FINANCIAL LEVERAGE, CEO POWER AND THE FINANCIAL PERFORMANCE OF COMPANIES LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA.

BY

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DECLARATION

Declaration by the Candidate

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ABSTRACT

Firm financial performance is essential for corporate survival and prosperity. Financial leverage may be used to enhance corporate financial performance, but it can also occasion financial distress and bankruptcy if not carefully managed. At the Nairobi Securities Exchange, a number of firms face poor financial performance, financial distress, and weak governance, commonly associated with excessive leverage and bankruptcy. Recent corporate finance research show increasing importance of variables, omitted in prior studies, with more practical significance to practicing managers including debt slack and corporate governance. In spite of the profound impact of a firm's chief executive officer's influence power on both firm's financial leverage and financial performance little has been done to establish the role of chief executive's power on the relationship between the two. The purpose of this study was to determine the moderating effect of Chief Executive Officer Power on the relationship between financial leverage and financial performance of listed companies at Nairobi Securities Exchange. The specific objectives of this study were to determine the effect of: Debt, Debt-Equity ratios, and interest coverage on firm financial performance and to determine the conditional effect of Chief Executive Officer Power on the relationship between Debt, Debt-Equity ratios and interest coverage on firm financial performance. The study was grounded on dynamic tradeoff, pecking order, agency and upper echelon theories. Positivist research paradigm with explanatory design using linear regression model on panel data obtained from a survey of 38 listed companies at Nairobi Securities Exchange over the period 2010 to 2019 was used. The data was mined from financial statements filed at the Nairobi Securities Exchange. Controlling for Firm size, Sales growth and operational efficiency, the study found Debt ratio (β = .006; p= 0.755) and Chief Executive Officer Power (β= .060, p= 0.008) positively related to Return on Equity; the latter statistically significant at 0.05. Further, Interest coverage ratio (β=-.022; p= 0.335) and Debt Equity ratio (β=-.235, p= 0.000) were negatively related to Return on Equity with the latter statistically significant at 0.05. Chief Executive Officer Power was found to significantly moderate the relationship between Debt/Equity ratio and Return on Equity(ΔR^2 = +0.150; β = .103, p=0.000) with scope for lower levels enhancing Return On Equity while dampening at higher levels, but insignificant for Debt ratio(ΔR^2 = +0.009; β=.0028859, p=0.694), and Interest cover(ΔR^2 = +0.001; β= -.008, p= 0.538). The study concluded that while interest bearing long-term debt was characteristic under-utilized by firms at Nairobi Securities Exchange, it was the reverse for total and by extension short-term debt. Further, Chief Executive Officer Power had significant conditional effect on firm financial performance: higher levels attenuating while lower levels dampening negative relationship between financial leverage and firm financial performance. The researcher therefore recommended low Chief Executive Officer Power configuration mandate, judicious uptake of long-term and reduction of short-term debt to enhance Return on Equity. The study contributes to knowledge by developing a tool for measurement of Executive power; to policy by providing empirical evidence for regulation of executive power and to theory development by introducing executive power contingency to theories relating financial leverage to firm financial performance.

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ABREVIATIONS AND ACRONYMS

CEO	Chief Executive Officer
NSE	Nairobi Securities Exchange
CMA	Capital Markets Authority
ESOPs	Executive Share Ownership Plans.
NACOSTI	National Commission on Science, Technology and Innovation
BOD	Board of Directors
ROI	Return on Investment
ROCE	Return on Capital Employed

OPERATIONAL DEFINATION OF TERMS

CEO Power: the ability and capability of the CEO to effect idiosyncratic choices through both formal and informal means(Amedu, 2016).

Debt ratio: is the ratio of a firm's total debt to total assets or the ratio of long-term debt to total assets in the statement of financial position (Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001). This study applies the ratio of long-term debt to total assets as presented in the statement of financial position.

Debt-equity ratio: is ratio of a firm's market value of total debt to market value of equity or the ratio of the book value of debt to book value of equity (Kayo & Kimura, 2011). In this study debt-equity ratio is measured as the ratio of the book value of debt to book value of equity.

Equity finance: the ratio of shareholders equity to total assets(Kayo & Kimura, 2011).

Financial Leverage: is the degree a firm uses fixed charge capital to finance its assets (Al Momamni & Obeidat, 2017); the extent a firm uses fixed charge capital to increase investment in assets and increase ROE(Abubakar, 2015; Ahmad, Salman, & Shamsi, 2015). It can be measured as debt to equity ratio or debt ratio based on accounting values or market values (Ferris, Hanousek, Shamshur, & Tresl, 2018; Kayo & Kimura, 2011; Yin & Ritter, 2019). It can also be measured as interest coverage ratio or degree of financial leverage using cash flows or accrual income on income statement measures respectively (Dey, Hossain, & Rahman, 2018; Greenwald, 2019; Ji, 2019). This study measures financial leverage from three directions considering Total Debt, Long-term Debt and Interest cover.

Firm Financial Performance: is a measure of the extent to which a firm delivers its economic goals(Barney, 2002); is a measure of a firm's economic performance consisting of growth, market value and profitability. Based on profitability, this study measures it as return on equity.

Firm Size: is the scale of operations of a firm. It is measured in a number of studies as natural log of net sales; total assets; and average value of total assets(Ab Wahab & Ramli, 2014). This discourse uses the natural log of total assets.

Inside Debt: directors fixed pay plus the firm's pension obligation to directors(Brisker & Wang, 2017)

Interest Coverage: is the number of times fixed finance charges are covered by earnings available, measured here as EBITDA/Interest cost(Dey et al., 2018).

Ownership power: the concentration of shareholder and structural power on the CEO conferring significant and long-term influence over the BOD and strategic corporate decisions(Daily & Johnson, 1997; Finkelstein, 1992)

Riskless debt: debt security with neither default risk nor reinvestment risk usually a zero coupon bond(Myers & Majluf, 1984).

Risky debt: debt security where the required rate of return factors a risk premium(Myers & Majluf, 1984).

Structural power: The influence power of a CEO arising from the official status or hierarchy in the organization which legitimately requires subordinates to comply with legitimate instructions and permits CEO discretion(Daily & Johnson, 1997)

CHAPTER ONE

INTRODUCTION

1.0 Introduction

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

1.1 Background of the Study

Firm financial performance is one and, by far, the most important dimension of the multi-dimensional concept of firm performance (Harrison & Wicks, 2013). Whereas other dimensions only measure a firm's value preposition to its stake holders, firm financial performance measures its value preposition to all critical stakeholders as well as its financial health(Naz, Ijaz, & Naqvi, 2016; Orlitzky, Schmidt, & Rynes, 2003). Firm financial performance can also be seen as a second order performance indicator consisting of closely associated three first order performance indicators: profitability, growth, and market value(Santos & Brito, 2012). Profitability measures the managerial and internal efficiency and effectiveness in the use of economic resources to generate return. Further, profitability reflects the productivity of the firm and therefore the ability to attract economic resources and to grow. Less profitable firms reflect low labor and firm productivity. Such inefficient firms soon fail and return economic resources to the economy to be re-employed by more efficient firms. Profitability therefore also serves as efficient resource allocation tool within and between firms in an economy(Stijn & Burcin, 2006).

Firm market value is the sum of a firm's outstanding securities at market price. It can also be seen as the present value of a firm's expected profits before deduction of interest and tax into perpetuity(El Ibrami & Dicko, 2012). It reflects the market's

expectation of future firm financial performance based on the firms past reported profitability and future prospects. It also reflects the satisfaction of the interest of the firm's securities holders and therefore the market confidence in the debt and equity of the company(Naz et al., 2016).

Financial performance of a firm ultimately depends on strategic responses to environmental changes including threats and opportunities which require investment of limited financial resources in ever increasing volume of assets(Furrer, Alexandre, & Sudharshan, 2007; Miller, 1986; Wu, Yeniyurt, Kim, & Cavusgil, 2006). The increasing investment demand may be financed through equity or debt capital. According to Modigliani and Miller (1958) capital structure irrelevance theory, under perfect capital market conditions, a firm would be indifferent to either equity or debt sources of finance. However, it is globally recognized that perfect market conditions are hypothetical (Healy & Palepu, 2001; Modigliani & Miller, 1963) and that corporate managers are faced with a host of market imperfections of different degrees including: corporate and personal taxes (Modigliani & Miller, 1963), imperfect market information (Jensen & Meckling, 1976; Myers & Majluf, 1984), limited market supply of capital, inflation, transaction costs and uncertainty of returns(Fischer, Heinkel, & Zechner, 1989; Martis, 2013; Roberts & Leary, 2004; Sylla & Smith, 1995; Williamson, 1979) which make debt finance cheaper and more readily available compared to equity but highly risky for firm survival.

Firms select between internal and external equity and debt capital in many ways, to negotiate the market imperfections so as to finance required investments to achieve target financial performance. This done based on the required balance between risk and return, as reflected in the resulting capital structure. Static and dynamic tradeoff

capital structure theories posit that firms exchange the benefits of debt in capital structure against debt costs. While both theories posit that firms seek optimal leverage that maximizes firm value, the latter considers transaction costs which delay rebalancing of leverage to the optimal. This results in a leverage ratio that, unlike point estimate in the former, lies within a range. In this case, financial leverage is the use of debt in a firm's capital structure to lever ROE and asset finance by trading off the benefits such as low after tax cost and reduction in overinvestment against bankruptcy costs, underinvestment and agency cost of debt(Bethlehem, 1978; Gan, 2007; R. Huang & Ritter, 2005). Pecking order theory, on the other hand, does not consider optimal leverage as of first order importance. It considers debt finance as an instrument for mitigating effect of information asymmetry on investment finance to reduce overall cost of capital(Myers & Majluf, 1984). Agency theory considers debt as an instrument for mitigating agency conflicts between shareholders and managers which result in cost saving from potential over investment arising from shareholder-manager conflict over free cash-flows(Crutchley & Hansen, 1989; Jensen, 1986; Jensen & Meckling, 1976; Kochhar, 1997; McConnell & Servaes, 1995). The end result of judicious use of debt in capital structure is increase in leverage, profitability, investor satisfaction, confidence and optimum firm value.

Firm value and investor confidence, on the other hand, are destroyed when excess debt is used. Excess financial leverage exposes a firm to the risk of financial inflexibility and higher agency cost of debt, resulting in lost investment opportunities and underinvestment all increasing in leverage(Ang, Daher, & Ismail, 2019; Myers, 1977) and the risk of liquidity crisis, financial distress, bankruptcy and failure(Diamond & He, 2014; Dias Jr & Ioannou, 1995; Jensen & Meckling, 1976). Shareholders, creditors, bondholders, and management are all keenly aware of these

negative consequences of high leverage and therefore closely monitor the levels. Whereas managers watch the total and term structure of debt based on financial statement numbers but also monitor interest costs, stock holders watch total debt levels but also monitor interest costs impacting on ROE, while bond holders and creditors watch interest coverage and both total and term structure of debt(Begley & Freedman, 2004; Kayo & Kimura, 2011; Nash, Netter, & Poulsen, 2003). Corporate managers consequently monitor Debt ratio, Debt/Equity Ratio and Interest Coverage ratio not only to obtain an understanding of the effect of leverage on earnings, return on equity, control risks and cash-flows but also to control its effect on the firms stakeholders(Dias Jr & Ioannou, 1995).

While optimal leverage ratio maximizes firm value, it remains of secondary significance to practicing managers who instead consider, as of first order importance, matters that directly affect their firm's access to finance and debt indentures (Hess & Immenkötter, 2014; R. Huang & Ritter, 2005; Shyam-Sunder & Myers, 1999). While excessive financial leverage compromises financial flexibility, performance, and increases the risk of financial distress, and bankruptcy(Ikpesu, Vincent, & Dakare, 2020), it remains, a managerial discretionary variable subject to corporate control environment. Corporate governance structures regulate managerial behavior and by extension managerial choices including level of financial leverage in use (Iqbal, Hameed, & Ramzan, 2012; Odalo, Achoki, & Njuguna, 2016; RAMS). The analysis of the relationship between financial leverage and financial performance is consequently incomplete without consideration of the moderating effect of governance structures and behavioral aspects of the firm's management(Amedu, 2016). According to Namazi and Namazi (2016). Business models that do not specify moderating and mediating variables may be incomplete. The existence of a moderator

is significant as it enhances the validity of a theoretical model (Aguinis, 1995; Aguinis, Edwards, & Bradley, 2017).

Corporate finance research for a number of years focused on determination of optimal leverage ratio based on firm specific factors inconclusively (Omollo, Muturi, & Wanjare, 2018; RAMS; Salamba, 2015). Extant corporate finance research has increasingly shown the import of additional factors such as debt buffer(Furrer et al., 2007; Hess & Immenkötter, 2014) and corporate governance(Yaseen & Al-Amarneh, 2013; Zhang & Zhang, 2014), not only as intervening variables in the relationship between optimal financial leverage and financial performance, but also as key variables for practical managerial considerations in financing. Studies with the omission of intertwining variables are unrealistic(Namazi & Namazi, 2016), and may account for the inconsistent results (Pham & Nguyen, 2019).

A firm's chief executive officer (CEO), is the single most influential person in decision making in the firm(Daily & Johnson, 1997). Leverage, in spite of its significant influence on a firm's financial performance, is of secondary import to the CEO who under bounded rationality in a turbulent environment, and corporate control must help make and implement a number of strategic discretionary choices to achieve target corporate performance(Adams, Almeida, & Ferreira, 2005; Hambrick & Mason, 1984). The CEO's discretion or influence power: the ability and capability to get things done (Amedu, 2016; Combs, Ketchen Jr, Perryman, & Donahue, 2007; Finkelstein, 1992) or, the ability and capability to deliver the organization outcomes through people, is essential to this end. According toDaily and Johnson (1997); Dalton, Daily, Certo, and Roengpitya (2003); (Dalton, Daily, Ellstrand, & Johnson, 1998), the CEO influence power, arising from legitimate or structural authority, stock

ownership, or personal sources such as expertise and prestige, manifested in different ways (Amedu, 2016; Combs et al., 2007; Finkelstein, 1992) may be abused. It can be diverted to personal goals including enhanced personal consumption manifested in high executive rewards, consumption of expensive perquisites, and manager entrenchment through golden parachutes, stock ownership, and manager specific investment choices all leading to conservative investment decisions, suppressed investor returns, depressed confidence and in the extreme, management buyouts. Appropriate control measures such as stockownership controls, and creation of a board of directors to provide oversight and control is therefore a corporate imperative (Fama & Jensen, 1983; Jensen & Meckling, 1976; Van Essen, Otten, & Carberry, 2015).

While BOD oversight and control may be effective in constraining abuse of executive influence power under certainty conditions, it is posited to be ineffective under environmental dynamism(Amedu, 2016; Kesten, 2010; McConnell & Servaes, 1995) and excessive BOD control may stifle CEO innovation and motivation. Moreover, it is also posited that BOD founded on non-value maximizing membership assumption is inappropriate and or are incapable of controlling CEOs(L. A. Bebchuk & Fried, 2005; Gümbel, 2006). On the other hand, while J. R. Graham, Kim, and Leary (2019), observe that CEO power relative to BOD is dynamic: lowest at CEO turnover, and increasing with tenure and firm performance, Gormley and Matsa (2016), characterize manager's most detrital behavior to stakeholder rights as passive preferences for private benefits, costly effort, and risk aversion which require effective incentives to neutralize for positively effect on firm financial performance.

