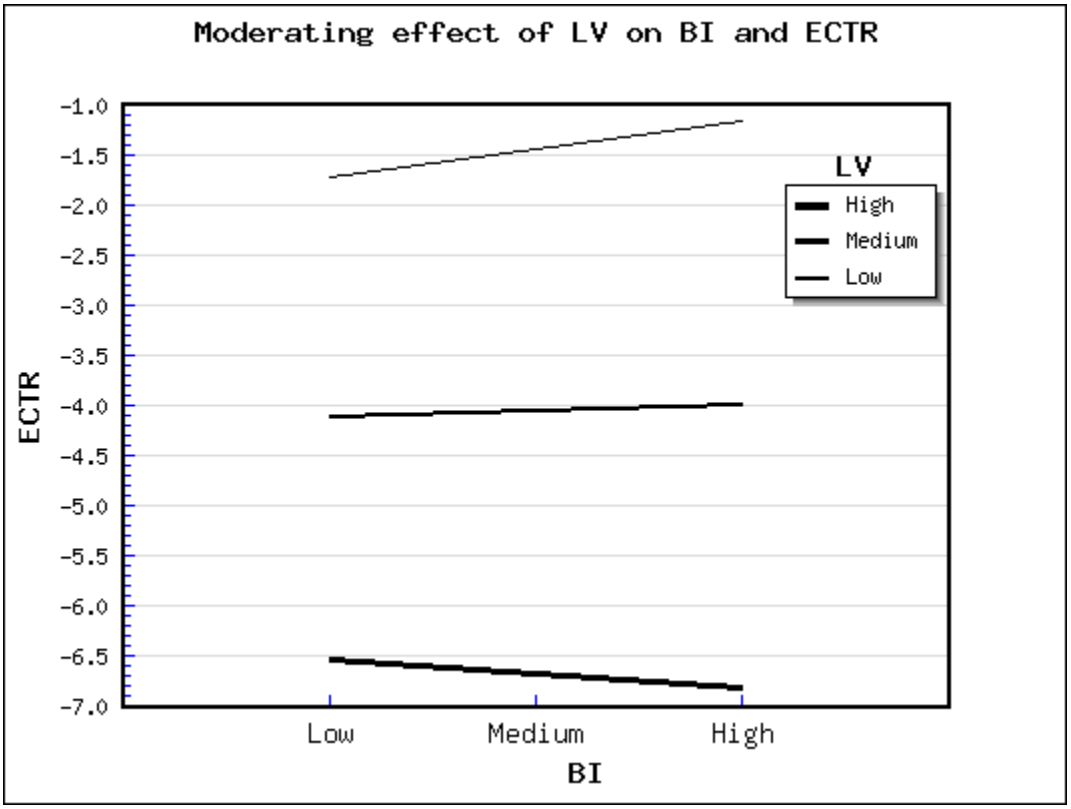

Figure 4.5 Modgraph of Leverage on the relationship between board independence and ETR

Source: Research Data, 2019

The interaction effect in figure 4.5 reveals a decreasing effect that as board gender diversity and leverage increases, effective corporate tax rate at all levels decreases as indicated by the steepness of the slopes. The graph shows that firms having a high percentage of female directors on its board with high leverage levels record the lowest ECTR figures. Thus, the null hypothesis that leverage has no moderating effect on the relationship between board gender diversity and effective corporate tax rate was not supported.

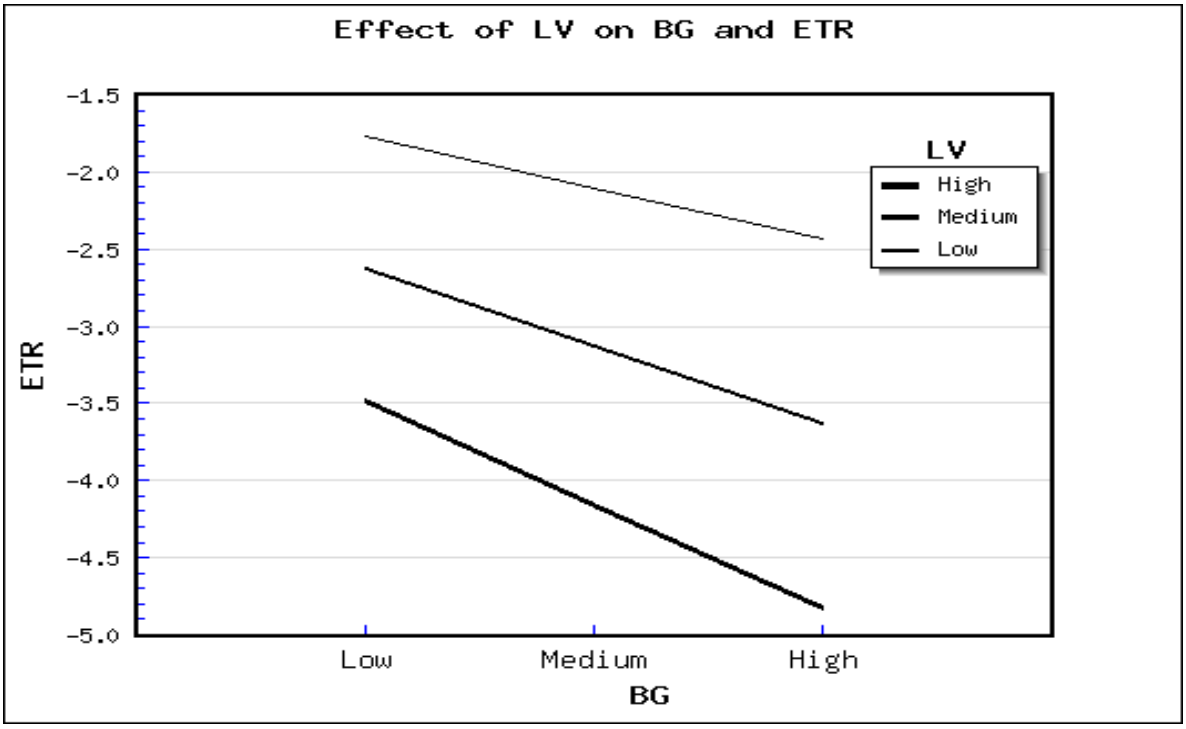

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Figure 4.6 Modgraph of Leverage on the relationship between board gender and ETR

Source: Research Data, 2019

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings of the study, conclusions, recommendations and suggestions for further research.

5.2 Summary of the Findings

The general objective of the study was to investigate the impact of corporate governance on effective corporate tax rates among listed firms in Kenya. Moderating effect of capital intensity and leverage on the relationship between corporate governance and effective corporate tax rate was also tested. Corporate governance in this study was proxied by board size, board independence, board gender diversity and corporate ownership structure. Effective corporate tax rate (ECTR) was computed as the ratio of cash tax paid to profit before tax. The target population of the study was the 67 firms listed on the Nairobi Securities Exchange as at 31st December, 2017. The choice of the NSE listed firms was informed by the fact that all listed companies are required to publicly publish their financial and annual reports and so data for both independent and dependent variables was readily available. Also all the listed firms are required to comply with the Code of Corporate Governance issued by the Capital Markets Authority. Kenya was selected as the study location due to the fact that it has in the recent past experienced widening budget deficits and ballooning public debt arising from inadequate tax revenue collections.

Descriptive statistics revealed that firms listed on the NSE had an average of 9 board members. Non-executive directors constituted 80% of the board membership. Further results indicated that board gender diversity was at a mean of 16.1% with the ownership structure at a mean of 66.4%. The average effective corporate tax rate was at 24.7%.

Diagnostic tests to ascertain whether the assumptions of the regression model were met were conducted. The outcome of the tests indicated that there was no violation of the assumption of normality as evidenced by the skewness/kurtosis test for normality together with the Jarque-Bera test. Moreover, there was no violation of the assumptions of heteroskedasticity, multicollinearity, unit root and autocorrelation.

The correlation findings revealed a positive correlation between board size, board independence, board gender diversity and effective corporate tax rate. However, there was a negative correlation between corporate ownership structure, leverage and capital intensity and effective corporate tax rate.