There is no certainty of effectiveness of BOD control. One therefore wonders how the CEO power over the Board of Directors impact on the relationship between leverage choices made in the firm and firm financial performance. What conditions of CEO power has the greatest effect on the relationship between leverage and firm financial performance and what is the nature of this effect? A moderator variable influences the nature of the effect of the antecedent on the firm outcome(Aguinis et al., 2017). This study therefore seeks to examine the moderating effect of CEO power on the relationship between financial leverage and firm financial performance.

Nairobi securities exchange is the only bourse in Kenya and the largest in East and Central Africa (Ndolo, 2015). However, recent information in public domain indicate that listed firms at the exchange are faced with governance and financial performance problems. Majority of the firms were characterized by weak governance: out of the listed 66 firms, 53 were surveyed by the capital markets regulator (CMA) for compliance with corporate governance code which became operational two years earlier in 2017 and 29(55%) were found to have weak boards (CMA, 2019). This resulted in irregular transactions, excessive risk taking and loss of investor confidence occasioning a combined value loss of several billion Kenya shillings from seven listed companies between 2012 and 2018 (Juma, 2019). As on December 2018 NSE had 67 listed firms, 3 having been delisted. Out of the remaining 67, 18(27%) faced weak corporate governance issues, either liquidity or solvency crisis and loss of investor confidence (Anyanzwa, 2018). According to Wesa and Otinga (2018), in the period 2011 to 2016, 56% of firms listed at NSE had declining market capitalization. Further, between 1963 and 2016, 13 companies listed at NSE had, either been delisted, subjected to financial distress and reorganization or subjected to bankruptcy.

According to Ikpesu (2019) financial distress arises from liquidity crisis and, or excessive leverage among other factors.

Strategic choices of a firm such as levels of leverage, with impact on firm performance, are subject to CEO influence power. Given the coexistence of high leverage, liquidity crisis, declining financial performance of many NSE listed corporations, the prevalence of weak governance structures, and the hypothesized possible effects of CEO power, one wonders the nature of CEO power amongst listed companies at NSE and its effect on the relationship between financial leverage and financial performance. This study therefore sought to assess the moderating effect of CEO power on the relationship between financial leverage and financial performance of companies listed at the NSE.

1.2 Statement of the Problem

Extant research show that optimal corporate financial performance is achieved when corporations are adequately financed and fairly directed and controlled. Only under these corporate conditions are stakeholder interests; including those of majority, controlling minority and minority investors', suppliers', Employees' and consumers' are optimized. Such corporations are able to pay: sufficient dividends, living wages to employees, suppliers on time and uphold social and environmental responsibilities (Aras & Crowther, 2008; Maher & Andersson, 2000; Škare & Golja, 2014; Škare & Hasić, 2016). On the other hand, it has also been acknowledged that poor corporate financial performance, financial distress, scandals, and bankruptcies are at-least in part the result of inappropriate corporate control structures: unfettered managerial power or poorly managed agency conflicts(Goswami, 2002; Hassan Che Haat, Abdul Rahman, & Mahenthiran, 2008); that, where the governance structure of corporations

are inappropriate, sectional interests take precedence precipitating sharpened conflict of interests, manifested in excessive risk taking, excessive leverage, insolvency and bankruptcy or less than optimal financial performance, excessive liquidity, and destructive diversification.

Financial leverage is at the center of Firm financial performance, liquidity and solvency crisis, bankruptcy and corporate failure. The actual amount of leverage in the capital structure is determined subject to corporate governance controls and the CEO's personal influence power and idiosyncrasies.. Financial leverage is used discretionally by management for a number of reasons: as a governance instrument: to restrict overinvestment, and, conflict over free cash-flows(Jensen, 1986; Shleifer & Vishny, 1992); source of finance, where management is faced with capital market information asymmetry(Myers & Majluf, 1984), or, to lever equity, ROE and as a source of financial flexibility(Bethlehem, 1978; Gan, 2007; R. Huang & Ritter, 2005). However, where management has discretionary powers, the risk of possible excessive leverage and poor debt term structure precipitating bankruptcy triggers risk aversion (Daily & Johnson, 1997; Gormley & Matsa, 2016; Van Essen et al., 2015).

Corporate finance research across the world on the relationship between financial leverage and corporate financial performance focusing on total debt level, has posted mixed results. Whereas some studies show negative relationship(Bhagat & Bolton, 2008; Ghosh & Moon, 2010; Kayhan & Titman, 2007), others have shown positive relationship (Fosu, 2013; Margaritis & Psillaki, 2010; Oboh, Isa, & Adekoya, 2012) and yet others inverted U relationship(Dias Jr & Ioannou, 1995; Skopljak & Luo, 2012). Empirical literature equally reflects divergence. While some studies find negative relationship(Nunes, Serrasqueiro, & Sequeira, 2009; Salim & Yadav, 2012;

Schulz, 2017; UDEH, NWUDE, ITIRI, & AGBADUA, 2016), others show positive relations(Baum, Schäfer, & Talavera, 2006; Margaritis & Psillaki, 2010; Narang).

These studies are premised on the existence of optimal leverage ratio. Omollo et al. (2018), in an empirical analysis of listed companies at the NSE observed significant negative relationship between debt ratio and ROA and an insignificant relationship with ROE. Similarly,Salamba (2015) observed a negative relationship between financial performance and debt ratio. Both Salamba (2015) and Omollo et al. (2018) are consistent with pecking order theory that debt ratio in capital structure decreases with increase in growth opportunities and profitability (McConnell & Servaes, 1995). Consequently, debt ratio is negatively correlated to profitability and growth opportunities which are both positively correlated information asymmetry but inversely related to firm size(Schulz, 2017; Yapa Abeywardhana, 2016).

An analysis of the findings among listed firms considered mature with less information asymmetry provides evidence of an underlying problem: while (Leon, 2013; Martis, 2013; Muhammad, Shah, & ul Islam, 2014; Omollo et al.; Salim & Yadav, 2012; UDEH et al., 2016; Yazdanfar & Öhman, 2015) obtain significant negative effect of financial leverage on profitability, consistent with dynamic tradeoff capital structure theory, (Fosu, 2013; Hameed, Iqbal, & Ramzan, 2012; Masavi, Kiweu, & Kinyili, 2017; Miller & Friesen, 1984) obtained significant positive effect. Further, using a mixture of low and high growth French industry firms,(Margaritis & Psillaki, 2010) observes significant positive relation between leverage ratio and firm financial performance. The diversity in findings emphasizes the need for other explanatory variables so far omitted from these studies.

Recent corporate finance research finds significant other factors such as, unused debt capacity(Hess & Immenkötter, 2014; RAMS); firm size(Odalo, Achoki, et al., 2016); growth opportunities(Margaritis & Psillaki, 2010; McConnell & Servaes, 1995); managerial power(Zhang & Zhang, 2014) and corporate governance(Yaseen & Al-Amarneh, 2013) in the determination of the relationship between leverage ratio and financial performance. These findings point to the relevance of additional factors in the relationship between financial leverage ratio and firm financial performance.

Appropriate corporate governance structures are expected to provide strategic direction and control without excessively curtailing CEO Power to motivate innovation for firm performance(Amedu, 2016; McConnell & Servaes, 1995). The role of the CEO in an organization is, subject to corporate control, to integrate the firm's competencies to effectively respond to environmental dynamism so as to effectively deliver the desired outcomes. Subject to corporate control, the CEO influence attenuates the positive effects of leverage or antagonizes or buffers the negative effects. The role of a contingency moderator variable is to increase, or reduce or antagonize the effect of an independent variable on firm outcomes(Aguinis et al., 2017). A number of studies on NSE listed firms have examined the relationship between financial leverage and financial performance but omitted the role of CEO power or its equivalents on this relationship (Shibanda, 2000; Wesa & Otinga, 2018; Masavi et al, 2017). Given the emerging criticism of the ability of BODs to control CEO power(L. A. Bebchuk & Fried, 2005; Gümbel, 2006) and given the weak corporate governance, excessive leverage, liquidity and solvency crisis, and the declining financial performance of companies listed at the NSE, this study sought to establish the moderating effect of CEO Power on the relationship between financial

leverage, and firm financial performance, of listed companies at the Nairobi securities exchange.

1.3 Research Objectives

1.3.1 General Objective

This study sought to determine the moderating effect of CEO power on the relationship between financial leverage and financial performance of listed companies at the Nairobi Securities Exchange.

1.3.2 Specific Objectives

This study was guided by the following specific objectives:

1. To determine the effect of debt ratio on firm financial performance
2. To establish the effect of debt-equity ratio on firm financial performance
3. To assess the effect of interest coverage on firm financial performance
4. To establish the effect of CEO Power on firm financial performance
5. To determine the moderating effect of CEO power on the relationship between debt ratio and firm financial performance
6. To evaluate the moderating effect of CEO power on the relationship between debt-equity ratio and firm financial performance
7. To determine the moderating effect of CEO power on the relationship between interest coverage and firm financial performance

1.4 Research Hypotheses

The study was guided by the following hypotheses:

H_{01}: Debt ratio has no significant effect on firm financial performance

H_{02}: Debt-Equity ratio has no significant effect on firm financial performance

H_{03}: Interest coverage has no significant effect on a firm's financial performance

H_{04}: CEO power has no significant effect on a firm's financial performance

H_{05a}: CEO Power has no significant moderating effect on the relationship between debt ratio and firm financial performance

H_{05b}: CEO Power has no significant conditional effect on the relationship between debt-equity ratio and firm financial performance.

H_{05c}: CEO power has no significant moderating effect on the relationship between interest coverage and firm financial performance

1.5 Significance of the Study

This study sought to establish the moderating effect of CEO power on the relationship between financial leverage and financial performance of listed companies at the NSE. It has therefore made contribution to theory, policy, and knowledge in the following respects:

By establishing the relationship between debt ratio, debt-equity ratio, interest coverage and financial performance, this study permits practicing managers, to review the leverage ratio and the balance between short-term and long-term debt that optimizes a firm's financial performance with the ultimate aim of optimizing the debt term structure to avoiding excessive and value destroying leverage. The study identifies the relative significance of each of these parameters and their role in the relationship.

By determining the effect of CEO power on the relationship between financial leverage and corporate financial performance, the study contributes to knowledge relating to governance conditions useful in establishment of appropriate corporate governance policies that enable firms to employ suitable leverage level in the capital structure to post desirable return on equity.

The study also contributes new knowledge to Dynamic tradeoff, pecking order, upper echelon and Agency theories regarding managerial behavior in relation to financial leverage choices, under variable CEO power and the resulting effect on firm financial performance. In this regard the study extends variables in consideration for leverage decision under dynamic tradeoff theory and managerial behavior in the case of pecking order, upper-echelon, and agency theories, under variable corporate control structures. The overall effect of the study is to extend reality into the theoretical models relating leverage and financial performance by extending the range of variables in consideration to include CEO Power(Namazi & Namazi, 2016).

1.6 Scope of the Study

The research examines the effect of financial leverage and CEO power on firm financial performance, of listed companies at the Nairobi securities exchange from 2010 to 2019. This is a period of relative macroeconomic stability and characterized by strong economic growth in Kenya. The study concepts include financial leverage, CEO Power, and firm financial performance. The study is guided by four basic theories: the dynamic tradeoff and pecking order theories of capital structure, agency theory of the firm, and upper echelon theory. The study setting is the Nairobi securities exchange: the foremost securities exchange in east and central Africa, with global outreach and the only securities exchange in Kenya attracting the leading corporate entities and investors in and to the region. The study is limited to company years of all listed firms at the Nairobi Securities exchange between 2010 and 2019 with complete data set. The scope of the study is motivated by the observations at the NSE which include excessive leverage, declining financial performance, and weak corporate governance which lead to the hypothesized effect. Cross-sectional time series approach was applied to enhance the study sample size to at least 380(Memon

et al., 2020). A ten year period from the most current 2019 to 2010 was used to achieve the sample size. It was also considered ideal period to retain static panel and avoid excessive sample dynamism associated with dynamic and long panel periods (Park, 2011)

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents an overview of literature relating to the study. Key concepts are defined and theoretical framework, empirical literature and conceptual framework are discussed.

2.1 Concept of Firm Financial Performance

Firm financial performance is one of the dimensions of a multi-dimensional concept of firm performance (Harrison & Wicks, 2013). The other dimensions include environmental and social performance. It can also be seen, according to Santos and Brito (2012),as one of the two second order dimensions of the concept of firm performance: the other second order dimension being strategic performance. While financial performance dimension includes first order performance indicators such as market value, growth, and profitability, the strategic performance indicators include customer satisfaction, employee satisfaction, environmental performance and social performance.

Financial performance is a measure of the extent to which a firm delivers its economic goals(Barney, 2002).It measures not just a firm's value to its stakeholders but also the firm's own financial health: the ability of the firm to survive into the future, which is essential to most stakeholders in decision making for effective risk management (Crane, Laurence, & Langstraat, 2005; Naz et al., 2016; Orlitzky et al., 2003). According to Orlitzky et al. (2003), using goal attainment dimension, three basic methods have been used to measure firm financial performance: accounting, market and survey methods. Accounting methods measure firm internal efficiency in

generating value for its stake holders; market methods measure the degree of satisfaction of the firm's shareholders; and the latter provides stakeholder subjective estimate of the firm's financial performance. All stakeholders of a firm however, are interested in a firm's financial performance not only as a value preposition but also as a measure of its stability and going concern status (Li, Wang, & Deng, 2008).

According to Santos and Brito (2012) financial performance is a close association through factor analysis of three first order indicators of firm performance: growth, profitability and market value. Each of these first order performance indicators have unique value prepositions to a distinct category of a firm's stakeholders but together are highly associated. Profitability measures the internal efficiency and effectiveness of a firm and its management in generating return on capital. Profitability is not only essential in identifying a firm that meet stockholders demand for return, but also management that are able to effectively achieve shareholder goals. Further, it is essential for efficient capital allocation within a firm, between firms in an economy, and also as an indicator to all stakeholders about future survivability of the firm. Only profitable firms and projects in an economy receive financial resources. Market value measures the degree of satisfaction of the firm's stockholders(Naz et al., 2016; Orlitzky et al., 2003): a firm that optimizes stockholder demand for income, capital gain and risk results in optimal levels of share demand and share price. Growth not only improves and indicates the firm's ability to withstand competitive forces to survive, but also to preserve, and create jobs in an economy.

The principal objective of performance measurement is firm evaluation. Performance measurement is the process by which an organization monitors the important aspects of its processes, systems, and outputs. Typically, the data so obtained is compared

with the set goals and objectives to determine the next course of action(Kueng, 2000; Neely, Gregory, & Platts, 1995). It is the process of denotation of the effects of actual organization's performance using organization symbols for presentation and communication: the measurement of the results of organization's activities(Al-Matari, Al-Swidi, & Fadzil, 2014). Effective communication of performance precipitates stakeholder action.