For regression analysis, the study used the random effects model following the results of the Hausman test which indicated that the random effects model was appropriate to test the hypotheses. The findings of the random effects model indicated that board size, board independence and board gender diversity had a positive and significant effect on effective corporate tax rate. On the other hand, corporate ownership structure was shown to have a negative and significant effect on effective corporate tax rate.

The moderations findings indicated that the use of capital intensity as a moderator enhances the relationship between board size and effective corporate tax rate. Similarly,

capital intensity strengthens the relationship between board independence and effective corporate tax rate. Furthermore, capital intensity as a moderating variable strengthens the relationship between board gender diversity and effective corporate tax rate. However, capital intensity was found to have no moderating effect on the relationship between corporate ownership structure and effective corporate tax rate.

Finally, the results on the moderation effect of leverage indicated that the use of debt financing enhances the relationship between board size and effective corporate tax rate. As well, the use of leverage as a moderator strengthens the relationship between board independence and effective corporate tax rate. Similarly, the relationship between board gender diversity and effective corporate tax rate is strengthened by leverage. However, leverage was found to have no significant moderating effect on the relationship between corporate ownership structure and effective corporate tax rate.

5.3 Conclusions

5.3.1 Effective Corporate Tax Rates

The study has shown that the average effective corporate tax rate for NSE listed firms is 24.7 % as opposed to the statutory tax rate of 30%. This means that approximately 17.7% of the expected corporate tax from the NSE listed firms is not paid. The 17.7% unpaid revenue may be attributed to tax avoidance activities by these firms.

5.3.2 Board Size and Effective Corporate Tax Rate

Evidence from the study suggests that larger boards are associated with higher effective corporate tax rates. One possible explanation is that as the size of the board increases,

instances of agency problems are reduced making it harder for management to engage in rent extraction activities of lowering effective tax rates. Larger boards also facilitate better monitoring which is in the best interests of the shareholders and other stakeholders.

5.3.3 Board Independence and Effective Corporate Tax Rate

The study established that an increase in the number of non-executive directors is associated with high levels of effective corporate tax rate. In other words, the more the number of non-executive directors on the board, the higher the tax paid. The results suggest that non-executive directors tend to maintain a good standing with the tax authorities so that they can gain legitimacy from the society. Additionally, independent directors perform better monitoring thus limiting managerial opportunism.

5.3.4 Board Gender Diversity and Effective Corporate Tax Rate

The findings of the study show that board gender diversity positively influences effective corporate tax rates. The results suggest that the increased presence of female directors on the board leads to higher levels of corporate tax payment. The result also lends credence to the fact that women manifest higher levels of tax compliance than their male counterparts. The implication therefore is that board gender diversity reduces incidences of corporate tax avoidance, thereby leading to increased effective corporate tax rate.

5.3.5 Corporate Ownership Structure and Effective Corporate Tax Rate

The study reveals that corporate ownership structure has a negative influence on effective corporate tax rate. It implies that the higher the ownership concentration the lower the effective corporate tax rate. It would appear a lower effective tax rate enhances earnings

to the majority shareholders and would therefore approve of it but monitor closely how it is done.

5.3.6 Moderating Effect of Capital Intensity

The study has revealed that capital intensity has a significant moderating effect on the relationship between board size, board independence, board gender diversity and effective corporate tax rate. It implies that capital intensity has an influence on the effective corporate tax rate alongside board size, board independence and board gender diversity. This could be attributed to the treatment of depreciation as a tax deductible item when computing corporate tax liability.

However, there was no moderating effect of capital intensity on the relationship between corporate ownership structure and effective corporate tax rate. This means that corporate ownership structure operates independently as a driver of effective corporate tax rate and is not moderated by capital intensity. This could be attributed to failure by majority shareholders to influence decisions on fixed assets investment.

5.3.6 Moderating Effect of Leverage

The study has revealed that leverage has a significant moderating effect on the relationship between board size, board independence, board gender diversity and effective corporate tax rate. It implies that leverage has an influence on the effective corporate tax rate alongside board size, board independence and board gender diversity. This could be attributed to the treatment of interest expense as a tax deductible item when computing corporate tax liability.

However, there was no moderating effect of leverage on the relationship between corporate ownership structure and effective corporate tax rate. This implies that corporate ownership structure operates independently as a driver of effective corporate tax rate and is not moderated by leverage. This could be explained by a desire by companies to portray a positive picture in the eyes of debt holders due to strict debt covenants rather than using leverage to manage taxes.

5.4 Recommendations

The study has shown that the average effective corporate tax rate is 24.7 % as opposed to the statutory tax rate of 30% indicating incidences of tax avoidance among the listed firms. There is therefore a need for policy makers to review and possibly overhaul the income tax architecture in Kenya with a view of sealing loopholes exploited by the listed firms to lower their effective tax rates. This would lead to enhanced revenue collection thereby cutting on the budget deficits and the growing public debt. Shareholders and investors should also consider ECTR in their evaluation of investment options since it may impact on the long-term value of the firm.

Secondly, the study has indicated that board size has a positive and significant effect on effective corporate tax rates. Policy makers should therefore advocate for larger boards because they offer different skills, views and expertise which enhance the quality of decisions. Larger boards are also difficult to manipulate by management and hence help to deter management from engaging in rent extraction activities such as tax avoidance.

Thirdly, Board of directors with a higher percentage of non-executive directors are associated with higher effective corporate tax rates. Non-executive directors being representatives of shareholders and other interest groups are mindful of the long term survival of the firm and so would not approve activities that could damage the legitimacy and existence of the firm such as excessive tax aggressiveness. There is therefore need for firms to have a higher proportion of non-executive directors so as to enhance tax compliance and maximization of shareholders wealth.

Fourthly, the presence of board gender diversity increases effective corporate tax rate. This means that companies with boards having a higher percentage of women will report higher effective corporate tax rates. There is therefore need for firms to increase women representation on the board since it promotes tax compliance. Policy makers can perhaps set the minimum number of women that should sit on the board.

Fifthly, less concentrated ownership structure exhibit higher effective tax rates among firms listed on the Nairobi Securities Exchange. Since this study established that majority of the listed firms have a concentrated ownership, there is need for policy makers to advocate for dilution in the shareholding of the firms listed on the NSE. This will enhance tax compliance. Also minority shareholders should take a keen interest in tax decisions since it may impact on the legitimacy and long-term survival of their companies due to potential penalties from tax authorities and reputational damage.

With regard to moderating effect of capital intensity on the relationship between corporate governance and effective corporate tax rate, the study recommends that capital intensity be considered alongside other determinants of ECTR since it has a significant

effect on the relationship between the two. For governments and those interested in maximization of tax revenue, they can consider capping or reducing the deductibility level of capital allowances since it lowers the tax payable. For those interested in minimization of the tax cost, they can invest more in capital assets to enjoy reduced tax bill.

Finally, regarding the moderating effect of leverage on the relationship between corporate governance and effective corporate tax rate, the study recommends that leverage be considered alongside other determinants of ECTR since it has a significant effect on the relationship between the two. For governments and those interested in maximization of tax revenue, they can cap or reduce the deductibility level of interest expense since it lowers the tax payable. For those interested in minimization of the tax cost, they can increase their debt financing to enjoy reduced tax bill.

5.5 Suggestions for Further Research

This study was limited to firms listed on the Nairobi Securities Exchange. Similar studies can be done using other sets of taxpayers in order to obtain a full picture of the subject matter.

This study found that the ownership structure has a negative and significant influence on effective corporate tax rate. This finding has provided insights on the relationship between the two variables as literature on this two is scanty. Future studies can be conducted to provide more insights regarding the relationship between these two variables.

Furthermore, although the study has rejected the null hypothesis and accepted the alternative hypothesis that board size, board independence and board gender diversity and corporate ownership structure have a significant effect on effective corporate tax rate, there is no evidence that effective corporate tax rate is entirely dependent on the four independent variables. As such further research needs to be carried out to establish what other factors affect the effective corporate tax rate.

This study unlike other previous studies used moderation variables; future studies can also incorporate various moderating variables in related studies to grow both theoretical and empirical literature in the subject of corporate governance and effective tax rates.

Finally, this study utilized cash tax paid in the computation of effective tax rate. Other studies can use other measures of effective tax rate.

REFERENCES

Adams, R.B. & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291-309.

Adams, R. B., Hermanlin, B. E., and Weisbach, M. S. (2010).The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey. *Journal of Economic Literature*, 48 (1), 58-107.

Adhikari, A., Derashid, C., Zhang, H., (2006). Political policy, political connections, and effective tax rates: longitudinal evidence from Malaysia. *Journal of Accounting and Public Policy* 25, 574-595.

Ahn & Moon (2001), Large-N and Large-T Properties of Panel Data Estimators and the Hausman Test. *USC CLEO Research Paper* No. C01-20

Akpa, A. (2011).*Knowledge creation process: concepts and applications in social science research*. Makurdi: Aboki Publishers

Alan., Bryman (2011). *Business Research Methods*. Bell, Emma, 1968- (3rd ed.). Cambridge: Oxford University Press

Aliani, K., Mhamid, I. and Zarai, M. (2011) Diversité en genre dans le Conseil d'Administration et optimisation fiscale: validation dans le contexte tunisien. *Global Journal of Management and Business Research,* 11, 41-50.

Aliani,K.. & A. Zarai, (2012a). Demographic diversity in the board and corporate tax planning in American firms, *Business Management and Strategy*,3(1), 72-86.

Aliani,K. & A. Zarai,(2012b).The board of directors and the corporate tax planning: empirical evidence from Tunisia. *International Journal of Accounting and Financial Repo*rting, 2(2), 142 -156.

Andersson, U., Cuervo-Cazurra, A., & Nielsen, B. (2014). From the Editors: Explaining interaction effects within and across levels of analysis. *Journal of International Business Studies*, 45(9), 1063-1071

Andreas, C.A. (2007), "Disclosure level and the cost of equity capital", *The Accounting Review*, 72(3), 323-49

Andreas, C.A. Jaskiewicz, P., Miller, D., (2011). Ownership versus management effects on performance in family and founder companies: A Bayesian reconciliation. *Journal of Family Business Strategy*, 2 (4), 232-245

Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature, 36*(2), 818-860.

Annuar, H. A Salihu, I. A., & Sheikh Obid, S. N. (2014). Corporate ownership, governance and Tax avoidance: An interactive effect. *Social and Behavioural Sciences* ,164,150-160.

Armstrong, C. S., Blouin, J. L., & Larcker, D. F. (2012). The incentives for tax planning. *Journal of Accounting and Economics, 53*(1-2), 391-411.

Armstrong, C., Blouin, J. L., Jagolinzer, A. D., Larcker, D. F. (2015). Corporate Governance, Incentives, and Tax Avoidance. *Journal of Accounting and Economics*, 60(1), 1-17.

Ayat, L & Burridge, P 2000, 'Unit root tests in the presence of uncertainty about the non-stochastic trend', *Journal of Econometrics*, 95(1), 71-96

Barford, V & Holt, G. (2013). *Google, Amazon,Starbucks: The rise of 'tax shaming'*. Retrieved on 1February, 2017 from http://bbc.co.uk/news/ magazine-20560359

Barnhart, S. W. & Roseinstein, S. (1998) Board Composition, Managerial Ownership, and Firm Performance: An Empirical Analysis. *The Financial Review*, 33, 1-16.

Baron, R. M., & David A. K. (1986), Moderator-Mediator Variables Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51 (6), 1173-82

Bauman, C. & Schadewald, M. (2001).Impact of foreign operations on reported effective tax rates: interplay of foreign taxes, US taxes and US GAAP. *Journal of International Accounting, Auditing &Taxation*, 10(2), 177-196.

Baltagi, B. H. (2005), *Econometrics analysis of panel data*, 3rd edition, England: John Wiley and Sons Ltd.

Baltagi, B. H., B. C. Jung and S. H. Song (2008). Testing for heteroscedasticity and serial correlation in a random effects panel data model. *Working paper No. 111*, Syracuse University, USA.

Baltagi, B.H., (2013), *Econometric Analysis of Panel Data*. Chichester: Wiley

Berger, A. N., & Lubrano, P. E. (2006). Capital structure and firm performance; a new approach to testing agency theory. *Journal of Banking and Finance*.

Berle, A.A. & Means, G.C. (1932). *The modern corporation and private property*. New York, USA: MacMillan Co.

Bernardi, R.A. and Arnold, D.F. (1997). An examination of moral development within public accounting by gender, staff level, and firm. *Contemporary Accounting Research*, 14(4), 653-668.

Bhagat, S., & Bolton, B, (2008). Corporate Governance and Firm Performance. *Journal of Corporate Finance*, 14(3), 257-273.

Bisbe, J. & Otley, D. (2004). The Effects of the Interactive Use of Management Control Systems on Product Innovation. *Accounting, Organizations and Society*, 29, 709-737.

Biwott PK (2011). International Trade Liberalization and Economic Growth: The Role of Regulatory Policies. Kenya Institute for Public Policy Research and Analysis (KIPPRA) DP/125/2011

Black, B. S., Jang, H. & Kim, W. (2006). Predicting Firms' Corporate Governance Choices: Evidence from Korea. *Journal of Corporate Finance*, 12, 660-691.

Boussaidi, A. and M. S. Hamed, (2015). The impact of governance mechanisms on tax Aggressiveness: Empirical evidence from Tunisian context. *Journal of Asian Business Strategy*, 5(1), 1-12.

Bradshaw, M. Liao, G. and Ma, M. (2014).Ownership Structure and Tax Avoidance: Evidence from Agency Costs of State Ownership in China. Available at: http://ssrn.com/abstract=2239837

Breusch T. S. & Pagan A. R.(1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 47(5), 1287–1294

Brockwell, J. (2011). Strategies for strategic sourcing. *Industry Week*, 257 (1), 221–234

Cadbury Committee (1992), *Report of the Committee on the Financial Aspects of Corporate Governance.* London: Gee and Firm.

Cameron, A. Colin, & Pravin K. Trivedi (2009), *Microeconometrics Using Stata*. TX: Stata Press

Capital Markets Authority of Kenya (2002). *Guidelines on Corporate Governance Practices by Public Listed Companies in Kenya*, Nairobi: CMA.

Capital Markets Authority of Kenya (2015). *Code of Corporate Governance Practices for Issuers of Securities to the Public,* Nairobi: CMA.

Chen, J.C. &Roberts, R.W. (2010). Toward a more coherent understanding of the organisation-society relationship: A theoretical consideration for social and environmental accounting research, *Journal of Business Ethics*, 97,651-665.

Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics, 95*(1), 41-61.

Cobham, A., & Gibson, L., (2016). Ending the Era of Tax Havens. Why the UK Government Must Lead the Way. *Oxfam Briefing Paper.* Oxford: Oxfam. Retrieved from:http:// oxfamlibrary.openrepository.com/Oxfam/bitstream/10546/4/bp-ending-era-tax-havens-uk-140316-en.pdf(accessed on 20 April 2018)

Cobham, A., & Jansky, P., (2017). Global Distribution of Revenue Loss from Tax Avoidance: Re-estimation and Country Losses. *United Nations Wider working Paper 2017/55: United Nations University World Institute for Development Economics Research*.

Cohen, L., Lawrence, M., & Morrison, K. (2000). *Research Methods in Education* (5th Ed.). London.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum

Craig,D. (2010) . *Australian Financial Accounting*. 6th Edition. New York: McGraw-Hill.

Crivelli E, De Mooij R, & Keen M. (2016). Base Erosion, Profit Shifting and Developing Countries. *FinanzArchiv: Public Finance Analysis*, 72(3).

Crozon, R. & Gneezy, U. (2008). Gender Differences in Preferences. *Journal of Economic Literature*, 47(2), 448–474.

Dalton, C. M. & Dalton, D. R. (2005). Boards of Directors: Utilizing Empirical Evidence in Developing Practical Prescriptions. *British Journal of Management*, 16, 91-97.

DeBoskey, D.G., Jiang, W. (2012). Earnings management and auditor specialization in the post-sox era: an examination of the banking industry. *Journal of Banking Finance*, 36,613–623

Derashid, C. & Zhang, H. (2003). Effective Tax Rates and the Industrial Policy hypothesis: Evidence from Malaysia. *Journal of International Accounting, Auditing and Taxation*, 12, 45-62.