Corporate financial performance measurement is grounded on shareholder firm-theory where the firm-objective is shareholder wealth maximization. It's a measure of actions taken to achieve an objective whose precision is in money terms (Naz et al., 2016) and it involves measurement of two variables: risk and return on investment (Wolski, 2017) which together measure investment effectiveness. Investment risk measures the variability of investment return: the ability of the firm to post the expected return; how much an investment risk a firm poses. Financial performance is used to evaluate companies for investment or companies in aggregate holding risk constant. According to Peterson (2017), investment risk is the variability of return. du Toit (2004), considers risk as the adverse subset of the set of outcomes of a particular course of action or process. Peterson (2017) avers that decision maker cannot ignore risk and uncertainty in investment decision but make decisions with known risk. The purpose of securities exchange is to reduce uncertainties in investment through the listing rules. Listed securities can therefore be evaluated on the basis of return given the known acceptable risk.

Return on the other hand is a measure of wealth generation potential of the firm or its profitability given its known risk. Whereas many researchers use market based profitability measures, others use accounting based measures (Tsoutsoura, 2004). The

two perspectives have different implications. While accounting measures are more historical assuming past conditions continue into the future, internal efficiency oriented, with management bias, market based measures are more future oriented, and inclined to stakeholder bias in line with objective function of the firm. The most commonly used measures include ROA, ROE, ROCE, EPS, Tobin-Q, Dividend Yield, P/E ratio, Abnormal Returns, Annual Stock Returns, and Market to Book ratio(Al-Matari et al., 2014; Tayeh, Al-Jarrah, & Tarhini, 2015).While measuring value preposition to stakeholders as much as the market based measures, accounting measures also measure the effectiveness of management, besides, business efficiency in capital utilization(Hutchinson & Gul, 2004; Ibrahim & Samad, 2011; Mashayekhi & andBazazb, 2008; Nuryanah & Islam, 2011), and therefore is useful in predicting future performance. This study therefore is inclined to use, consistent with financial leverage objective, accounting measure; ROE for financial performance.

Firm financial performance cannot be seen as the primary objective, which is the socio economic welfare of individuals as well society but rather a tactical one. Firm profitability and firm value show strong positive association with and can be taken as a proxy measure for firm growth (Cao, 2016; Chowdhury, Sonaer, & Celiker, 2018; Musah et al.; Roberts & Leary, 2004; Watanabe, Xu, Yao, & Yu, 2013). Whereas profitability and firm value confer cash-flows to stockholders, employees and management of the firm as well as society through higher taxation, firm growth, derived from firm profitability, is responsible for employment creation and positive growth in social- economic welfare.

2.2 Concept of Financial Leverage

Financial Leverage refers to the degree a firm uses fixed charge capital to permit equity to finance more assets (Al Momamni & Obeidat, 2017). It results in the firm controlling more assets while retaining capital structure flexibility without diluting control. It may also be seen as the use of fixed charge capital to leverage return on equity. It thus creates a relationship between earnings before interest and taxes (EBIT) and the return on equity (ROE); the capacity of a firm to deploy fixed charge capital to multiply the effect of changes in EBIT on EPS through tax savings and differential between ROI and fixed charge costs.

While a firm may be fully equity financed and therefore exposed to zero financial leverage, agency cost of debt and bankruptcy risk make it extremely costly to have a highly leveraged firm beyond an optimal debt level(Jensen & Meckling, 1976). Financial leverage provides a number of benefits to a firm amongst which includes additional funding intended to leverage or enhance funding of the firm in asset acquisition without dilution of control. It is also intended to leverage ROE by posting higher ROCE than the specific cost of such funds to enhance earnings attributable to residuary claimants (Kraus & Litzenberger, 1973; Long & Malitz, 1985; Modigliani & Miller, 1963). Under perfect market conditions, Bethlehem (1978); Myers (1977) supposes that firms should apply fixed charge capital to increase investment in assets up to the point where the expected ROCE is at least equal to the fixed charge capital costs. However, fixed return capital not only levers capital and income as afore mentioned, but also impacts a firm's bankruptcy risk and may magnify reduction in EPS during recession.

In this case leverage is mainly concerned with fixed charge capital and may be measured as debt/equity ratio also called gearing ratio or long-term debt to total assets ratio also referred to as debt ratio. The debt or gearing ratio may be measured based on purely financial statement numbers or based on purely market numbers. Alternatively, it may be measured through interest coverage ratio or degree of financial leverage. Although interest coverage ratio measures the risk of financial distress just as debt ratio or debt-equity ratio, the degree of financial leverage measures the sensitivity of ROE to changes in sales or EBIT.

Under market conditions with transaction costs, information asymmetry, financial distress costs, and taxes, the cost of fixed charge capital becomes highly dependent on the firm's investment characteristics and the underlying assets configuration which determine the default risk and therefore credit risk (Long & Malitz, 1985). Whether or not the firm achieves the optimal financial leverage or any other leverage level, may further depend on transaction costs, CEO discretions, and past financing history (Hennessy & Whited, 2005; Kayhan & Titman, 2007; Roberts & Leary, 2004)

Jensen (1986) recognizes that the use of debt in the capital structure may act in a way that prevents management from investment in negative NPV projects and value destroying behavior such as consumption of excessive perquisites by committing the firm to outflow of free cash. However the excessive use of debt results in asset substitution behavior on the part of management, which transfers wealth from debt holders to equity holders and increasing bankruptcy risks. Excessive debt therefore leads to debt-holders increasing bonding and monitoring costs to reduce asset substitution behavior, precipitating increased residual agency cost of debt, increased operating and financial distress costs, as well as reduction in operating revenues

(Jensen & Meckling, 1976). Ultimately, it leads to underinvestment (Myers & Majluf, 1984).

Stulz (1990) agrees with Jensen (1986) that even in the absence of corporate tax shield, the overinvestment tendency of management, makes shareholders reluctant to provide additional equity thus forcing management to resort to use of debt resulting in underinvestment: management ignoring positive NPV projects whose IRR is lower than their specific cost of capital. Thus whereas some amount of financial leverage may result in increasing operating performance (J. R. Graham & Leary, 2011) and leveraged ROE provided the gross debt charge is lower than ROCE (Bethlehem, 1978). Excessive use of financial leverage on the other hand, may result in declining operating performance. This tends to suggest that there exists an optimal financial leverage level that maximizes firm value or return on equity arising from trading tax savings, and differential costs with disadvantages of debt (Kraus & Litzenberger, 1973; Myers & Majluf, 1984).

If transaction costs are assumed away in a single financial period analysis, the firm adjusts leverage in the capital structure instantaneously (Myers, 1977). However in a world with multi-period trading environment, transactions costs, and information asymmetry in addition to bankruptcy cost and taxes, the firm lets financial leverage level in the capital structure wander significantly from the target capital structure (Hennessy & Whited, 2005; Roberts & Leary, 2004). This implies that any observed financial leverage ratio may in fact represent the drift and not target ratio and that firms may operate on either side of optimal leverage ratio leading to either increasing or declining firm financial performance with increase in financial leverage. Factors that may result in firms operating above the optimal leverage ratio include, transaction

costs, agency costs and information asymmetry (Fischer et al., 1989; Frank & Goyal, 2009; Roberts & Leary, 2004).

While a number of corporate finance literature consider homogenous debt as a corporate discretionary variable that can be varied to achieve corporate objectives (Bethlehem, 1978), some studies including DeMarzo, Fishman, and Hagerty (2007); Rauh and Sufi (2008) consider the heterogeneity. Firms not only change the debt size but also the structure; therefore making the composition of a firm's debt important in understanding the financial risk (Rauh & Sufi, 2010). According to Pike and Neale (2009), a firm may adopt matching, conservative or aggressive approach in asset financing, depending on the trade-off between interest cost, investment yield, availability of finance, and financing risk, in determining the ratio between short-term to long-term debt. Short-term finance is considered cheaper but entails rigid terms that may expose a firm to financial distress. Moreover it can be replaced by long-term debt when required or refinanced to extend its term thus providing some flexibility. An organization chooses a mixture of debt term-structure for a myriad of reasons. However, this may create a debt overhang with disastrous consequences during economic downturn (Shleifer & Vishny, 1992). An optimal mix of short-term and long-term debt results in increased firm value.

Whereas the debt structure may impact the likelihood of financial distress and can be remedied through debt restructuring, the total debt level determines the likelihood of insolvency which precipitates firm bankruptcy and requires capital reorganization. Total debt also, not only increases the incentive for high-risk high-return or negative NPV investments, but also creates disincentive for investment in optimal return or positive NPV projects(Bratton, 2006). According to Bratton (2006), Leverage level

increases both with decreases in firm value and increases in total debt. Shareholders, creditors, bondholders, debenture-holders and management monitor the leverage level in the organization measured variously using both accounting and market measures, and interest coverage to estimate the level of financial risk exposure arising from investment in the organization. Financial intermediaries, debenture and bond holders also use these measures as early warning system for financial distress(Bratton, 2006). The relative claim of debt and equity against firm value is predominantly used as a tool for measurement and transfer of control when the firm is distressed.

2.2.1 Debt-Equity Ratio

Debt-Equity ratio is the ratio of a firm's total debt to total Equity. The measure may be based on market values of debt and equity or the book values. Although backward looking, and highly affected by accounting principles such as accrual and prudence, book value based debt-equity ratio is critical to the understanding of a firm's total financial risk. The total debt includes long-term debt, short-term debt, spontaneous debts and non-debt items included in liabilities while equity is the total amount of funds contributed by those who control the enterprise: the shareholders. Together debt and equity amount to the total funds that have been used to fund entity assets. The ratio is relied upon by creditors, credit rating agencies and management in assessing the financial default risk in the capital structure of the firm(J. Graham & Harvey, 2002; Kigen, 2016). It is also used to predict debt capacity and the exposure to possible financial distress(Barclay, Smith, & Watts, 1995; Barclay, Smith, & Morellec, 2006). Barclay et al. (2006), argue that debt-equity ratio is a more reliable measure of financial risk than gearing ratio, measured using market values, which is distorted by capitalized growth opportunities, and that, leverage is intended to finance assets in place and not growth opportunities. Arguments against the use of debt-equity

ratio point to distortions created by accounting principles on financial statement numbers by expensing value creating expenditure, possibility of negative equity, and the fact that, for small firms, the market to book ratio may be insignificant. This argument becomes clear when the firms market value is declining(Bratton, 2006). Some researchers prefer to use both market price and book value based debt-equity ratio (Booth et al., 2001; Byoun, 2008; Kayo & Kimura, 2011). This measure is also used by financial intermediaries and bondholders in loan indenture as an early warning system for possible financial distress to trigger debt restructuring negotiations and to increase monitoring(Bratton, 2006).

2.2.2 Debt Ratio

This ratio can be computed as Long-term Debt to Total Assets, short-term debt to total assets or Total Debt to Total Assets ratio. Where long-term debt is used, it is the ratio of a firm's fixed charge debt to book value of total assets or market value of long-term debt to market value of total assets. Unlike book value, market value considers the growth opportunities factored into market price by the equity investors. Equity investors, observing the book values and future prospects of the firm based on growth opportunities, factor all in the stock price (Fama, 1970). Market value of debt to market value of total assets is future oriented. According to Kayo and Kimura (2011), it provides a more realistic measure of leverage suited for evaluation of the future risk of financial distress since it's based on stock price which is closer to the firm's intrinsic value. While other researchers prefer to use book value of debt and book value of total assets (Robert and Sufi, 2009; Cai and Zang, 2011; DeAngelo, DeAngelo and Whited, 2011; DeAngelo and Roll, 2015), some researchers prefer to use market value of debt and market value of total assets (Fama & French, 2002; Roberts & Leary, 2004; Welch, 2004). Market price based leverage is sensitive to

changes both in stock price, the related volatility and size of book debt. However, the puzzle with market based leverage ratio is the reluctance of management, not explained by transaction costs, to adjust book debt in response to changes in market price based leverage arising from changes in stock price, perhaps the volatility is incompatible with management planning function(Ferris et al., 2018; J. Graham & Harvey, 2002; Yin & Ritter, 2019). Ferris et al. (2018), notes asymmetric response, where small firms with highly volatile stock returns and which could be highly levered, decrease book leverage in line with decreases in market price based leverage, through equity issue in characteristic market timing hypothesis but no increases in response(Hovakimian, 2006). Kayo and Kimura (2011) observes that market price based leverage measures debt finance for total assets inclusive of growth opportunities while book based leverage measures debt finance for assets in place. The fact that intangible discretionary growth opportunities have negative marginal debt capacity is reflected on the decline in market price based leverage with growth in stock price. While users of market price based leverage consider it as long-term, future oriented, and criticize book based leverage as historical, short-term measure, there is no agreement on their relationship. According to Gentry and Shen (2010), market price and book based leverage measures do not show evidence of convergence and therefore reflect different performance dimensions. Moreover, the two measures do not load to the same higher order factor in factor analysis.

Financial intermediaries, bond and debenture holders use both market and book based debt ratios in their loan indentures as early warning system, considering that market based debt ratio is more relevant when growth opportunities are negative while book based leverage when positive(Bratton, 2006).

2.2.3 Interest Coverage

It is the number of times fixed finance charges are covered by available earnings measured by EBIT/Interest cost (Dey et al., 2018). Interest coverage measures leverage through measurement of exposure to default in interest and other charges payments. The likelihood of default in interest payment, measured inversely by interest cover, increases with increase in debt size or interest rate which reduces the interest cover assuming constant EBIT. The total debt or fixed charge capital impact on the firm's equity income flows: EPS, through degree of financial leverage which increases its sensitivity to changes in EBITDA. According to Greenwald (2019), interest coverage ratio in a debt covenant includes the coverage of interest, fixed charges, cash interest payments, and capital and interest repayment. The total debt has implications to income flows through and is sensitive to interest cost. Most debt covenants that seek to limit a firms borrowing capacity use interest coverage ratio (Bratton, 2006; Greenwald, 2019; Nash et al., 2003). Other studies that have used this leverage measure include(Enekwe, Agu, & Eziedo, 2014). The ratio goes by alternative names reflecting alternative ways of computation such as fixed charge coverage, debt service coverage, and cash interest coverage. It sets a ratio of interest payments to earnings usually a measure of EBITDA. The relationship permits debt capacity and leverage level of a firm to vary with income while causing managers to maintain a precautionary margin of safety. It can be used as an early warning signal for deteriorating financial leverage or it can be used to confirm the signals obtained from book or market leverage. Interest coverage ratio is sensitive to both loan size and interest rate and is more relevant in the developing countries where interest rate is significantly high and highly volatile. In debt covenants where interest coverage is used, mostly, it is used in addition to total debt limits, which implies it operates as

additional limit during times of high interest rate regime to reduce further the amount of borrowing that a firm can make(Greenwald, 2019). According to Ji (2019), interest coverage ratio, both accrual and cash based, is commonly used by capital market investors as well as financial institutions to assess sustainability of profits and prediction of financial distress. The draw back as a measure of leverage is its backward looking nature but is preferred due to its flexibility. However, for it to be used in predicting future financial distress, it can be adjusted to take into account expected future events.

2.3 Concept of CEO Power

Power in an organization setting is the ability to influence outcomes; the ability and capacity to get things done (Bloisi, Cook, & Hunsaker, 2007; Finkelstein, 1992; Mintzberg, 1991). It refers to the capability of the CEO, to use structural or ownership power to influence important board decisions and to effect individual goals to achieve organizational objectives(Amedu, 2016; Combs et al., 2007). It is the concentration of decision making power in the hands of the CEO(Liu & Jiraporn, 2010).

2.3.1 Manifestation of CEO Power

CEO Power may be manifested in many ways including; through the coincidence of management titles such as CEO, Chairman, Founder, shareholder, director, on the same person(Daily & Johnson, 1997; Dalton et al., 1998). Coincidence of tittles on a few individuals or the CEO such as CEO and chairman of BOD increases CEO power relative to BOD members whose purpose it is to hire, monitor, evaluate, reward, and fire the executives(Adams et al., 2005; Fama & Jensen, 1983). CEO influence power is an operating environmental contingency and its first manifestation lies in executive

pay structure, followed by composition, and corporate share-holder structure(Van Essen et al., 2015).

The CEO of a corporate entity heads the management team that is charged with the responsibility of initiating and implementing strategies that deliver the optimal corporate value. Corporate entities arise from the cooperative efforts of diverse stakeholders with a view to sharing the outcome. The stakeholders of a corporation include: its customers who look up to the corporation for reliable supply of a diversity of quality goods and services at fair prices; the employees, for reliable living income; the suppliers of inputs and services, for timely fair value for supplies; the providers of capital, for fair return and capital safety; and the communities in which the corporation operates, who incur social and environmental costs from the operations of the corporate entity and expect social and environmental protection (Harrison & Wicks, 2013). A well-directed and controlled corporate entity sustainably satisfies the interest of all its stakeholders (Stijn & Burcin, 2006). The CEO's responsibility is to provide direction and drive to deliver corporate objectives. The CEO can only affect the outcomes of an organization if he or she has influence over strategic decisions(Liu & Jiraporn, 2010)

According to Daily and Johnson (1997) in agreement with Finkelstein (1992), CEO is generally regarded as the most powerful person in an organization and, acting alone, has the ability to influence organization outcomes. The power is attributed to four sources: expertise, legitimate authority, share ownership and prestige.

2.3.2 Structural power

Structural or legitimate or hierarchical or bureaucratic power is the influence power of a CEO arising from the official status or hierarchy in the organization which

legitimately requires subordinates to comply with legitimate instructions and permits CEO discretion(Daily & Johnson, 1997). It is the principal source of power for executives and is institutionalized (Daily & Johnson, 1997; Finkelstein, 1992; Hambrick & Mason, 1984). The institutional framework including CEO duality, proportion of executive directors on BOD, CEO tenure, BOD size, and shareholding structure, significantly affect CEO power.

2.3.2.1 CEO Duality

The CEO power is increased through concentration of power on one person such as the coincidence of titles like CEO and Chairman of BOD on the CEO persona. CEO duality increases CEO ability to influence the BOD through control of firm specific information to the BOD, BOD agenda, nomination of new members and manipulation of BOD proceedings to take advantage of the BOD(Daily & Johnson, 1997; Dalton et al., 1998; Van Essen et al., 2015).

2.3.2.2 Proportion of Executive Directors in BOD

The CEO's power is also increased by the power base nominated to the Board consisting of the proportion of the executive directors, aligned with him or her: the lower the proportion of executives on the BOD, the lower the chances of CEO positively canvasing his point of view in the BOD plenary (Daily & Johnson, 1997; Finkelstein, 1992; Van Essen et al., 2015).

2.3.2.3 CEO Tenure

It has also been observed that CEO power is lowest at turnover and increases with tenure as performance confirms CEO expertise and his networks grow in the BOD(Amedu, 2016). According to J. R. Graham et al. (2019); Van Essen et al. (2015) the most obvious sign of CEO power is long tenure. Board independence is

highest at CEO turnover and declines with CEO tenure, with decline stronger following excellent performance. Longer tenure predisposes CEO to CEO duality and Powerful CEOs become entrenched. The more successful CEOs are rewarded with longer tenure and obtain higher bargaining power against the board of directors(Daily & Johnson, 1997). A powerful CEO may bargain for less monitoring which may include weakened board, or appointment to board and in some cases board chair; alter the compensation strategies and may become entrenched, resulting in a more risk-averse management with the resultant reduction in corporate leverage, earnings volatility and financial performance(J. R. Graham et al., 2019).

2.3.2.4 Board Size

According to Van Essen et al. (2015), board size is another critical factor that may increase or reduce CEO power. Smaller boards are more socially cohesive and easily develop consensus over issues than larger boards; a fact which can constrain their effectiveness in containing managerial power. Further, larger board effectiveness may be constrained by communication and coordination challenges (L. A. Bebchuk & Fried, 2005). The internal weaknesses provide an opportunity to the CEO to exert influence over BOD decisions(Van Essen et al., 2015).

2.3.2.5 Block Shareholding

Further, it is observed that distribution of ownership of the firm can also enhance or reduce CEO power(Van Essen et al., 2015). Large concentrated shareholding have the incentive; having invested massively in the firm and the capacity to effectively monitor directors. Unlike atomistic shareholders, large shareholders have the capacity to formally nominate and vote for directors and informally communicate with the directors. Atomistic shareholders have uncoordinated and dispersed strategies which

allow directors to make their own idiosyncratic choices with the only effective vote being selling the share. Block holding of 5% and above is observed to negatively relate to CEO compensation which proxy for monitoring (L. A. Bebchuk & Fried, 2005; Shleifer & Vishny, 1997; Tosi, Werner, Katz, & Gomez-Mejia, 2000).

2.3.2.6 Institutional Shareholding

Similar to block holding, institutional shareholders equally have the capacity and interest to closely follow firm management. Van Essen et al. (2015), observes that institutional holding are also negatively associated with CEO compensation due to closer monitoring.

2.3.2.7 Only insider in the BOD

The CEO‘s influence power amongst managers is diminished where other managers participate alongside in BOD decision making(Amedu, 2016; Finkelstein, 1992). Other managers sitting in the BOD reduces the CEO’s information monopoly and therefore information power aside from possible contention for the CEO’s position in the organization(Amedu, 2016).

2.3.3 Ownership Power

According to Daily and Johnson (1997), manager or inside share ownership, being evidence of coincidence of ownership and managerial tittle, is a significant source and evidence of CEO power. According to Amedu (2016), manager share ownership confers some control over BOD. Share ownership also is soon followed by other manager entrenchment strategies such as golden parachutes and manager specific investments which make it not only costly but also difficult to replace due to their voting power and networks(L. A. Bebchuk & Fried, 2005; Shilon, 2015; Shleifer & Vishny, 1989). Daily and Johnson (1997) observes that CEOs with shareholding in

their firm are better able to define firm strategy, influence new director selection and forestall removal. BODs incentivize management to induce risk taking behavior using strategies such as performance and stock based compensation (Brisker & Wang, 2017; Jensen & Meckling, 1976). However, highly incentivized managers may over-lever the firm precipitating bankruptcy. Management are therefore also restrained from excessive risk taking through compensation strategies such as executive (ESOPs) and inside debt compensation which increase their power relative to BOD(Brisker & Wang, 2017). ESOPs are applied to align management goals with shareholder's to moderate management risk-taking behavior(Shilon, 2015). Executive share ownership plans(ESOPs) have been used by firms and disclosed in financial reports as a principal policy tool for risk management(Shilon, 2015). The advantage of the share ownership approach to corporate control is that it can be mandated and institutionalized.

2.3.3.1 Shareholder Control

Relationship with founder member or being one provides the CEO with a strategic connection and power over the BOD (Adams et al., 2005; Cheikh & de Gabès, 2014; Finkelstein, 1992). However the critical components of this power source are the aligned interests and the corporate control and not the historical founding nor blood relations. It follows therefore that in similar circumstances of corporate control CEO is most likely to draw significant corporate influence(Leech, 2013). Citing Berle and Means(1932), Leech (2013) posits that in a corporate environment where shareholding is widely dispersed with the largest shareholding being less than 1% of the voting power, no shareholder has the interest nor sufficient power to offer real influence on the management. On the other extreme, controlling shareholders, whether a majority or sufficiently large minority has the ability and incentive to

engage management formally and informally resulting in the consequent stability. According to Berle and Means(1932) in Leech (2013), minority control may arise from legal contract, dual-class shares, coaction of minority block shareholdings or coalescing of proxies around a sufficiently large minority block or a combination of these. The relationship between the management and the controlling shareholder may be taken to the highest level where the understanding between the two is so complete that informal communication is no longer necessary(Leech, 2013). Between the two extremes, shareholder rights awareness and activism exist amongst significant influence shareholders and institutional investors who, although do not possess controlling interest nor desire to do so, are conscious of shareholder duty in shaping the destiny and value of their investment through participation in strategic decisions(Leech, 2013)

Although the absolute legal control of corporate management is conferred by 50% plus one of the voting shares, a working control is often considered conferred by shareholding of a minimum of 20% of ordinary shares(La Porta, Lopez-de-Silanes, & Shleifer, 1999; Leech, 2013). The London stock exchange considers 30% control threshold with 3% or more declarable interest. It's important to note according to Leech (2013), that the voting power of the dominant minority holder depends on size of minority holding and the dispersion of the remaining shareholding affecting their ability to coalesce.

2.3.4 Prestige power

A manager's level of prestige not only provides additional source of influence power but also legitimacy for the organization and additional networks of individuals with influence power which protects the firm from environmental uncertainties(Daily &

Johnson, 1997; Finkelstein, 1992).According to D'Aveni(1990) in Daily and Johnson (1997), managers with high level of prestige are not associated with negative corporate outcomes such as bankruptcy, which often occur within five years of the manager's exit, indicating the ability of manager prestige to protect the organization against environmental uncertainties. Prestige power is increased by educational background social networks, prior success, and external affiliations(Amedu, 2016; Daily & Johnson, 1997). However prestige power cannot be institutionalized as it depends on the persona of the manager.

2.3.5 Expertise power

Management derive power from functional area expertise that allows them to make strategic choices that manage environmental contingencies resulting in organization's success(Amedu, 2016; Finkelstein, 1992). The power derives from functional exposure and networks developed within and external to the organization which permits not only better strategic choices but also independence in decision making(Finkelstein, 1992). The Expert power however, does not relate with perceptual power measures(Daily & Johnson, 1997; Finkelstein, 1992) and since it is personalized, cannot be institutionalized in an organization but rather factored in manpower selection process.

2.3.6 Board Oversight

The CEO and the management team are responsible for the delivery of stakeholder value for which influence power is necessary(Hambrick & Mason, 1984). The CEO requires power to drive and direct the corporation to achieve corporate goals. However, being presumed value maximizing individuals with personal interests and

subject to moral hazard: the CEO influence power can be diverted for personal goals(Combs et al., 2007).

It is posited that shareholders of a firm create a board of directors to supervise and negotiate selflessly with the value maximizing CEO and top management, at arm's length and that executive optimal contracts, applying incentives, share based and inside debt compensation including defined benefit pension schemes, mitigate agency conflict between executives and shareholders(Fama & Jensen, 1983; Jensen & Meckling, 1976; Shilon, 2015; Van Essen et al., 2015). However, in recent past, this position has been challenged by Management Power Theory(MPT) fronted by L. A. Bebchuk and Fried (2005), who argue that executive contracts are the result of power conflict and not at arm's length; and a reflection of agency conflict, not a mitigation (Gümbel, 2006; Van Essen et al., 2015). At the center of the controversy is whether or not it can be assumed that the directors have the incentive and ability to act selflessly in the best interest of shareholders against the value maximizing management (Gümbel, 2006). Bebchuk and Fried (2005) posit that the directors neither have the incentive nor the capacity to act selflessly in the best interest of the shareholders and least against the CEO reward power; being in charge of the vast corporate resources. This scenario suggests a systemic CEO balance of Power against the BOD and therefore shifts corporate governance attention from BOD to CEO power.

CEO power is an environmental contingency that enables the CEO to influence both strategic choices and performance outcomes of a firm(Hambrick & Mason, 1984; Van Essen et al., 2015). It also enables the CEO to protect the firm from unfavorable effects of environmental uncertainties(Daily & Johnson, 1997). It is apparent that weak and strong CEO power do not result in optimal financial performance and

therefore an optimal range of CEO power that favors optimal outcome of financial leverage-performance relationship may exist. This study therefore assessed the conditional effect of CEO power on the financial leverage-performance relation among firms traded at the Nairobi stock market. The balance of power is essential in understanding how the CEO uses discretion in strategic choices, including leverage level to attain financial performance goals (Gormley & Matsa, 2016; Hambrick & Mason, 1984). Further CEO power is an aspect of corporate governance subject to corporate governance policy. The knowledge arising from this study may be applied in corporate governance policy development.

2.4 Theoretical Framework

This study considered dynamic trade-off, pecking order, Agency and upper echelon theories relevant to this discourse and is hereafter discussed.

2.4.1 Dynamic Trade off Theory

This is a family of models that explain how firms finance their investments over a number of periods taking into consideration several macro-economic constraint variables. The pioneer theory in this family is Stiglitz (1973) who considers financing behavior in an environment of corporate and personal taxes, other factors remaining constant. He concludes that over the long run, it's economical to maximize the use of retained earnings, and the excess of investment over retained earnings to be financed by debt due to tax savings. The basic model has been improved through consideration of other macro-economic variables.

Considering bankruptcy costs, uncertainty of returns, taxes but no transaction costs to allow for instantaneous adjustment of leverage to target optimum leverage, Kane et al (1984) and Brennan and Shwartz(1984) in M. Z. Frank and Goyal (2008)concludes

that firms maintain high levels of leverage to take advantage of tax savings. Fischer et al. (1989), considering bankruptcy costs, uncertainty of returns, taxes and transaction costs, concludes that firms would not rebalance to target leverage frequently but rather allow it to drift from target up to an upper and lower limits before discrete rebalancing action. The drift explains the diversity in leverage levels in an industry and the inverse relationship between profitability and leverage. Roberts and Leary (2004) confirm that at the lower leverage limit a firm rebalances using debt and at the upper limit equity.

Leverage and operating, financing and investing cash flows are interrelated. Theory addresses how these variables interact by making basic assumptions either to decouple or to recognize the interrelationship (Frank & Goyal, 2005). Stiglitz (1973) recognizes the interrelationships of the four variables and assumes operating cash flows are retained. Fischer et al. (1989) on the other hand assumes investment and financing are exogenous and operating cash flows fully retained. The rebalancing of leverage to optimal level involves issue of debt to replace equity or issue of equity to replace debt with no capital gains taxes and personal tax rebate on share purchases. If capital gains tax and no rebate of personal tax on share purchase exist, Fischer et al. (1989) exogenous investing and financing assumption may change giving priority to retained earnings and debt financing before any equity issue. Hennessy and Whited (2005), considering interaction between investing and financing, corporate and personal taxes, financial distress costs, and equity flotation costs, without assumption of full distribution of surplus operating cash flows, concludes target leverage is non-existent and that actual firm leverage is path dependent. Roberts and Leary (2004), further confirms that the presence of market frictions may result in deferment of

adjustment to target leverage creating observed persistence of suboptimal leverage proportionate to adjustment costs.

This study is premised on firm investment financing behavior in a multi-period dynamic environment as explained by Dynamic tradeoff theory. The study assumes that the unique capital structure of each firm in the population to be path dependent. The current and future unique capital structure of each firm in the population takes into consideration past and present macroeconomic or market variables, the unique investment opportunity set with the underlying asset characteristics and managerial decisions consistent with the corporate control environment. While optimal debt ratio may be ideal for firm value maximization, unlike financing, investing and financial performance, it is of second and not first order concern to the firm management (RAMS). The study therefore anticipates a spread of optimal leverage levels even in the same industry.