Desai, M. A., & Dharmapala, D. (2006). Effective corporate tax rates and high-powered incentives.*Journal of Financial Economics, 79*(1), 145-179.

Desai, M.A., Dyck, A. & Zingales, L. (2007). Theft and Taxes, *Journal of Financial Economics* **84**(3), Elsevier, 591-623.

Desai, M. A. & Dharmapala, D. (2008). Tax and corporate governance: an economic approach. In W. Schon (Eds.), *Tax and Corporate Governance* (13-30). Berlin: Springer Verlag.

Desai, M. A., & Dharmapala, D (2009b). Effective corporate tax rates and firm value. *The Review of Economics and Statistics, 91*(3), 537-546.

Dryeng, D.S., Hanlon, M., Maydew J.R. (2016). Changes in Corporate effective tax rates over the past 25 years. *Journal of Financial Economics*.

Dryeng, S. D., Hanlon, M., & Maydew, E. L. (2008). Long-run effective corporate tax rates. *The Accounting Review, 83*(1), 61-82.

Dryeng, S. D., Hanlon, M., & Maydew, E. L. (2010). The effects of executives on effective corporate tax rates. *The Accounting Review, 85*(4), 1163-1189.

Ees, H.V., Gabrielsson, J., & Morton, H. (2009). "Toward a behavioural theory of boards and corporate governance". *Corporate Governance: An International Review,* 17, 307–319.

Eisenhardt, K.M. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, 14(1), 57-74

Eng, L.L. & Mak, Y.T. (2003). Corporate governance and voluntary disclosure, *Journal of Accounting and Public Policy*, 22(4), 325-345

Fama, E.F. & Jensen, M.C. (1983) Separation of ownership and control. *Journal of Law and Economics* ,26, 301–325.

Fan, J. and Wong, T. J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics*, 33, 401-425.

Fernandez-Rodriguez, E., Garcia-Fernandez, R. & Martinez-Arias, A. (2019). Influence of Ownership Structure on the Determinants of Effective Tax Rates of Spanish Companies. *Sustainability*, 11,1441; doi:10.3390/su11051441

Field, A.P. (2005). *Discovering Statistics Using SPSS*: 2nd Edition, London: Sage

Florackis, C. (2008). Agency costs and corporate governance mechanisms: evidence for UK firms. *International Journal of Managerial Finance*, 4(1): 37-59

Fraile, I.A. & Fradejas, N.A. (2014). Ownership structure and board composition in a high ownership concentration context. *European Management Journal*, 32,646-657

Francis, B.,I. Hasan, Q. Wu & Yan,(2014). Are Female CFOs Less Tax Aggressive? Evidence from Tax Aggressiveness, *Journal of the American Taxation Association,* 36(2), 171-202.

Freeman, R.E. (1984). *Strategic Management: A stakeholder approach*. Boston: Pitman

Freeman, Edward and McVea, J. (2001). A Stakeholder Approach to Strategic Management. *Darden Business School Working Paper*, (01-02) https://doi.org/ dx.doi.org/10.2139/ssrn.263511

Ghauri, P.N. (2005) Research methods in business studies; a practical guide, London: Prentice Hall.

Gitau, M. R. (2017). The Moderating Effect of Firm Size on the Relationship Between Capital Structure and Financial Distress of Non-Financial Companies Listed in Kenya. *Journal of Finance and Accounting*, 5, 151. 10.11648/j.jfa.20170504.15.

Gomariz F.C, M., & Ballesta P. (2014). Financial reporting quality, debt .S.J.maturity and investment efficiency. *Journal of Banking & Finance*, 40, 494–506.

Government Accountability Office (GAO) (2008). *Effective tax rates are correlated with where income is reported. Report to the Committee on Finance U. S. Senate*, GAO-08-950, August (United States). Available at http://www. gao. gov/new. items/d08950.

Government of Kenya (2017). *Income Tax Act*. Nairobi: Government Printer.

Goodpaster, K.E. (1991), "Business Ethics and Stakeholder Analysis*," Business Ethics Quarterly*, 3(1), 62-75.

Graham, J.R. (2003). Taxes and Corporate Finance: A Review. *Review of Financial Studies*, 16, 1075-1129

Graham J.R., Hanlon M., Shelvin T., Shroff N. (2017). Tax Rates and Corporate Decision Making. *The Review of Financial Studies*, 30(9), 3128-3175

Grandmont, R., Grant, G. & Silva, F. (2004). Beyond the Numbers—Corporate Governance: Implications for Investors, The Materiality of Social, Environmental and Governance Issues to Equity Pricing, *Deutsche Bank*, Geneva: UNEP, 17-18.

Greene (2008), *Econometric analysis* 6th ed., Upper Saddle River, N.J: Prentice Hall

Gujarati, D.N. (2003). *Basic Econometrics*. New York: McGraw Hill Book Co.

Gujarati, D.N. (2004) *Basic Econometrics*. (4th Edition). New York: McGraw-Hill Companies.

Gupta, S. & Newberr,y, K. (1997). Determinants of the Variability in Effective corporate tax ratess: Evidence from Longitudinal data, *Journal of Accounting and Public Policy* 16(1), Elsevier, 1-34.

Godambe, V.P. 1982. Estimation in survey sampling: robustness and optimality. *Journal of the American Statistical Association*, 77,393-403

Hair, J., Anderson, R., Tatham, R.L., & Black, W.C. (1998). *Multivariate data analysis* (5th ed.). NJ: Upper Saddle River: Prentice-Hall.

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics, 50*(2-3), 127-178.

Hanlon, M. & Slemrod, J. (2009). What Does Tax Aggressiveness Signal? Evidence From Stock Price Reactions to News About Tax shelter involvement, *Journal of Public Economics* 93(1-2), Elsevier, 126-141.

Hausman, J.A. & W.E. Taylor, (1978), Panel data and unobservable individual effects. *Econometrica* 49, 1377-1398

Hill, C.W.L. and Jones, T.M. (1992). Stakeholder-Agency theory, *Journal of Management Studies*, 29(2),131-154.

Hsiao, C., (1986) *Analysis of Panel Data, Econometric Society monographs No. 11*, New York: Cambridge University Press

Hsiao, C. (2007). Why panel data? *Singapore Economic Review*, 50(2), 1–12

Hsiao, C. (2013). *Analysis of panel data,* 2nd edition. Econometric society monographs, Cambridge; Cambridge University Press.

Hsiao, C. (2014). Analysis of Panel Data, 3rd edition, Cambridge: Cambridge University Press (forthcoming).

Huseynov, F., & Klamm, B. K. (2012). Tax avoidance, tax management and corporate social responsibility. *Journal of Corporate Finance*, *18*(4), 804-827.

International Monetary Fund (2018). *World Economic Outlook.*

Jarque, C.M. & Bera, A.K. (1987) A Test for Normality of Observations and Regression Residuals. *International Statistical Review*, 55, 163-172.

Jawadi, F., Jawadi, N. & Ben ameur, H. & Idi Cheffou, A. (2017). Does Islamic banking performance vary across regions? A new puzzle. *Applied Economics Letters*. 1-4. 10.1080/13504851.2016.1210764.

Jensen, M.C. & Meckling, W.H. (1976). Theory of the firm: managerial behaviour, agency costs and ownership structure, *Journal of Financial Economics*, 3(4), 305-360.

Jensen, M.C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance, 48*, 831–880.

Jirata, Megersa Tadesse (2018). Estimation of Panel Data Regression Models with Individual Effects. Master of Science in Mathematics (Statistics Option)

Joulfainan, D. (2000). Corporate income tax evasion and managerial Preferences. *Review of Economics and Statistics.* 82(4), 698-701

Kastlunger, B., Dressler, S., Kirchler, E., Mittone, L. & Voracek, M. (2010), Sex Differences in Tax Compliance: Differentiating Between Demographic Sex, Gender-role Orientation, and Prenatal Masculinization (2D:4D), *Journal of Economic Psychology* 31(4), 542-552.

Kaymak, T., & Bektas, E. (2008), East meets west? Board characteristics in an emerging market: Evidence from Turkish banks, *Corporate Governance*, 16(6), 550–61.

Kenya Revenue Authority (2018). *Seventh Corporate Plan 2018/19-2020/21*. Nairobi: KRA

Khamoussi Halioui, Souhir Neifar, Fouad Ben Abdelaziz, (2016) "Corporate governance, CEO compensation and tax aggressiveness: Evidence from American firms listed on the NASDAQ 100", *Review of Accounting and Finance*, 15(4), 445-462

Khaoula, A. & Ali, Z.M., (2012). The board of Directors and the corporate tax planning. Empirical Evidence from Tunisia. *International Journal of Accounting and Financial Reporting*, 2(2), 142-157

Khurana, I.K. & Moser W.J. (2012), Institutional Shareholders' Investment Horizons and Effective corporate tax rates. *The Journal of the American Taxation Association*, 35(1), 111-134

King Report I (1994), *King Report on Corporate Governance for South Africa*, Institute of Directors in Southern Africa, Johannesburg.

King Report III (2009), *King Report on Corporate Governance for South Africa*, Institute of Directors in Southern Africa, Johannesburg.

Kivunja C. & Kuyini A. B. (2017). Understanding and Applying Research Paradigms in Educational contexts. *International Journal of Higher Education*, 6(5), 26-41

Kohler U & Kreuter F (2009). "Data Analysis using Stata (2nd Ed)," Stata Press books, StataCorp LP, number daus2.

Kowano, L. and Slemrod, J. (2016). How do corporate tax bases change when corporate tax change? With implications for tax rate elasticity of corporate tax revenues. *International Tax and Public Finance*, 23(3), 401-433

Kraft, A. (2014). What really affects German firms' effective tax rate? *International Journal of Financial Research*, 5(3)

Krippendorff, K. (2013). *Content Analysis* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Lanis, R., & Richardson, G. (2011). The effect of board of director composition on corporate tax aggressiveness. *Journal of Accounting and Public Policy, 30*(1), 50-70.

Lanis, R., & Richardson, G. (2012). Corporate social responsibility and tax aggressiveness: an empirical analysis. *Journal of Accounting and Public Policy, 31*(1), 86-108.

Lanis, R., G. Richardson, & G. Taylor, (2015). Board of director gender and corporate tax aggressiveness: an empirical analysis. *Journal of Business Ethics*. DOI:10.1007/s10551-015-2815-x,1-20,

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., (2000). Investor protection and corporate governance. *Journal of Financial Economics,* 58, 3–27.

Lasfer, M.A. (1995). Agency costs, taxes and debt: the UK evidence. *European Financial Management*, 1(3), 265-285

Lee, T.A. (1998). A stakeholder approach to auditing. *Critical Perspective on Accounting*, 9(2), 217-226.

Lee, Wang-Sheng (2008). Propensity score matching and variations on the balancing test. Manuscript.

Li, Y. (2014). The Relationship between equity ownership structure and tax aggressiveness of listed companies. *Eastern Academic Forum.*

Lim, Y. (2011). Tax avoidance, cost of debt and shareholder activism: Evidence from Korea. *Journal of Banking and Finance*, 35(2), 456-470.

Lisowsky, P. (2010). Seeking Shelter: Empirically modeling tax shelters using financial statement information. *AccountingReview*, 85(5), 1693-1720.

MacManus, P. A. (2011). Introduction to Regression Models for Panel Data Analysis. Indiana, USA. Retrieved from http://www.indiana.edu/~wim/docs/10_7_2011_slides.pdf

Mahenthiran, S., Kasipillai, J. (2011) *Influence of ownership structure, corporate governance, and culture on Tax Policy:* Evidence from Malaysia. DOI: 10.2139/ssrn 1752526

Mangena, M. and Chamisa, E. (2008). Corporate governance and incidences of listing suspension by the JSE Securities Exchange of South Africa: an empirical analysis‖, *The International Journal of Accounting,* 43, 28-44.

Marsh, D. R., M. J. Mills, D. E. Kinnison, J.-F. Lamarque,N. Calvo, and L. M. Polvani, 2013: Climate change from 1850 to 2005 simulated in CESM1(WACCM).J. Climate, in press, doi:10.1175/JCLI-D-12-00558.1

Marston, C. L., & Shrives, P.J. (1991). The use of disclosure indices in accounting research: a review article. *British Accounting Review*, 23 (3), 195-210.

Minnick, K., & Noga, T. (2010). Do corporate governance characteristics influence tax management? *Journal of Corporate Finance, 16*(5), 703-718.

Mundlak (1978). On the pooling of time series and cross section data, *Econometrica,* 46, 69-85

Murray, M. P. (2006). Avoiding Invalid Instruments and Coping with Weak Instruments. *Journal of Economic Perspectives*, 20(4), 111-132.

Mutua, J.M., (2012). *A Citizen's Handbook on Taxation in Kenya*. Nairobi: Institute of Economic affairs.

Nachmias, C.F, & Nachmias, D. (2008). *Research Methods in the Social Sciences*. (7th ed.). New York: Worth.

Nekesa, M. O., Namusonge G. S., Makokha E.N (2017). Effect of Corporate Income Tax on Financial Performance of Companies Listed on the Nairobi Securities Exchange in Kenya. *International Journal of Social Sciences and Information Technology*, 3(7), 2467

Nweke, J.I, C.J, Ndubuisi K-(2019). Financial leverage and Firm Financial Performance in Nigeria: A Panel Data Analysis Approach. *Global Journal of Management and Business Research,* [S.l.], may. ISSN 2249-4588.

OECD (1999). *OECD Principles of Corporate Governance*, Paris: OECD

OECD (2004). *OECD Principles of Corporate Governance*, Paris: OECD

OECD (2015). G20/OECD principles of Corporate Governance, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264236882-en

OECD (2015), *BEPS Action 11: Improving the Analysis of BEPS*, Public Discussion Draft (OECD: Paris).

Ogunwale, et al (2011), *On The Comparison of Two Methods of Analyzing Panel Data Using Simulated Data*, University of Ado-Ekiti, Nigeria

Omer, T., Molloy, K., Ziebart, D. (1993). An Investigation of the Firm Size - Effective Tax Rate Relation in the 1980s. *Journal of Accounting, Auditing, and Finance*, 8(2), 167- 182

Osebe, P.R. & Chepkemoi, P. (2016). Corporate Governance and Banking Sector in Kenya. *International Journal of Economics, Commerce and Management*. 4(9), 493-511

Oyenike, O., Olayinka, E. & Emeni, F. (2016). *Female Directors and Tax Aggressiveness of Listed banks in Nigeria*. 3rd International Conference on African development issues. ISSN:2449-075X

Ozkan, A. & Ozkan, N. (2004). Corporate Cash Holdings: An Empirical Investigation of UK Companies. Journal of Banking & Finance, 28, 2103–2134.

Pandey, I.M., (2010). *Financial Management*. Tenth edition. New Delhi: Vikas Publishing House

Pattiasina, V., Tammubua, M.H., Numberi, A., Patiran, A., & Temalagi, S. (2019). Capital Intensity and Tax avoidance. *International Journal of Social Sciences and Humanities*, 3(1), 58-71

Păunescu,R.A, Vintilă, G. & Gherghina,S.C. (2016),Exploring the Link between Corporate Governance Characteristics and Effective Corporate Tax Rate: A Panel Data Approach on U.S. Listed Companies, *Journal of Financial Studies & Research*, DOI: 10.5171/2016.857506

Pearce, J. A. and Zahara, S.A. (1991). The relative power of CEOs and boards of directors: associations with corporate performance. *Strategic Management Journal*, 12, 135-53.

Pomerleau K., & Jahnsen K. (2017). Corporate Income Tax rates around the World. *Tax Foundation*, Fiscal fact No. 559

Powell, M. & Ansic, D. (1997). Gender differences in risk behaviour in financial decision-making: An experimental analysis, *Journal of Economic Psychology*, 18(6), 605-628.

Pratama A. (2017). Company Characteristics, Corporate Governance and Aggressive Tax Avoidance Practice: A Study of Indonesian Companies. *Review of Integrative Business and Economics Research*, 6(4), 70-81.