2.4.2 Pecking order theory

A firm is said to follow pecking order of financing if it prefers internal financing to external and, in case of external financing, debt to equity (Myers, 1984; Myers & Majluf, 1984). Generally, pecking order theories propose a financing hierarchy based on adverse selection as proposed by Myers and Majluf (1984). The basic idea is that, between the owner-manager and the investing public, there exists asymmetric information about the firm value and its growth prospects. In many cases owners of overvalued rather than undervalued firms are willing to sell equity shares outside. When a firm is selling shares outside, the investing public therefore seeks to find out whether it is due to overvaluation. Shares are sold after the firm has reached an exogenous debt capacity and the tradeoff between benefits of debt and demerits is of

secondary importance (Agca & Mozumdar, 2004). According to Cadsby et al (1990) in Frank and Goyal (2008), firms consider equity issue after exhausting opportunities for retained earnings and riskless debt. Whether a firm issues equity or not, depends on market valuation of the ordinary shares of the firm: if severely undervalued due to information asymmetry, the firm skips positive NPV projects. In the financing pecking order, risky debt lie ahead of ordinary shares but behind riskless debt(Myers, 1984; Myers & Majluf, 1984). Considering an investment with no assets in place, Ravid and Spiegel (1997), notes that the entrepreneur and the investor share the projects payoff and riskless debt is used before external equity is issued. According to Frank and Goyal (2005); Halov and Heider (2004), if the investor and the entrepreneur are risk averse and are considering equity and risky debt, the entrepreneurs prefer equity to risky debt. Eckbo and Masulis (1992), concludes that rights issue reduces information asymmetry.

Pecking order theory explains the significance of debt in firm finance: to a large extent firms finance investment using riskless and risky debt; retained earnings is always insufficient to meet investment needs. It further confirms the preposition from dynamic tradeoff theory that a firm may apply risky debt in its capital structure where the degree of information asymmetry affecting its share price is severe and therefore wander away from the optimal leverage ratio. Further, it confirms that Financial Leverage is a critical permanent structure of most firms' capital structure.

2.4.3 Agency Theory

Whereas dynamic tradeoff theories explain how managers select the capital structure over the long run subject to various macroeconomic conditions, agency theory

explains manager behavior in different circumstances in the organization subject to manager's self-interest and corporate control environment.

Bendickson, Muldoon, Liguori, and Davis (2016), observes that long before the formal documentation of agency theory by Jensen and Meckling (1976) and later by Fama1980 and Fama and Jensen(1983), the characteristic self-interest behavior of corporate managers, in organizations where ownership is divorced from management, had long been observed by Adam Smith(1776) and Berle and Means(1932). Jensen and Meckling (1976)expound the theory of agency relationship, the embedded agency conflict and the resulting agency costs. The theory posits that where one or more persons(principal(s)) contract another person or persons(agent) to undertake some service involving delegated decision making authority to the agent, incase both parties to the contract are utility maximizers, it is rational to expect that the agent will not always act in the best interest of the principal. The theory posits that, the principal cannot reduce the divergence in interests at no cost nor can it be reduced fully. Further, it is posited that the full cost of agency problem is the sum of the cost of incentives and monitoring incurred by the principal to reduce the agency costs, bonding costs incurred by the agents and the residual loss in principal welfare.

When related to the corporation, the theory casts management as the agents and shareholders as the principals. The principal and the agents are assumed to resolve the conflict through either the market mechanism explaining the prevalent corporate practices such as financial reporting and financing or through bonding and monitoring. A thread that joins property rights and agency firm hypotheses is the inherent agency cost that exists in any agency relationship as expounded by Jensen and Mecking(1976). Extensions of agency theory of the firm have focused on the

management of agency cost. Fama (1980) demonstrates the efficiency in separation of ownership or residual risk-taking and corporate management and Fama and Jensen (1983), gives structure to the corporate device for monitoring and control. The residual claimants put in funds to guarantee performance of their contract including supply of capital and production technology(Fama, 1980). In a modern corporation, according to Fama, the roles of management and residual claim are separated for risk distribution and performance efficiency.

While the risk-bearers in a modern corporation can sell their claims in capital markets and buy in competing firms and or hedge against losses through diversification of shareholding, the management, have no capacity to diversify human resources out. Any future prospects in the managerial labor market also depends on, and stand to gain the most from, their success in the current firm. According to Fama (1980), no individual security holder has a special interest in the specific performance of a firm comparable to management since security holders can hold a well-diversified portfolio.

Separation of firm control from security ownership results in optimal risk allocation. Each manager has a stake in the performance of managers above and below moreover all managers below have a stake in the performance of all top level managers to provide positive signals to managerial labor market about their collective performance a fact crucial in the identification of directors for management oversight. The board of directors is optimally designed to include inside and outside directors but exclude security holders, to efficiently perform its role of supervision and direction of top level managerial decisions. The all-pervasive issue of managerial discipline is variously handled. While property rights theorists insist that it is the responsibility of

residual claimants without providing a solution to dispersed shareholding in Modern Corporation, stakeholder theorist relegate the responsibility to managerial labor market, the product market competitive forces, and capital markets or takeover forces.

Fama and Jensen (1983) proposes a monitoring device: BOD, consisting of decision hierarchy where initiation and implementation of decisions at lower levels is separated from ratification and monitoring at higher level and hires, fires, compensates managers and ratifies and monitors organization's critical decisions; and incentive system to encourage mutual monitoring among decision agents. The Board of directors and incentive system are in addition to: managerial labor market forces; the competitive product market forces; and the capital market forces.

Although agency theory does not make positive predictions of manager behavior, the negative predictions have largely influenced the development of corporate control devices. In this study the theory is relevant in predicting manager behavior under different organization and corporate control circumstances such as share ownership structures, and board structures, and their impact on leverage with the resulting predicted effect on corporate performance.

2.4.4 Upper Echelon Theory

Organizational outcomes consisting of strategic choices and performance levels are partially determined by the personal background characteristics of its top management(Hambrick & Mason, 1984). Until this theory was formally presented most organization studies explained the major organizational decisions purely on the basis of techno-economic principles. This theory explains that; to the extent top management are allowed discretion in decision making, their organization's actions or strategic choices is the result of interplay between the cognitive and value base of the

top managers and the technical economic job requirements(Hambrick & Mason, 1984). The theory is premised on bounded rationality in complex or strategic decision making situations which provides space for idiosyncratic decisions or decisions influenced by personal perception arising from the interaction of the managers cognitive and value base, and the environmental stimuli. The theory uses observable managerial characteristics as proxy for cognitive and value base of the manager(Hambrick & Mason, 1984).

Upper echelon theory is central to this study as it allows a prediction of the effect of managerial discretion on strategic choices based on managerial characteristics including CEO power. This theory reinforces agency theory in considering the manager characteristics in strategic choices with impact on organization outcomes. The strategic choice in this study is leverage level that achieves the desired financial performance and the manager characteristic supported by this theory and agency theory as an environmental contingency with impact on strategic decisions and outcomes One of the fundamental assumptions in this study and under corporate governance is that managers are utility maximizers and consequently manager discretion is partially controlled by the board of directors to limit opportunistic behavior. On the other hand, manager discretion is essential not only as a motivation(Kanfer, 1990) but also to provide space for positive influence on organizations outcomes(Adams et al., 2005; Liu & Jiraporn, 2010).

2.5 Empirical Literature

2.5.1 Financial Leverage and Firm Financial Performance

A firm’s financial performance ultimately depends on the deployed strategies, the bundle of resources and the timeliness of the actions taken to align the firm with its

external environment (Furrer et al., 2007). The primary source of finance for a firm's resources is equity. Debt may be used as an addition to equity up to an optimal amount but not beyond. At the same time, managers need to save on a debt slack for any urgent financial need since equity requires market timing(R. Huang & Ritter, 2005). The timeliness of actions by management ultimately depends on the availability of economic resources and or the firm's financial flexibility: the ability to pursue investment opportunity in a timely manner, respond to cash flow shocks and issue debt or equity securities without any constraints(J. Graham & Harvey, 2002). Financial flexibility of a firm depends on the firms unused debt capacity: the total debt capacity or optimal debt level less the extent of current debt finance level (DeAngelo, DeAngelo, & Whited, 2011; Denis & McKeon, 2012; Hess & Immenkötter, 2014).

RAMS () analyzed 300 German unlisted Utilities companies over a two year period 2015 and 2016 and observed a significant direct relations between unused debt capacity or debt slack and financial performance. Debt capacity or optimal leverage was defined as EBITDA times an industry determined factor representing rating agencies acceptable debt level. Iqbal et al. (2012), using debt to total assets ratio as proxy for debt capacity, and market to book ration, observed a significant positive relationship indicating optimal leverage has an effect on market valuation of a firm. Similarly, Odalo, Achoki, et al. (2016), using firm size as proxy for debt capacity, observed a significant positive relationship with ROA and ROE.

A number of empirical studies have examined the relationship between Financial leverage and firm financial performance and have obtained conflicting results: while some studies obtain a negative relationship (Martis, 2013; Masavi et al., 2017;

Muhammad et al., 2014; Naz et al., 2016; Omollo et al.; Salamba, 2015; Salim & Yadav, 2012; Schulz, 2017; UDEH et al., 2016; Yapa Abeywardhana, 2016; Yazdanfar & Öhman, 2015; Zeitun & Tian, 2014), others have obtained a positive relationship(Fosu, 2013; Margaritis & Psillaki, 2010; Narang). Some studies have observed non-linear quadratic relationship taking the shape of inverted U(Hess & Immenkötter, 2014; Skopljak & Luo, 2012). The inconclusiveness of these studies is sufficient evidence of the need for further studies. Some studies have examined the effect of intervening variables in this relationship. McConnell and Servaes (1995), examines the effect of growth opportunities on the relationship between financial leverage and firm financial performance: and concludes that for firms with low growth opportunities, the relationship is positive while negative for high growth opportunity firms. The reported conflicting negative and positive association is explained by dynamic tradeoff theory which allows leverage ratio to wander away from the optimal ratio to either above or below the optimal level, resulting in either positive or negative relationship with firm performance or value (Roberts & Leary, 2004). It is also consistent with either agency conflict mitigation through the use of debt or managerial incentives leading to excessive debt levels (J. Graham & Harvey, 2002) or imperfections in capital markets resulting in overreliance on debt finance. Further, McConnell and Servaes (1995), study suggests that additional factors such as debt capacity slack, managerial power, and macro-economic conditions, may clarify the leverage-financial performance relation. Alternatively, a better definition of the leverage variable, which has not been examined to date, may be of essence.

2.5.1.1 Debt Ratio and Financial Performance

As aforementioned Debt Ratio is the ratio of book value of long term-debt and book value of total assets. It’s a measure of the ratio of debt and assets in place. The value

of assets used in this measure is devoid of growth opportunities. Whereas this ratio may be highly reliable in measuring financial risk during growth periods(Barclay et al., 1995; J. Graham & Harvey, 2002; Kigen, 2016), it may not be reliable in measuring return on capital employed in growth industries since it is backward looking and does not consider growth opportunities. Shibanda and Damianus (2015), using 41 non-financial sector companies traded at NSE and OLS regression model, obtained a weak significantly positive relationship between Debt Ratio and ROA. The analytic model neither considered possible time nor firm specific effects. Omollo et al. ()(2018), using 40 non-financial firms at NSE between 2009 and 2015, and RE regression model found a negative and significant effect of short-term, long term and total debt ratios on ROA but no statistically significant effect on ROE. The findings are consistent with dynamic trade-off theory where a firm's debt ratio wanders off the optimum (Dudley & Yin, 2018; Skopljak & Luo, 2012) and the nature of Debt ratio which is backward-looking with sensitivity to assets in place but not growth opportunities. It is however, inconsistent with no-arbitrage-assumption risk-return tradeoff (Fama & French, 1992, 1993; Modigliani & Miller, 1958) where return on assets remain constant regardless of financing source and the stated purpose of debt which is to at-least lever the ROE if not both ROA and ROE(Bethlehem, 1978). This partial inconsistency has been replicated in a number of studies with both negative relationship(Leon, 2013; Martis, 2013; Muhammad et al., 2014; Salamba, 2015; Salim & Yadav, 2012; Schulz, 2017; UDEH et al., 2016; Zeitun & Tian, 2014) and positive relationship(Fosu, 2013; Margaritis & Psillaki, 2010; Masavi et al., 2017; Narang). This study therefore seeks to explore this inconsistency by examining more confounding variables with more specific definition of the variable financial leverage.

2.5.1.2 Debt/Equity Ratio and Financial Performance

Debt/Equity Ratio measures the ratio of total debt to total equity value of total assets including capitalized growth opportunities or net debt divided by market price of equity(Penman, Richardson, & Tuna, 2007). This approach is considered future oriented and a more realistic measure of leverage given that it considers total assets and is based on stock price which is closer to the firm's intrinsic value(Fama & French, 2002; Kayo & Kimura, 2011; Roberts & Leary, 2004; Welch, 2004). Penman et al. (2007), observes a significant negative relationship between Debt/Equity Ratio to price ratio and lagged stock return even after controlling for size, return volatility, and default risk. Financial leverage affect financial performance in two ways: lagged effect by altering equity stock risk and therefore the required rate of return translated to stock price and by influencing investment choices indirectly through business risk(Ozdagli, 2012). Consequently leverage may affect firm financial performance through lagged effect on stock returns involving stock price and through EBIT. A number of studies on the relationship between financial leverage and financial performance use Debt/Equity and have reported a puzzling negative relationship (Abor, 2005; Amidu, 2007; and Odongo, 2014 in Mukras (2015). It's long been accepted that investors act rationally and only accept incremental investment if increased risk entails higher return and not negative return(Rubinstein, 2002). Given the backward and internal leaning nature of Debt/Equity Ratio and the perverse findings, this study seeks to examine the leverage financial performance relationship using Debt Ratio, Debt/Equity Ratio and Interest Coverage Ratio under the same circumstances. Debt finance is characteristically time bound but the benefits accrue over a multi-period sometimes outliving the debt period. Managers use the available information to make rational decisions. Managers have to rationalize between short

term debt and long term debt considering risks and return tradeoff. A better definition of leverage that measures all the dimensions of debt permits better examination of the relationship between leverage and financial performance.