PSCGT (2000). *Principles for Corporate Governance in Kenya and a Sample Code of Best Practice for Corporate Governance*, Nairobi: Private Sector Corporate Governance Trust

Rani, S., Susyeto, D & Faudah, L.L. (2018). The Effects of Corporate Characteristics on Tax Avoidance Moderated by Earnings Management (Indonesian Evidence). *Journal of Accounting, Finance and Auditing Studies*, 4(3), 149-169

Ravid, S. A., & Sarig, O. H. (1991), Financial Signaling by Committing to Cash Outflows. *Journal of Financial and Quantitative Analysis*, 26(2), 165-181.

Rego, S.O. (2003). Tax avoidance activities of U.S. Multinational Corporations. *Contemporary Accounting Research*, 20, 805-833

Rego, S. O., Wilson, R. (2012). Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research*, 50(3), 775-810

Reverte, C. (2009). Determinants of corporate social responsibility disclosure ratings by Spanish listed firms, *Journal of Business Ethics*, 88, 351-366.

Ribeiro, A., Cerqueira, A., Brandao, E. (2015). *The Determinants of Effective Tax Rates: Firms' Characteristics and Corporate Governance*. FEP Working Papers 567, ISSN: 0870-8541, School of Economics and Management, University of Porto.

Richardson, G., & Lanis, R. (2007). Determinants of the variability in effective corporate tax ratess and tax return: evidence from Australia. *Journal of Accounting and Public Policy, 26*(6), 689-704.

Roberts, J., McNulty, T. and Stiles, P. (2005). Beyond agency conceptions of the work of the non-executive director: Creating accountability in the boardroom, *British Journal of Management*, 16, 5-26.

Rossouw, G.J. (2005b). The philosophical premises of the second King Report on corporate governance , Koers, 70(4), 727-744.

Salaudeen, Y.M. & Ejeh, B.U.(2018). Equity ownership structure and corporate tax aggressiveness: The Nigerian context. *Research journal of Business and Management*,5(2), 90-99

Salihu, I. A., Sheikh Obid, S. N. & Annuar, H. A. (2013). Measures of effective corporate tax rates: empirical evidence from an emerging economy. *International Journal of Business and Society, 14* (3), 412-427.

Samet, M. & Jarboui, A. (2017). CSR, agency costs and investment-cash flow sensitivity, A mediated moderation analysis. *Managerial Finance*, 43(3), 1-14.

Sarbanes, P. & Oxley, M. (2002), Sarbanes-Oxley Act of 2002, Washington, DC: USA Congress.

Sartori, N. (2008). *Effects of strategic tax behaviors on corporate governance*. September 1, University of Michigan.

Scholes, M., Wolfson, M., Erickson, M., Maydew, E. & Shevlin, T. (2005). Taxes and Business Strategy: A Planning Approach, 3rd ed., Upper Saddle River, NJ. Pearson Prentice Hall

Shleifer, A. & Vishny, R.W. (1997). A Survey of corporate governance. *Journal of Finance*, 52, 737-783

Shou-Min Tsao, & Lien, Wei-Hao. (2013). Family Management and Internationalization: The Impact on Firm Performance and Innovation. MIR: *Management International Review*. 53, 189-213. 10.2307/23464399.

Smyth, R. (2004). Exploring the usefulness of a conceptual framework as a research tool: A researcher's reflections. 14, 167-180.

Stickney, C. P. & McGee, V. E. (1982). Effective Corporate Tax Rates: The Effect of Size, Capital Intensity, Leverage, and Other Factors. *Journal of Accounting and Public Policy*, 1(2), 125-152.

Stratman, J.K. & Roth, A.V. (2004). Enterprise Resource Planning (ERP) Competence Constructs: Two-Stage Multi-Item Scale Development and Validation. *Decision Sciences*, 33(4), 601-628.

Studenmund, A.H. (2000). *Using Econometrics: A Practical Guide* (6th edition). Harlow: Pearson Education Limited

The Institute of Certified Public Accountants of Kenya (ICPAK) (2016). Kenya's Revenue Analysis 2010-2015: A Historical Perspective to Revenue performance in Kenya: Nairobi, Kenya

Government of Kenya (2017). *The Tax Procedures Act of Kenya*. Nairobi: Government Printer

Vintilă G., Păunescu R. A. & Gherghina Ș. C. (2015). Does Corporate Governance Influences Corporate Financial Performance? Empirical Evidences for the Companies Listed on US Markets, *International Business Research*, 8(8), 27-49.

Volpin, P. and Enriques, L. (2007) Corporate Governance Reforms in Continental Europe. *Journal of Economic Perspectives*, Vol. 21, 117–40

Uadiale, O. M., Fagbemi, T. O. & Ogunleye, J. O. (2010). An empirical study of the relationship between culture and personal income tax evasion in Nigeria. *European Journal of Economics, Finance and Administrative Sciences, 20*, 116-126.

UNCTAD (2015). *World Investment Report 2015—Reforming International Investment Governance***.** Geneva: United Nations. Retrieved from: http://unctad.org/en/PublicationsLibrary/wir2015_en.pdf (accessed on 15 August 2017).

Verbeek, M. (2004) A Guide to Modern Econometrics (2nd Edition), Erasmus University Rotterdam, John Wiley & Sons Ltd., Hoboken.

Vieira, A. (2013). *Corporate Governance and Taxes*, Dissertation, School of Economics and Management, University of Porto

Wachira, M. (2017). Determinants of corporate social disclosures in Kenya: A longitudinal study of firms listed on the Nairobi securities exchange. *European Scientific Journal*, 13(11), 1857–7881.

Wahab, N. S. A., Holland, K. (2012). Tax Planning, Corporate Governance and Equity Value. *British Accounting Review*, 44(2), 111-124.

Watson, L. (2015). Corporate Social Responsibility, Tax Avoidance and Earnings Performance. *The Journal of the American Taxation Association*, 37(2), 1-21

Wilson, R. J. (2009). An examination of corporate tax shelter participants. *The Accounting Review*, 84(3), 969-999.

Williams, R.A. (2015). "Heteroscedasticity," online notes, University of Notre Dame, https://www3.nd.edu/~rwilliam/, Last revised January 30, 2015;

Wong, T. J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics*, 33(3), 401-425

Yermack, D. (1996). Higher market valuation of companies with a small board of directors, *Journal of Financial Economics*, 40,185–211.

Yeung C.T. (2010), Effects of Corporate Governance on Tax Aggressiveness, An Honours Degree Project, Hong Kong Baptist University.

Zemzem, A. & Ftouhi, K. (2013). The effects of board of directors characteristics on Tax aggressiveness. *Research Journal of Finance and Accounting*, 4(4), 140-147

Zhou, Y. (2011), *Ownership Structure, Board Characteristics, and Tax Aggressiveness*, PhD, University Hong Kong.

APPENDICES

Appendix 1: G20 Corporate Tax Rates, 2012

	Statutory Corporate Tax Rate	Average Effective Corporate Tax Rate
Country	**Rate**	**Rate**
United States	39.1%	29%
Japan	37%	36.4%
Argentina	35%	37.3%
South Africa	34.6%	23.5%
France	34.4%	20%
Brazil	34%	22.3%
India	32.5%	25.6%
Italy	31.4%	26.8%
Germany	30.2%	14.5%
Australia	30%	17%
Mexico	30%	20.3%

Canada	26.1%	16.2%
China	25%	19.1%
Indonesia	25%	36.4%
South Korea	24.2%	20.4%
United Kingdom	24%	10.1%
Russia	20%	21.3%
Saudi Arabia	20%	19.5%
Turkey	20%	19.5%