2.5.1.3 Interest Cover and Financial Performance

Whereas Debt/Equity ratio and Debt Ratio measure the risk of financial distress or insolvency using the proportion of capital employed contributed by the shareholder and the creditors, interest coverage examines the sustainability of interest or fixed financial charges from the firms income or cash flows(Bonazzi & Iotti, 2014). This approach to determination of ability of a firm to borrow permits the entity to match its commitments with its net cash flows after making precautionary provisions thus putting emphasis on sustainability of operations(Bonazzi & Iotti, 2014; Greenwald, 2019). The cash-flow approach to leverage makes sufficient provisions for financing of the firms operations to guarantee both operating finance as well as loan servicing (Bonazzi & Iotti, 2014). In a panel study of three Nigerian Pharmaceutical firms over twelve years. Enekwe et al. (2014), reported a positive relationship between interest cover and ROA consistent with risk-return tradeoff(Fama & French, 2003; Sharpe, 1964), while book leverage was negative. In addition to making provisions for operating expenses, interest cover is sensitive to the most signifcant barrier to fiancial access in developing countries like Kenya: interest rate, where the rates are in excess of 10% as opposed to developed countries where it is below 5%(Harvie, Narjoko, & Oum, 2013). In developed countries interest cover is used in addition to bookleverage as early warning for financial distress: bookleverage is active at low interest rates while interest cover bcomes active at high interest rates(Bratton, 2006; Greenwald, 2019; Nash et al., 2003). However in deveolping coutntries, the interest rate is already

high and therefore interest cover may present a more realistic measure of leverage than bookleverage(Enekwe, Agu, and Eziedo, 2014)

2.5.2 CEO Power and Firm Financial Performance

The capability of Management to effect corporate outcomes is dependent on the interaction between manager characteristics and corporate variables. Executives can only impact firm outcomes if they have influence over important firm decisions(Adams et al., 2005). Agency theory posits that, being inherently risk averse, managerial power is negatively correlated to leverage and positively correlated to variability of stock returns arising from a more direct impact of manager characteristics on firm decisions(Adams et al., 2005; Fama & Jensen, 1983). It also leads to a reduction in total stock returns unless optimal compensation that includes performance based incentives is applied by the board of directors.

According to Gormley and Matsa (2016), managers inherently have three preferences: private benefits, costly effort, and risk aversion. Private benefits include value destroying consumption such as perquisites, and empire building which confer no benefits to residual claimants. Costly effort includes enjoyment of quiet life with only minimal effort to maintain employment contract unless incentives are provided. Risk aversion entails taking value destroying actions motivated by career concerns or risk aversion such as taking projects with low risk –low return than would be in the best interest of shareholders, diversification or other value destroying actions to reduce risk, like maintaining low leverage and excessive cash stocks resulting in low stock return and variability of stock return. Therefore agency theory posits a negative relationship between managerial power and both stock return and financial leverage.

L. Bebchuk, Cremers, and Peyer (2010), show that higher CEO Pay Slice associated with powerful CEO is negatively associated with firm value measured using industry adjusted Tobins-Q, accounting profit, and performance sensitivity of CEO turnover. This reinforces the view that higher CEO power is inconsistent with higher corporate financial performance. On the other hand, Tien, Chen, and Chuang (2013) observed that powers from Executive directorship had a positive correlation with ROA, and ROE, but duality and composite power had a negative effect on strategic pay and cumulative pay. Meanwhile, influence due to tenure directly affects annual pay and pay-performance sensitivity in agreement with Choe, Tian, and Yin (2009).

CEO ownership affects firm valuation depending on external governance(E. H. Kim & Lu, 2011). The relationship is inverted U when external governance is weak but otherwise insignificant. High-level CEO ownership results in CEO entrenchment which results in reduction in risk-taking. One affected area is R&D. Where CEO has influence, measured by influence power index, variability of outcomes is high and firm performance measured by ROA, Tobin's Q, and stock returns are significantly more variable. E. H. Kim and Lu (2011), further suggests managerial power may have an indeterminate or a quadratic relationship with firm financial performance.

Managerial power, in some cases, may directly relate to firm financial performance. According toTjosvold, Sun, and Wan (2005), managers who understand that power is not limited but expandable and seek cooperatives goals with subordinates are reinforced through performance improvement. Similarly powerful managers who achieve organization goals are reinforced with more power(J. R. Graham et al., 2019).

According to Daily and Johnson (1997), firm financial performance was found to precede and is affected by CEO power while Bhagat and Bolton (2008) did not obtain

evidence supporting the relationship between corporate governance and stock market performance. While testing managerial power theory, Choe et al. (2009), observed mixed results in the relationship between managerial power and firm financial performance.

According to Kesten (2010), managerial entrenchment may be negatively correlated to firm financial performance during bullish capital market which condition is temporal, but is significant and positively correlated to firm performance during recession. Gümbel (2006) confirms L. A. Bebchuk and Fried (2005) assertion that CEOs inherently have a balance of power against most corporate boards which permits influence over boards and company.

2.5.3 CEO Power and Financial Leverage

According to Gormley and Matsa (2016); Jensen and Meckling (1976), due to career and monetary benefits consideration, managers have aversion to risk than is in the best interest of more diversified shareholders. According to agency theory managers face the same odds as debt holders: as long as the firm is successful, they receive fixed payoffs but in the event of bankruptcy, bear full consequences such as career and income loss. Consequently manager's interest is naturally aligned with debt holders and would avoid risk taking such as risky projects: high risk- high return projects, and leverage. According to L. A. Bebchuk and Fried (2005); Daily and Johnson (1997); Gümbel (2006); Van Essen et al. (2015); managerial power is inconsistent with performance sensitive remuneration and leverage. Agency theory (Jensen & Meckling, 1976), Dynamic trade-off theory (Stiglitz, 1973) and Pecking order theory (Myers & Majluf, 1984) posit that managers prefer the use of riskless debt in capital structure to equity and equity to risky debt. To incentivize managers to

risk taking, remuneration contract that has performance based component is proposes as optimal (Bebchuk & Fried, 2005; Jensen & Meckling, 1976; John & John, 1993).

Jensen (1986), posits that managers may be bonded through debt to payout future free cash flows as a resolution of agency conflict over free cash flows. Whereas Managerial power is posited to have a negative relationship with leverage, managers are faced with multiple disciplinary forces including competitive forces in product, capital and managerial labor markets and therefore, in case disciplinary pressures force additional capital requirement, managers follow the pecking order where external debt comes before external equity (Fama & Jensen, 1983; Myers, 1977; Shleifer & Vishny, 1992), resulting in increasing debt and leverage.

Whereas there are concerns with managerial risk aversion, there exist equal concern that when sufficiently incentivized managers may over-lever the firm resulting in bankruptcy. Consequently a number of measures are also taken to mitigate management risk behavior. According to L. A. Bebchuk and Jackson Jr (2005), defined benefit pension plan for executives, is used by boards to reduce management incentive to over-lever a firm to reduce exposure to bankruptcy. Shilon (2015), observes that Firms universally adopted SOPs as a key element in risk mitigation. Amongst the risks targeted are leverage and variability of stock returns. Brisker and Wang (2017) ascertained that high CEO proportionate fixed income is inversely related to leverage and rapid downwards adjustment of leverage for excessively levered firms and slower upwards adjustment for inadequately levered firms. CEO inside debt ratio of 10% is optimal for optimum market debt ratio for the firm. Gormley and Matsa (2016) observes that when threats from hostile takeover is removed conferring protection, managers take steps to reduce the risk of financial

distress: including reduction in leverage ratio, increase in cash holding, reduction in stock volatility, and acquisition of highly levered profitable firms with substantial inside shareholding. The observation confirms the positive association between profitability and leverage and substantial inside shareholding and leverage supported by agency theory (Shilon, 2015).

2.5.4 Moderating Effect of CEO Power on the relationship between Financial Leverage, and Firm Financial Performance

According to Fama and Jensen (1983), the age old agency conflict inherent in corporations where residual risk bearing is divorced from decision making is solved by a decision system which separates management from control of strategic decisions at all levels of the organization. Modeling corporate management on the decision system, the board of directors exercise control over strategic decisions by approval and monitoring of implementation, while the CEO heads the management team that initiates and implements all strategic decisions. The centrality of the CEO in initiation and implementation of strategic decisions that deliver corporate value cannot be overemphasized (Daily & Johnson, 1997; Hambrick & Mason, 1984). According to Adams et al. (2005); Hambrick and Mason (1984) the CEO require discretionary powers to make many strategic choices, amongst which financial leverage is one, that together impact on the organization outcomes and financial performance. On the other hand, discretionary powers without restraint may occasion suboptimal firm performance due to agency conflict while excessive control stifles motivation and innovation. According to Tjosvold et al. (2005), power per-se is not an issue but how it is used in an organization: when used as expandable in cooperative goals with subordinates it results in superior performance compared to when it's used as limited and a tool for overcoming resistance.

Management monitoring through inside, block, and institutional shareholding is effective in improving firm financial performance only where the corporate environment has less complexity, turbulence and leverage is positively related to firm value. On the other hand, in environments characterized by information asymmetry and low leverage, such monitoring is ineffectual(Amedu, 2016; McConnell & Servaes, 1995). According to Jensen and Meckling (1976), in addition to monitoring, managerial incentives may also serve to align manager goals with stockholders'. One such strategy is pay-performance sensitivity. However this strategy has been associated with extreme leverage, corporate frauds and bankruptcy and is often moderated through executive inside debt like fixed pension benefits(L. A. Bebchuk & Jackson Jr, 2005). Lower monitoring or higher executive power manifested through dispersed shareholding (Margaritis & Psillaki, 2010), entrenched management (Shleifer & Vishny, 1989), managerial inside debt (Brisker & Wang, 2017), and high CEO pay slice(L. Bebchuk et al., 2010) on the other hand are associated with low leverage, larger perquisites, greater discretion in corporate strategy, lower pay-performance sensitivity, and lower accounting profit.

It is therefore apparent that some level of corporate control is required not only to minimize the use of equity finance through increased leverage, but also to reduce value destroying tendencies of management so as to enhance corporate financial performance.

2.5.4.1 Debt Ratio, Financial Performance and CEO Power Contingency

Managers prefer low risk and low profit rather than high risk and high profit(Gormley & Matsa, 2016). Increasing managerial power therefore exposes a firm to low risk and low profit. Corporate debt term-structure is predominantly influenced by transaction

costs where firms with higher information asymmetry borrow short-term and those with less information asymmetry borrow longer term(Barclay & Smith Jr, 1995). Short-term debt has a higher transaction cost but lower risk since it can be repaid or restructured, However, given discretion, managers would choose short-term debt in preference to long-term debt(Zhang & Zhang, 2014). Higher managerial power therefore exposes a firm to more short-term debt but the overall effect is to reduce performance. This may result in low Debt ratio but high total debt/equity ratio with declining ROE.

2.5.4.2 Debt/Equity Ratio, Financial Performance and CEO Power Contingency

Debt/equity ratio examines the proportion of capital that is contributed by creditors. The total debt may influence financial performance through differential between ROCE and cost of capital or through the effect of leverage on agency cost of debt. Managers are generally risk averse and would prefer low D/E ratio to High D/E ratio(Jensen & Meckling, 1976)

2.5.4.2 Interest Coverage, Financial Performance and CEO Power Contingency

The use of long-term debt in the capital structure may increase Debt/Equity ratio and Debt Ratio, but not necessarily interest cover. The impact on interest cover depends on the differential between ROCE and cost of capital(Bethlehem, 1978). Due to higher risk involved, higher CEO Power may result in low long term debt and low debt ratio, though it promises higher return through lower interest costs(Zhang & Zhang, 2014). The suppression can result in positive relationship with ROE.

2.6 Summary of Reviewed Literature and Research Gap

Whereas it is acknowledged management has an impact on firm financial performance and play a role in making strategic decisions affecting a firms outcomes

such as the extent of financial leverage in a firm's capital structure, without any reference to the role played by management or corporate governance structures, empirical and theoretical research have for decades examined the relationship between leverage and financial performance of firms with mixed results and conflicting predictions. Little is known about the effect of CEO Power on the relationship between financial leverage and firm financial performance. This study attempts to fill this gap by empirically examining the moderating effect of CEO power on the relationship between financial leverage, and firm financial performance among listed companies at the NSE. Further, many studies on leverage in developing economies, target specific economic sectors such as manufacturing, banking, nonfinancial firms, sugar manufacturing firms and cement manufacturing firms. This focus results in small samples or long samples and study findings that are distorted by sample size or time respectively. This research study attempted to fill this knowledge gap by undertaking a study of a combined sample of all listed firms at NSE. A summary of the literature reviewed is presented in appendix 6 and the research gap identified.

2.7 Conceptual Framework

Based on the summary of literature and the identified research gap, Figure 2.1 was proposed to present the study conceptual framework.

In this model, the additional external finance, for many firms, is predominantly debt and to a small extent equity finance resulting in increasing financial leverage. Financial Leverage: the independent variable in this study, help lever equity finance, return on equity and mitigate effects of agency conflict and information asymmetry to improve financial performance. The CEO power: the balance of power between

corporate control and discretionary space has effect over the strategic responses to environmental change and therefore affect the outcome of the relationship between financial leverage and firm financial performance. In developing countries and emerging market economies increasing debt finance is predominant for growth of all enterprises. Equity finance is limited to founder financing or only for major expansion projects for large public listed companies. Debt finance resulting in increasing leverage is the single greatest source of new finance to firms (Mishkin Frederic, 2004). The actual amount of debt borrowed by a firm to finance its investment opportunities for improved performance and growth however vary depending on the macro-economic variables (Nyamita, Garbharran, & Dorasamy, 2014), the firm may use different approaches to determine the appropriate level of risk-free debt that it can employ in its capital structure. Whereas many managers use debt ratio, others may use interest coverage ratio and others debt-equity ratio. Other confounding variables including firm size, firm operational efficiency and sales growth to the effect of financial leverage on firm financial performance are controlled in this model.

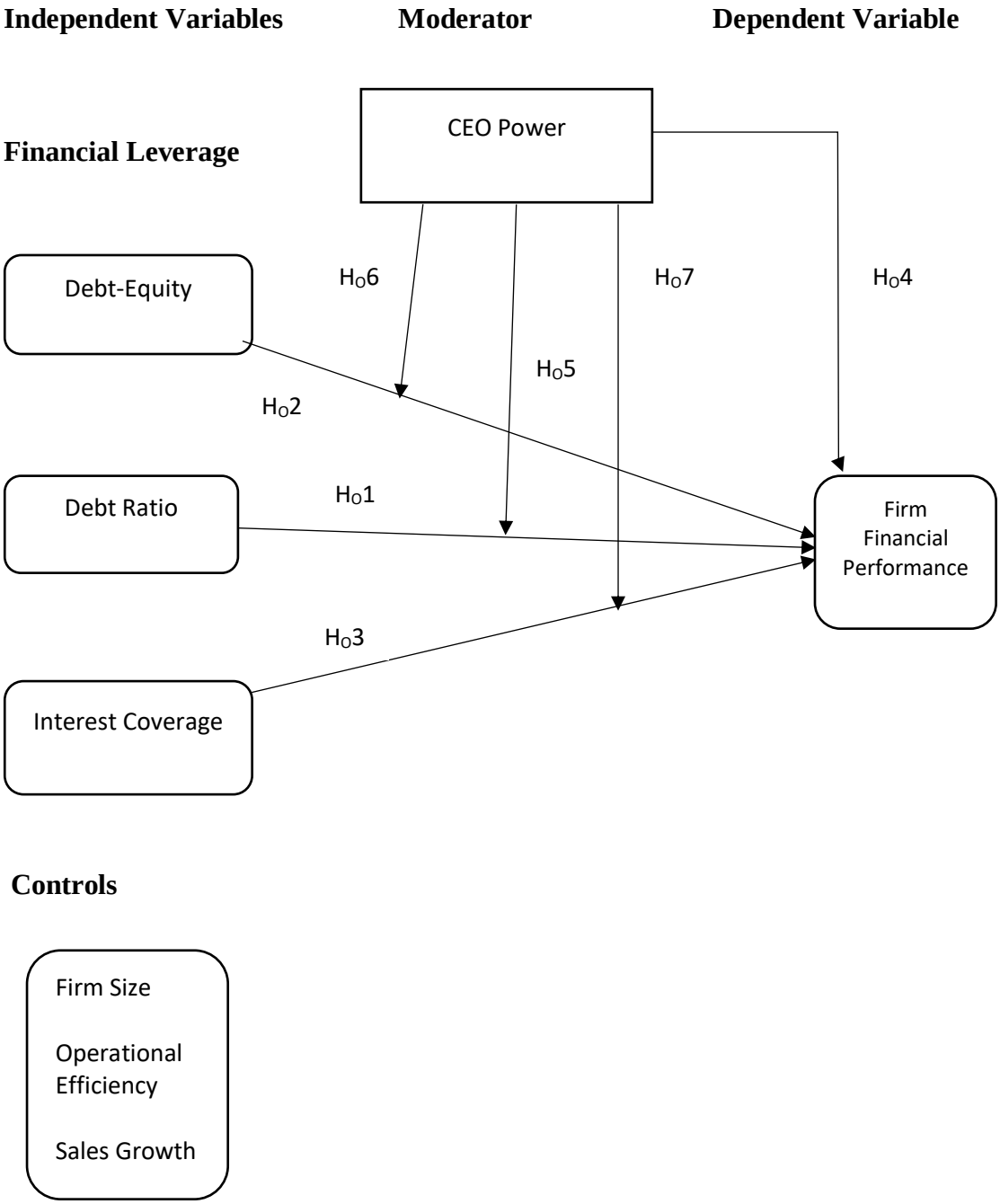

Figure 2.1: Conceptual Framework

Source: Author (2021).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discusses the adopted research strategy. It explains the research philosophy, design, study area, population of study, method of sample selection and sample size, operational definition of variables, data collection method, data analysis and presentation, pre-testing for data models, and ethical consideration. It serves to explain how and why the data in this study was collected and analyzed.