Appendix 2-NSE Listed Companies

“AGRICULTURAL

Eaagads Ltd

Kapchorwa Tea Co.Ltd

Kakuzi

Limuru tea Co.Ltd

Rea Vipingo Plantations Ltd

Sasini Ltd

Williamson Tea Kenya Ltd

AUTOMOBILES AND ACCESSORIES

Car and general (k) Ltd

Sameer Africa Ltd

Marshalls (E.A.) Ltd

BANKING

Barclays Bank Ltd

CFC Stanbic Holdings Ltd

I&M Holdings Ltd

Diamond Trust Bank Kenya Ltd

HF Group Ltd

KCB Group Ltd

National Bank of Kenya Ltd

NIC Bank Ltd

Standard Chartered Bank ltd

Equity Group Holdings

The Co-operative Bank of Kenya Ltd

COMMERCIAL AND SERVICES

Express Ltd

Kenya Airways Ltd

Nation Media Group

Standard Group Ltd

TPS Eastern Africa (Serena) Ltd

Scangroup Ltd

Uchumi Supermarket Ltd

Hutchings Bierner Ltd

Longhorn Publishers Ltd

Atlas Developers and Support Services

Deacons (East Africa) Plc

Nairobi Business Ventures Ltd

CONSTRUCTION AND ALLIED

Athi River Mining

Bamburi Cement Ltd

Crown Berger Ltd

E.A Cables Ltd

E.A Portland Cement Ltd

ENERGY AND PETROLEUM

Kenolkobil Ltd

Total Kenya Ltd

KenGen Ltd

Kenya Power & Lightening Co Ltd

Umeme Ltd

INSURANCE

Jubilee Holdings Ltd

Pan Africa Insurance Holdings Ltd

Kenya Re-Insurance Corporation Ltd

Liberty Kenya Holdings Ltd

Britam Holdings Ltd

CIC Insurance Group Ltd

INVESTMENT

Olympia Capital Holdings Ltd

Centum investment Co Ltd

Trans-Century Ltd

Home Afrika Ltd Ord 1.00

INVESTMENT SERVICES

Nairobi Security Exchange Ltd

MANUFACTURING AND ALLIED

B.O.C Kenya Ltd

British America Tobacco Kenya Ltd

Carbacid Investments Ltd

East Africa Breweries Ltd

Mumias Sugar Co.Ltd

Unga Group Ltd

Eveready East Africa Ltd

Kenya Orchards ltd

A. Baumann Co ltd

Flame Tree Group Holdings ltd

TELECOMMUNICATION AND TECHNOLOGIES

Safaricom Ltd

REAL ESTATE INVESTMENT TRUST

Stanlib Fahari I-REIT

EXCHANGE TRADE D FUND

New Gold Issuer (RP) Ltd"

Appendix 3 –Content Analysis Form

YEAR_____

Company Name	Total Number of Directors	Number of Non-executive directors	Number of Female directors	Percentage ownership of top five shareholders	Total Debt	Total Equity	Property, Plant and equipment	Total Assets	Profit Before Tax	Cash Tax Paid

Appendix 4: Kenya Government Revenue and Expenditure

KENYA GOVERNMENT REVENUE AND EXPENDITURE

(SHILLINGS MILLION)

PERIOD	TOTAL REVENUE	TOTAL EXPENDITURE	DEFICIT
2010-2011	660,764	817,089	(156,325)
2011-2012	690,732	915,888	(225,156)
2012-2013	822,667	1,263,372	(440,705)
2013-2014	969,162	1,281,163	(312,001)
2014-2015	1,081,193	1,587,466	(506,273)
2015-2016	1,222,015	1,765,368	(543,353)
2016-2017	1,400,578	2,138,314	(737,736)

SOURCE: CENTRALBANK OF KENYA

Appendix 5: Kenya's Public Debt Figures

KENYA'S PUBLIC DEBT FIGURES

(SHILLINGS MILLIONS)

Year	Month	Domestic Debt	External Debt	Total
2011	1	730,197.77	615,604.98	1,345,802.75
2011	2	746,670.28	630,400.03	1,377,070.31
2011	3	754,048.10	642,847.92	1,396,896.02
2011	4	735,460.06	652,675.73	1,388,135.79
2011	5	746,574.73	675,887.12	1,422,461.85
2011	6	764,222.80	722,888.31	1,487,111.11
2011	7	781,713.03	744,486.60	1,526,199.63
2011	8	776,852.60	768,510.85	1,545,363.45
2011	9	764,274.59	799,834.03	1,564,108.62
2011	10	794,565.56	810,011.60	1,604,577.16
2011	11	803,894.34	728,645.25	1,532,539.59
2011	12	799,880.06	685,607.92	1,485,487.98
2012	1	809,278.11	686,718.48	1,495,996.59
2012	2	877,292.72	663,050.00	1,540,342.72
2012	3	887,871.40	676,330.00	1,564,201.40
2012	4	896,036.72	700,900.00	1,596,936.72
2012	5	889,056.81	721,040.00	1,610,096.81
2012	6	858,829.55	774,550.00	1,633,379.55
2012	7	872,160.52	767,390.00	1,639,550.52
2012	8	901,934.27	771,760.00	1,673,694.27

2012	9	922,196.19	802,457.33	1,724,653.52
2012	10	929,321.62	812,307.84	1,741,629.46
2012	11	958,438.68	824,583.12	1,783,021.80
2012	12	971,265.44	821,972.82	1,793,238.26
2013	1	978,335.91	833,609.46	1,811,945.37
2013	2	943,750.18	826,267.68	1,770,017.86
2013	3	981,910.93	812,700.17	1,794,611.10
2013	4	1,065,609.39	816,796.56	1,882,405.95
2013	5	1,074,797.69	832,238.14	1,907,035.82
2013	6	1,050,628.57	843,562.27	1,894,190.84
2013	7	1,078,604.00	875,230.00	1,953,834.00
2013	8	1,116,676.22	887,560.00	2,004,236.22
2013	9	1,168,115.36	889,313.51	2,057,428.87
2013	10	1,174,782.27	887,991.23	2,062,773.50
2013	11	1,170,053.22	912,234.31	2,082,287.54
2013	12	1,189,182.59	922,369.15	2,111,551.74
2014	1	1,200,901.86	920,500.71	2,121,402.56
2014	2	1,229,416.28	937,328.35	2,166,744.63
2014	3	1,231,183.10	940,402.99	2,171,586.09
2014	4	1,216,759.23	950,981.15	2,167,740.39
2014	5	1,232,041.55	957,893.23	2,189,934.78
2014	6	1,284,327.25	1,085,928.57	2,370,255.82
2014	7	1,296,444.73	1,089,655.77	2,386,100.50
2014	8	1,281,093.66	1,090,984.32	2,372,077.98
2014	9	1,260,874.56	1,087,827.67	2,348,702.23
2014	10	1,254,913.42	1,088,832.15	2,343,745.57
2014	11	1,303,363.31	1,088,951.54	2,392,314.85

2014	12	1,307,748.71	1,170,696.28	2,478,444.99
2015	1	1,334,642.80	1,163,350.79	2,497,993.59
2015	2	1,353,302.65	1,296,748.46	2,650,051.11
2015	3	1,397,125.72	1,278,107.87	2,675,233.59
2015	4	1,415,431.51	1,326,835.19	2,742,266.71
2015	5	1,407,918.34	1,381,156.98	2,789,075.32
2015	6	1,420,444.38	1,408,613.59	2,829,057.97
2015	7	1,418,568.23	1,473,143.70	2,891,711.93
2015	8	1,403,100.20	1,530,678.61	2,933,778.82
2015	9	1,388,262.31	1,550,232.74	2,938,495.05
2015	10	1,454,245.39	1,490,713.76	2,944,959.15
2015	11	1,516,373.47	1,562,515.56	3,078,889.04
2015	12	1,540,017.00	1,615,184.20	3,155,201.20
2016	1	1,522,769.88	1,654,744.49	3,177,514.38
2016	2	1,605,227.98	1,646,555.21	3,251,783.19
2016	3	1,646,527.48	1,665,578.04	3,312,105.52
2016	4	1,689,039.25	1,685,269.16	3,374,308.41
2016	5	1,750,326.78	1,680,631.83	3,430,958.61
2016	6	1,815,470.50	1,803,256.30	3,618,726.80
2016	7	1,808,641.64	1,797,696.38	3,606,338.02
2016	8	1,815,930.73	1,803,260.48	3,619,191.22
2016	9	1,854,554.56	1,849,019.87	3,703,574.43
2016	10	1,872,102.82	1,844,474.95	3,716,577.78
2016	11	1,918,656.99	1,834,914.33	3,753,571.32
2016	12	1,930,855.01	1,896,443.05	3,827,298.06
2017	1	1,894,094.99	1,992,795.15	3,886,890.14
2017	2	1,901,820.24	1,993,173.80	3,894,994.04