3.1 Research Philosophy

This study was based on the positivist research paradigm. It posits that social phenomenon just like scientific reality, exists independent of the researcher and the way in which the researcher discovers them (S. Kim, 2003). The subject-object dualism is maintained in the search for reality: the ontological process and the epistemological matters are kept apart. The paradigm is guided by the basic assumption of mind-independent reality(Aliyu, Bello, Kasim, & Martin, 2014; Popkewitz, 1980). Aliyu et al. (2014); Wardlow (1989) argues that researchers using this paradigm makes the following intrinsic primary assumptions: the physical world and social world are similar and can be studied in the same way; theory and sets of principles are universal and inferences there from can describe human behavior and social phenomenon across individuals and all settings; subject-object dualism is maintained; operationally defined and distinct variables and theories are applied to formalize knowledge; hypotheses derived from principles of theories are tested through quantification of observations and use of statistical analysis. This philosophy was consistent with the methodology of this study which sought to establish the significance of relationship between financial leverage and firm financial performance

in the context of moderating and confounding variables observed over many cases through hypothesis testing(Ryan, 2006).

3.2 Research Design

This is the overall plan on how the research study is structured and conducted and is guided by the principle that the design should be suited to the research question(Tharenou, Donohue, & Cooper, 2007). This study used explanatory research design. It sought to determine the relationship between Financial Leverage, CEO power and firm financial performance among listed companies in Kenya. In so doing, it sought to explain the association between financial leverage, and firm financial performance if any. Further, it sought to explain the moderating role, if any, of CEO power on the relationship between financial leverage and firm financial performance. Therefore, the resulting suitable design was explanatory design. Under this methodology, the researcher attempted to establish cause-effect relationship between variables without manipulating the explanatory variables but rather through observation of natural occurrences and association(Fosu, 2013; McConnell & Servaes, 1995; Salamba, 2015; Yapa Abeywardhana, 2016).

3.3 Study Area

The study was conducted in Kenya among companies listed at the Nairobi Securities Exchange. The Nairobi Securities Exchange is one of the leading securities Exchange in Africa with over six decades of listing equities and debt securities, established in Kenya in 1954 on the eastern seaboard of the African Continent. It offers trading facilities to local and international investors. By providing an investment platform, it encourages savings and investment as well as providing opportunities for cost effective finance to corporate entities and therefore facilitating capital formation and

economic growth in Kenya and Eastern Africa. Companies listed at this exchange represent the largest public companies in this region setting pace for corporate governance, financial management and reporting and provides a repository of financial reports. As on thirty-first December 2019, it had 61 listed companies spread over various economic sectors excluding one exchange traded fund and one Investment services firm. These are large companies that have been screened and qualified for listing and therefore generally provide investment grade securities to the public. In addition these companies are required to file annual financial statements with at least minimum disclosures which are available to the public.

3.4 Study Population

Population refers to the number of items in a defined class of people, objects, or events. In a population research, it is identified by name: the unit of analysis and further identifying characteristics (O'leary, 2004). In this study, listed Companies at the Nairobi Securities exchange were the unit of analysis, totaling in number to 61 as on thirty-first December 2019 shown in appendix 4. The study was longitudinal covering the ten year period 2010-2019. All listed companies during the study period with complete company year information were to be included. Sectorial differences such as Companies whose debt ratio and or investment choices are regulated by the state or state agency such as the Central Bank like commercial banks and diverse economic sectors were to be accommodated through appropriate fixed effects statistical analysis if necessary. While conscious of the fact that financial institutions' leverage may go beyond the statement of financial position and are subject to regulatory framework the study recognized that like other economic entities, Financial Institutions use on balance sheet Debt finance to leverage Investment on assets and that inadequate equity may precipitate failure in economic downturn(Kalemli-Ozcan,

Sorensen, & Yesiltas, 2012). Further, Gropp and Heider (2010) confirm that banks do not use deposit liabilities to finance balance sheet expansion. According to Kalemli-Ozcan et al. (2012), financial institutions and in particular large institutions, manage their leverage levels just like non-financial institution firms, in response to market forces and shareholder demands and in addition based on internal value at risk maintaining a constant maximal value at risk and not regulatory framework preferred by small and marginal institutions. Flannery and Rangan(2008), Rajan and Zingales(1995) in Kalemli-Ozcan et al. (2012) find that regulation play no role in determination of large banks capital structure. This study therefore considered a combined population of financial and non-financial institutional firms listed at NSE with a statistical analysis model that suitably takes care of the firm level specific characteristics (Sheytanova, 2015), subject to satisfactory results from control tests.

3.4.1 Sample Selection

The total number of companies qualifying for inclusion was 61 as per NSE listing on thirty first December 2019(appendix 4), giving a qualifying sample size of 610 company years. Each firm year for each of the 61 firms quoted at NSE as at thirty first December 2019 were to be included in the study without nonrandom exclusion or attrition(H Greene, 2002). However a company-year with incomplete financial report or adequate information was to be omitted from the analysis (Bonazzi & Iotti, 2014; Mukras, 2015) and any company with more than two firm-years' data missing was to be omitted altogether due to the requirement of highly balanced panel data.

3.5 Data Collection Methods and Instruments

The study used secondary data obtained through data mining of company filings at the Nairobi Securities Exchange. Ten year panel Data was to be collected from 2010 to 2019. Secondary data collection sheet: appendix I attached was to be used to collect data for each financial period from 2010 to 2019. The requisite parameters would then be computed from collected data.

3.6 Data Measurement

The study variables include firm financial performance as dependent variable; Financial Leverage as independent; CEO Power as moderator and finally three covariates: Firm size, Sales Growth and firm operational efficiency.

3.6.1 Firm Financial Performance

Firm financial performance is a dimension of firm performance which associates three first order performance indicators: profitability, market value, and firm growth(Santos & Brito, 2012). A number of studies have used each of the first order measures as follows: market value(Naz et al., 2016; Orlitzky et al., 2003); firm growth(Cabral, 1995; McKelvie & Wiklund, 2010); and profitability(Al-Matari et al., 2014; Tayeh et al., 2015; Tsoutsoura, 2004). While growth measures the success in return generation and implementation of expansion strategy; market value reflects current success in return generation and market capitalization of future growth opportunities. Both measures are therefore complex. Profitability on the other hand is a simple measure of efficiency of the firm and management in return generation. The three measures of firm financial performance at least in part measure the firm's capacity to presently generate return and are therefore highly positively correlated. This study was inclined to use profitability measure to reflect the sensitivity of financial performance to

resource input and managerial effort. This study focused more on managerial and resource utilization efficiency, and debt financing and therefore was inclined to use a measure that focus on the same: ROE, used in prior studies (Leon, 2013; Martis, 2013; Muhammad et al., 2014; Omollo et al.; Yapa Abeywardhana, 2016)

3.6.2 Financial Leverage

It is the use of fixed charge capital to increase investment in assets and return on equity(Abubakar, 2015; Ahmad et al., 2015). It results in increasing risk of default. The total debt may be classified into short term and long term. The classification is significant to understanding the nature of financial risk exposure(DeMarzo et al., 2007; Rauh & Sufi, 2008). However, the overall financial risk position given by total debt to total equity is fundamental to estimating the risk of bankruptcy. The risk of financial distress may depend on the total debt, the debt term structure, or the risk of inability to service debt commitments. Therefore in this study all the three aspects of debt: long-term debt to total assets, total Debt to total equity ratios and interest cover are of interest. All the three measures of leverage: Debt-Equity ratio, debt ratio and interest cover are used. Whereas debt ratio and debt-equity ratio are commonly used in more developed and less developed countries and commonly measure the default risk occasioned by leverage, interest coverage measures the effect of leverage on income flow as well as the risk of default on interest(Ji, 2019). This ratio was considered more relevant to emerging market economies like Kenya where the interest rate is always high; beyond 10%, unlike in developed economies where it was always around 5% and sometimes moved to negative territory.

3.6.2.1 Debt Ratio

Debt ratio may be measured as book value of total debt to total assets, long-term debt to total assets or short-term debt to total assets. The maturity structure of debt is essentially not only a tactical decision but also of great significance during recession as firms with significant proportion of short-term debts may be unable to refinance nor settle the debts on maturity leading to bankruptcy(Rauh & Sufi, 2008; Shleifer & Vishny, 1992). This study used book value of long-term debt to total assets and considered the effect of short term debts through the debt-equity ratio. Studies that have used this variable include:(Cai & Zhang, 2011; DeAngelo et al., 2011; DeAngelo & Roll, 2015; Leon, 2013; Martis, 2013; Narang; Omollo et al.; Rauh & Sufi, 2008; Salim & Yadav, 2012; Skopljak & Luo, 2012; UDEH et al., 2016).

3.6.2.2 Debt-Equity Ratio

Debt-Equity ratio: the ratio of total debt to total equity, measures the risk of loss of control by equity holders. Studies that use this measure compute it as market value of total debt to total market value of equity or book value of total debt to book value of total equity (Fama & French, 2002; Roberts & Leary, 2004; Welch, 2004). This study used book value of total debt to book value of equity. Other studies use both debt ratio and debt equity ratio (Booth et al., 2001; Byoun, 2008; Kayo & Kimura, 2011; Lemmon & Zender, 2010).

3.6.2.3 Interest Coverage

Other studies have used interest coverage ratio (Chen & Zhao, 2006; Dey et al., 2018; Enekwe et al., 2014; Nash et al., 2003). As used in this study, it is measured by EBITDA/Interest cost. The interest cost recognizes all finance charges including those on finance leases and Preference share dividends.

3.6.3 CEO Power

According to Finkelstein (1992), executive-level power is multi-dimensional and therefore a single indicator may be an unreliable measure. Whereas Daily and Johnson (1997) and Finkelstein (1992) specified four sources of executive power, some researchers such as French and Raven(1962) in Amedu (2016) identified five sources: legitimate, reward, coercive, referent, and expert power. However literature also indicate that these sources may all be regrouped into two major sources: formal or structural and informal or personal sources(Amedu, 2016)

Adams et al. (2005); Cheikh and de Gabès (2014) used CEO power index as a measure of CEO power. Adams et al. (2005) observed that where influence power is concentrated on the CEO, the corporation is exposed to earnings volatility arising from bounded rationality. On the other hand, agency theory posits that higher CEO power is associated with deliberate efforts to reduce corporate risks including earnings volatility through diversification. Adams et al. (2005) measured CEO influence power index based on number of job titles; membership to BOD; and relationship to founder. Daily & Johnson,(1997) used executive power dimensions or sources, which include: legitimate power, ownership power, prestige power and knowledge or expert power in line with Finkelstein (1992). Cheikh and de Gabès (2014), constructed CEO power index using legitimate power, and ownership power dimensions which are not only formal but also use objective and publicly available information. This study proposed to measure CEO power using index approach for simplicity and in line with the multi-dimensional aspect proposed by Finkelstein (1992) based on ownership and structural power dimensions which use objective and publicly available information contained in published integrated reports of quoted companies at the NSE.

3.6.3.1 CEO Power Index

This variable measured the ability of the CEO to influence decisions of the BOD and the management team and by extension corporate decisions, based on structural power source (Amedu, 2016; Combs et al., 2007). Some studies measure this variable applying unitary measure as follows: BOD membership and duality (Tien et al., 2013); stock ownership(E. H. Kim & Lu, 2011); structural, expert, ownership and prestige power(Daily & Johnson, 1997); adoption of anti-takeover measures (Gormley & Matsa, 2016). Other studies adopted composite measures of CEO power including Adams et al. (2005) who used CEO Influence Power Index, and Cheikh and de Gabès (2014), who used CEO Power Index. This study adapted Cheikh and de Gabès (2014) composite measure for its simplicity and availability of data. The elements used in the power index construction had previously been used as indicated in the summary table below and were also consistent with the Corporate Governance Code of good practices drawn by CMA in Kenya. The elements were classified into two sources of power: ownership and structural power sources, consistent with Daily and Johnson (1997). This index is considered objective and more refined than existing measures as it considers more indicators of the multi-dimension concept other than CEO dualism.

Table 3.1 CEO Power Elements

	Measure	**Nature**	**Max score**	**Min score**	**source**
1	**Ownership Power**				
	Related to Founder member/ Controlling shareholder (30% or more shareholding)	Dummy	1	0	Adams et al. (2005); Amedu (2016); Cheikh and de Gabès (2014); Daily and Johnson (1997)
	CEO shareholding	Likert	3	0	Daily and Johnson(1997)E. H. Kim and Lu (2011)
2	**Structural Power**				
	≥5% and above holding but ≤ 30%	Dummy	1	0	Van Essen et at. (2015)
	Institutional Holding	Dummy	1	0	Van Essen et at. (2015)
	CEO Tenure	Likert	2	0	Cheiks and de Gabes(2014)J. R. Graham et al. (2019); Van Essen et al (2015)Amedu (2016)
	Independent directors %	Likert	2	0	Graham et al(2019); Van Essen et al (2015)
	Board Size	Likert	2	0	Van Essen et al(2015)
	Only insider in the BOD	Likert	2	0	(Adams et al., 2005; Cheikh & de Gabès, 2014; Daily & Johnson, 1997)
TOTAL			14	**0**	

Source: Researcher, (2021)

3.6.4 Confounding Variables

According to Frank (2000) one cannot reliably interpret the causal effect of regression coefficients if alternative or confounding variables exist. To improve reliability of the interpretation, the analysis controls for the confounding variables or they are measured and included in the regression analysis as covariates. Where either approach is not feasible, the analysis is assessed for robustness to the inclusion of confounding variables. This study identified three confounding variables for which

control was necessary: firm Size, firm operational Efficiency, and Sales growth. The variables had been applied in(Amedu, 2016; Dey et al., 2018)

3.6.4.1 Firm size

Firm size had been observed to show positive correlation with firm financial performance in studies such as (Amedu, 2016; Kioko, 2013; Ndolo, 2015; Odalo, Achoki, et al., 2016). It was measured in a number of studies as natural log of net sales; total assets; and average value of total assets (Ab Wahab & Ramli, 2014; Rajan & Zingales, 1995; Titman & Wessels, 1988). This study adopted natural log of total assets as opposed to sales which is subject to higher volatility.