2017	3	1,944,953.40	2,159,068.94	4,104,022.34
2017	4	1,979,865.65	2,167,254.83	4,147,120.48
2017	5	2,045,471.63	2,187,224.33	4,232,695.96
2017	6	2,111,710.44	2,294,735.88	4,406,446.32
2017	7	2,123,788.59	2,305,538.33	4,429,326.92
2017	8	2,135,933.94	2,309,775.39	4,445,709.33
2017	9	2,172,835.14	2,310,198.99	4,483,034.13
2017	10	2,188,509.46	2,353,124.93	4,541,634.39
2017	11	2,228,429.02	2,357,226.48	4,585,655.50
2017	12	2,220,345.35	2,349,284.44	4,569,629.79

(SOURCE: CENTRAL BANK OF KENYA)

Appendix 6: Africa GDP Figures

"AFRICA GDP FIGURES FOR 2017

2017 Rank	Country	Nominal GDP ($ billions)	Nominal GDP per capita (US$)
1	Nigeria	376.284	1,994.235
2	South Africa	349.299	6,179.870
3	Egypt	303.000	3,052.000
4	Algeria	178.287	4,292.272
5	Angola	124.209	4,407.657
6	Morocco	109.824	3,151.145
7	Ethiopia	80.874	872.840
8	Kenya	79.511	1,701.550
9	Sudan	58.239	1,428.000
10	Tanzania	51.725	1,033.567
11	Ghana	47.032	1,663.190
12	Democratic Republic of the Congo	41.441	478.237
13	Ivory Coast	40.360	1,616.981

2017 Rank	Country	Nominal GDP ($ billions)	Nominal GDP per capita (US$)
14	Tunisia	40.275	3,496.286
15	Cameroon	34.006	1,400.743
16	Libya	31.331	4,858.672
17	Uganda	26.349	699.410
18	Zambia	25.504	1,479.542
19	Zimbabwe	17.491	1,175.723
20	Botswana	17.168	7,876.997
21	Senegal	16.463	1,038.094
22	Mali	15.318	810.771
23	Gabon	15.206	7,971.589
24	Namibia	12.687	5,413.508
25	Mozambique	12.681	429.296
26	Burkina Faso	12.569	663.806
27	Mauritius	12.428	9,794.102
28	Madagascar	11.463	447.558

2017 Rank	Country	Nominal GDP ($ billions)	Nominal GDP per capita (US$)
29	Equatorial Guinea	10.725	12,726.956
30	Chad	9.872	810.163
31	Guinea	9.721	749.463
32	Benin	9.238	830.404
33	Rwanda	9.137	771.702
34	Congo	8.513	1,958.174
35	Niger	8.253	439.997
36	Somalia	7.382	547.32
37	Malawi	6.206	323.740
38	Eritrea	5.813	979.692
39	Mauritania	5.116	1,317.938
40	Togo	4.767	611.133
41	Eswatini (Swaziland)	4.491	3,914.821
42	Sierra Leone	3.641	491.448
43	Burundi	3.396	312.463

2017 Rank	Country	Nominal GDP ($ billions)	Nominal GDP per capita (US$)
44	Liberia	3.285	729.292
45	South Sudan	2.870	228.034
46	Lesotho	2.768	1,425.310
47	Djibouti	2.029	1,988.765
48	Central African Republic	1.928	386.806
49	Cape Verde	1.741	3,237.597
50	Seychelles	1.482	15,685.955
51	Guinea-Bissau	1.350	794.107
52	The Gambia	1.009	480.040
53	Comoros	0.652	787.831
54	São Tomé and Príncipe	0.379	1,785.280
--	**Total**	**2,191.104**	

(SOURCE: INTERNATIONAL MONETARY FUND, 2018)

Appendix 7: Map of Africa

Appendix 8: Proposal Approval Letter

UNIVERSITY OF KABIANGA

ISO 9001:2015 CERTIFIED

OFFICE OF THE DIRECTOR, BOARD OF GRADUATE STUDIES

REF: PHD/BSA/009/15 **Date: 19TH JUNE, 2019**

Osebe Rawlings Peter,
Department of Accounting & Finance,
University of Kabianga,
P.O Box 2030- 20200,
KERICHO.

Dear Mr. Osebe,

RE: CORRECTED PROPOSAL

This is to acknowledge receipt of two copies of your corrected Proposal entitled **"Impact of Corporate Governance on Effective Corporate Tax Rates among Listed Firms in Kenya".**

You are now free to commence your field work on condition that you obtain a research permit from NACOSTI.

Please note that, you are expected to publish at least two (2) papers in a peer reviewed journal before final examination (oral defence) of your Doctoral thesis.

Thank you.

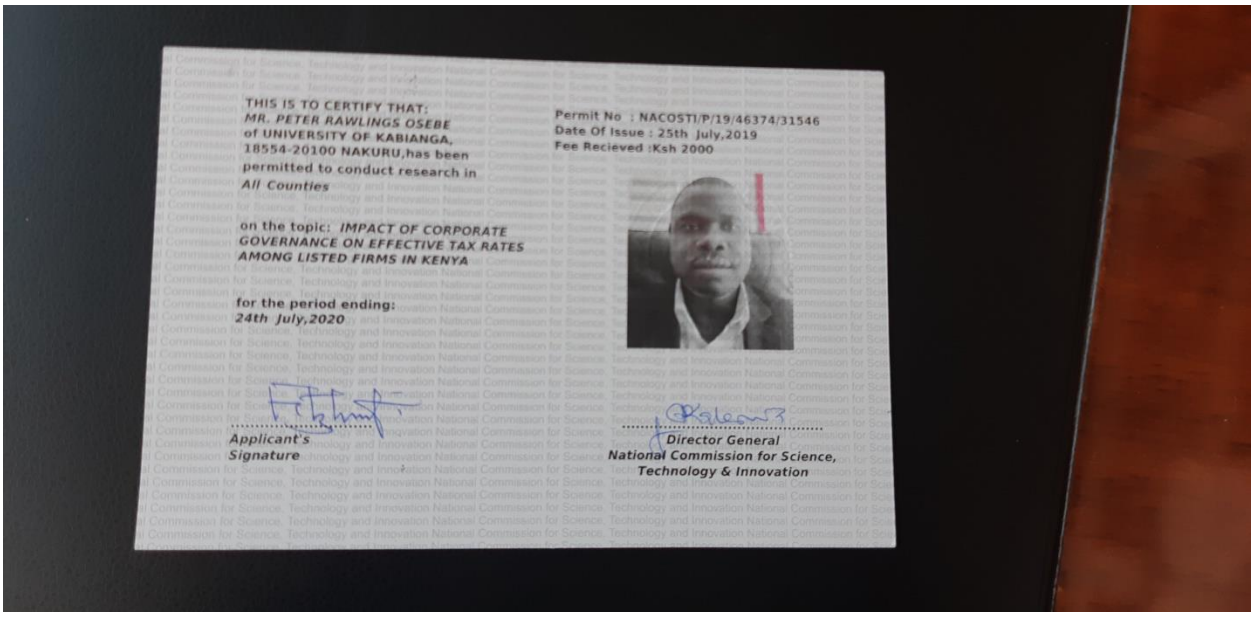
Yours Sincerely,

UNIVERSITY OF KABIANGA
19 JUN 2019
BOARD OF GRADUATE STUDIES

Prof. J. K. Kibett
DIRECTOR, BOARD OF GRADUATE STUDIES.

cc 1. Dean, SBE
2. HOD, A & F

Appendix 9: NACOSTI PERMIT



THIS IS TO CERTIFY THAT:
MR. PETER RAWLINGS OSEBE
of UNIVERSITY OF KABIANGA,
18554-20100 NAKURU,has been
permitted to conduct research in
All Counties

on the topic: *IMPACT OF CORPORATE GOVERNANCE ON EFFECTIVE TAX RATES AMONG LISTED FIRMS IN KENYA*

for the period ending:
24th July,2020

Permit No : NACOSTI/P/19/46374/31546
Date Of Issue : 25th July,2019
Fee Recieved :Ksh 2000

Applicant's Signature

Director General
National Commission for Science, Technology & Innovation