3.6.2.2 Firm Operational Efficiency

Operational efficiency of a firm had been shown to have a positive impact on financial performance (Baik, Chae, Choi, & Farber, 2013; Ndolo, 2015; Tasi, Keswani, & Bozic, 2019). It was measured as total assets turnover; adopted in this study (Dey et al., 2018; Ndolo, 2015).

3.6.4.3 Sales Growth

Sales growth had also been shown to positively impact on firm financial performance (Dey et al., 2018; Lazăr, 2016; Odalo, Njuguna, & Achoki, 2016).It was measured as ($sales_t$ –$sales_{t-1}$) / $sales_{t-1}$ adopted in this study(Dey et al., 2018).

3.7 Operationalization of Variables

Table 3.2 Operational definition of Study Variables

Variable	Measures	Source
Financial Performance	Return on Equity(ROE)	Odalo, Achoki, et al. (2016);
Debt Ratio	book value of long-term debt to total book value of assets ratio	Kayo and Kimura (2011); Khan (2012); San and Heng (2011); UDEH et al. (2016)
Debt-Equity Ratio	Book value of Total Debt to book value of total Equity	Dey et al. (2018); Kayo and Kimura (2011)
Interest Coverage	EBITDA/Interest Charge	Chen and Zhao (2006); Dey et al. (2018); Enekwe et al. (2014)
CEO Power	CEO Power Index(CPI)	Cheikh and de Gabès (2014)
Sales Growth(SG)	$(Sales_t - sales_{t-1})/(sales_{t-1})$	Dey et al. (2018); Lazăr (2016); Odalo, Njuguna, et al. (2016)
Firm Operational Efficiency(FOE)	$sales_t$ /Total $assets_t$	Baik et al. (2013); Dey et al. (2018); Ndolo (2015)
Firm size(FS)	Natural Log of total $assets_t$	Ab Wahab and Ramli (2014); Odalo, Achoki, et al. (2016); Padrón, Apolinario, Santana, Martel, and Sales (2005); Titman and Wessels (1988)

Source: Researcher, 2021

3.7.1 CEO Power Index

Table 3.3 CEO Power Index

	Measure	**Nature**	**Max score**	**Min score**	**Note**
1	**Ownership Power**				
	Related to founder/ Controlling shareholder	Dummy	1	0	1 if related or shareholding ≥ 30% else 0
	CEO shareholding	Likert	3	0	0 if = 0; 1 if 0 <, <1%, 2 if 1-3%, 3 if >3%,.
T1			**4**	**0**	
2	**Structural Power**				
	≥5% but <30% shareholding	Dummy	1	0	1 if <5%; 0 if ≥ 5% but < 30%
	Institutional Holding	Dummy	1	0	0 if institutional holder exist, else 1
	CEO Tenure	Likert	2	0	If <3/first term 0, if>3 but <6/ second term 1, if>6/ more than second term 2
	Independent directors %	Likert	2	0	2 if < 1/3, 1 if = 1/3, 0 if > 1/3
	Board Size	Likert	2	0	0 if <6, 1 if 6<x<10, 2 if >10
	Only insider in the Board	Likert	2	0	0 if not director; 1 if 1 of two exec member on board, 2 if the only exec in Board
T2			**10**	**0**	
T1+T2	**Total**		**14**	**0**	

Source: Researcher, 2021

3.8 Data Analysis and Presentation

Data analysis involve documentation, description, analysis and presentation of field data in an interpretable and intelligible form, and in a systematic way with due regard to study objectives, to facilitate identification of data characteristics, relationships, trends, and structures. The identified structures, trends and relationships in turn permit the researcher to identify the study contribution to knowledge, practice and policy. Data was to be analyzed using descriptive statistics tools such as mean, range,

variance, correlation, kurtosis, and skewness so as to obtain a clear understanding of the natural characteristics of the independent, intervening and dependent variables and inferential statistics to test the hypothesized cause-effect relationships using regression and analysis of variance models.

3.8.1 Model Specification

In this study cross-sectional time series data is used. The nature of panel data is cluster time series. The relevant regression models are Pooled, Random or Fixed Effects models. The respective general analytic models follow:

3.8.1.1 Pooled Effects Model

$$Yit = \beta_0 + \beta_1 X_1 it + \beta_2 X_2 it + \ldots + \beta_k X_k it + \varepsilon it \ldots\ldots\ldots\ldots..PE$$

3.8.1.2 Random Effects Model

$$Yit = \mu + \beta_1 X_1 it + \beta_2 X_2 it + \ldots + \beta_k X_k it + \mu_{i\,t} \ldots\ldots\ldots\ldots\ldots RE$$

3.8.1.3 Fixed Effects Model

$$Yit = \alpha j + \beta_1 X_1 it + \beta_2 X_2 it + \ldots + \beta_k X_k it + \varepsilon_{i\,t} \ldots\ldots\ldots\ldots\ldots FE$$

3.8.2 Classical OLS and PE Models

Individual entities behave in the same way where there is homoscedasticity: no individual effects (no Cross-sectional or time specific effects and no auto-correlation). These assumptions work very well in cross-sectional random sampling with large samples or static analysis under ceteris paribus assumption. Therefore pooled regression model is the same as OLS Model. According to Park (2011) the basic assumptions for OLS and Pooled model include:

1. The dependent variable (y_t) is a linear combination of independent variables X_{it}

$$Y_t = \beta_0 + \beta_i X_{it} + \varepsilon_t$$

2. Independent variables are not stochastic but fixed in repeated samples without measurement errors.
3. ε_t is independent of all X, independently and identically normally distributed with mean 0, and var((ε_t) =σ^2
4. For each t, the expected value of error ε_t conditional on all the explanatory variables X for all time periods is zero:

$$E(\varepsilon_t/X) = 0 \quad t= 1,2,3,\ldots T$$

ε_t is uncorrelated with each explanatory variable at every time period X_{it}:

$$X_{it}: i= 1,2,3 \ldots; t =1, 2, 3\ldots..$$

5. There is no perfect collinearity between the explanatory variables. There is no multi-collinearity: where X is the factor matrix with K columns and N = n rows;

Rank X = Rank XX' = K

The matrix is non-singular and has determinant and inverse. No row or column is a linear multiple of another.

6. Homoskedasticity: $E(\varepsilon^2 it/X) = var(\varepsilon it/X) = \sigma^2 = var(\varepsilon it)$ for all t=1, 2, 3…T
7. No auto-correlation (Cross sectional or time series):

$$Cov(\varepsilon it, \varepsilon js/X) = E(\varepsilon it, \varepsilon js/X) = 0; \qquad i \neq j;\ t \neq s$$

3.8.3 Time series and Regression Model

Inferential statistics are only good if the underlying assumptions are valid. Whereas classical regression model is well designed to deal with cross-sectional data where the error term (Ɛit) can sufficiently be independent of the explanatory variables (X_{it}), panel data presents a challenge due to inherent endogeneity, Heteroskedasticity, and autocorrelation. Consequently OLS and PE models cannot efficiently support panel data regression statistical inference (Kennedy, 2003; Sheytanova, 2015).

3.8.3.1 Endogeneity

3.8.3.1.1 FE Model

The basic assumption of the FE model is that the error term relating to entity has a correlation to the predictor variable arising from the unique entity characteristics which may bias the predictor or the outcome variable(Torres-Reyna, 2007). The model provides control for the unique entity characteristics by removing the effect of time invariant attributes from the regressors so as to effectively measure the effect of the regressors. The regressor coefficients are not biased due to omitted time invariant characteristics. It further assumes the time invariant entity characteristics in a panel to be unrelated otherwise pooled effect model would fit the panel data better(Torres-Reyna, 2007). A critical weakness of PE and OLS is the inability to handle endogeneity, Heteroskedasticity, and autocorrelation where they exist. Unlike PE and OLS, the FE model assumes a constant **($\boldsymbol{\alpha i \neq 0}$)** for each cluster/individual/entity time series and not $\boldsymbol{\beta_0}$ for the entire panel. It handles **Heteroskedasticity and endogeneity** in a unique way compared to Pooled Effects and OLS other conditions remaining the same. The conditions for the model's efficiency include:

1. Conditions 1, 2, 3, 5 and 7 in 3.8.2 above need to be satisfied.
4. Exogeneity: $E(Ɛit/Xi,\boldsymbol{\alpha i}) = 0$; but $E(\alpha i/Xi) = E(\alpha i) = 0$ not a requirement.

6. Homoscedasticity: E ($Ɛ^2$it/Xi, **αi**) =σ^2_μ Required within a cluster (i), not pooled.

This model deals appropriately with heteroscedasticity and endogeneity arising from individuals/clusters/entities(Sheytanova, 2015).

3.8.3.1.2 RE Model

The entity/cluster/individual effect (**αi**) is assumed to be a random variable (μit) with mean (μ) and variance (σ^2_μ) i.e [(**αi**) = (μit)]. The residuals in the model are paraphrased as in each cluster: μit = (**αi- μ +Ɛit).** Substituting **αi** in the FE model transforms it to the RE model with constant intercept but error term (μit), with the specified characteristics. E (μit) = **μ, Variance** (σ^2_μ).

$$Yit = \alpha i + \beta_1 X_1 it + \beta_2 X_2 it + \ldots + \beta_k X_k it + Ɛ_{it} \ldots\ldots\ldots\ldots\ldots FE$$

$$Yit = [\mu it + \mathbf{\mu - Ɛit}] + \beta_1 X_1 it + \beta_2 X_2 it + \ldots + \beta_k X_k it + Ɛ_{it} \ldots FE$$

$$Yit = \mu + \beta_1 X_1 it + \beta_2 X_2 it + \ldots + \beta_k X_k it + \mu_{it} \ldots\ldots\ldots\ldots\ldots RE$$

The model efficiency conditions include:

1. The conditions 1, 2, 3 5, and 7 are the same as in PE and FE Model

4. Exogeneity: E (μit/Xi, **αi**) = 0; E(**αi-μ/Xi) = 0 ; cov (**μit, **Xit) = cov** [(**αi-μ +Ɛit), Xit]**

$$Cov (\alpha i, Xit) + cov (Ɛit, Xit) = 0$$

6. Homoscedasticity: E(μ^2it/Xi, αi) = σ^2_u ; E(α^2i/Xi, αi) = σ^2_α

7. Auto-correlation. The condition for auto correlation is not met in this model.

$$Cov[\mu it, \mu js] = \sigma^2_{\alpha} \neq 0$$

This model cannot deal appropriately with endogeneity arising from individuals/clusters. In case of such endogeneity FE or PE model is used(Sheytanova, 2015)

3.9 Autocorrelation

Panel data or cross-sectional time series data inherently exhibit serial correlation and cross-sectional dependence(Torres-Reyna, 2007). The existence of autocorrelation: serial or cross-sectional dependence, in a regression model arising from time dependency of economic data inertia or shocks and disturbances, results in biased standard error and therefore inefficient regression estimates.

3.9.1 Cross-sectional dependence

Cross-sectional is a correlation between clusters due to common environmental interference or unobserved external component which become part of the error term(De Hoyos & Sarafidis, 2006). It distorts the standard error of the model, consequently results in estimates that are less than efficient. The degree of distortion is conditional on the magnitude and nature of the dependence. The nature of dependence is affected by the source of dependence and type of panel data. Source of dependence may be an unobserved common variable related to the regressors or it may not be related to the regressors. In the former case, instrumental variables (IV): variable related to regressors but not the unobserved factor, are explored, while in the latter case the standard error is corrected and the model parameters retained. Cross-sectional Dependence (CD) is more severe in dynamic and long than static and short panel data. It is imperative that models are tested ex-post to determine the extent of distortion for appropriate action(De Hoyos & Sarafidis, 2006)

3.9.1.1 Cross-sectional dependence Hypothesis

Given a standard panel-data regression model for fixed effects or random effects in the form:

$$\text{Model:} \qquad Y_{it} = \alpha_i + \beta X_{it} + \mu_{it},$$

α_i and μ_{it}, residuals, the former time invariant and individual specific, while the later assumed independent and identically distributed over time periods(t) and cross-sectional(i)

$$H_0: \text{cor}\,(\mu_{it,}\, \mu_{jt}) = \acute{p}_{ij} = \acute{p}_{ji} = 0 \qquad \text{for } i \neq j$$

$$H_1: \text{cor}\,(\mu_{it,}\, \mu_{jt}) = \acute{p}_{ij} = \acute{p}_{ji} \neq 0 \qquad \text{for } i \neq j$$

$\acute{p}_{ij}$ is the product moment correlation coefficient of the disturbances given by:

$$\acute{p}_{ij} = \acute{p}_{ji} = \{\Sigma\, \mu_{it}\mu_{jt}\} / \{(\Sigma\mu^2_{it})^{½}(\Sigma\mu^2_{jt}])^{½}\}$$

$$t=1 \qquad t=1 \qquad t=1$$

De Hoyos and Sarafidis (2006)

3.9.1.2 Tests of Cross-sectional Dependence

3.9.1.2.1 Pesaran(2004) CD statistic

This statistic is based on Breusch and Pagan (1980) Lagrange Multiplier (LM) statistic but unlike LM statistic, this test is efficient for large N: T<N>10. The LM statistic is designed for finite N as T→α and is size distorted for N>T. It is not centered for finite T and the distortion is worsened when T→α, and N >T(De Hoyos & Sarafidis, 2006; Pesaran, 2015)

$$\acute{p}_{ij} = \acute{p}_{ji} = \{\Sigma\, \mu_{it}\mu_{jt}\} / \{(\Sigma\mu^2_{it})^{½}(\Sigma\mu^2_{jt}])^{½}\}$$

$$t=1 \qquad t=1 \qquad t=1$$

$$\text{Pesaran (2004) CD statistic} = (2T/(N-1).N)^{1/2}\{\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\acute{p}_{ij}\}$$

The Peseran (2004) Statistic has a mean at exactly zero for fixed T and N under a wide range of panel data models including nonstationary, dynamic heterogeneous, homogeneous models.

Decision Criterion

Null hypothesis rejected if $CD \neq 0, Pr \leq 0.05$ (De Hoyos & Sarafidis, 2006)

3.9.1.2.2 FriedMan's Test

It is a non-parametric test based on spearman's rank correlation coefficient. r_{i1}……..r_{iT}, are the ranks of cross-sectional residuals in a model (μ_{iT}); T+1/2 is average rank(De Hoyos & Sarafidis, 2006). Spearman's rank correlation coefficient is given by:

$$r_{ij} = r_{ji} = \{\sum_{t=1}^{T}[r_{it} - (T+1/2)][r_{jt} - (T+1/2)]\} / \{\sum_{t=1}^{T}[r_{it} - (T+1/2)]^2\}$$

Friedman's statistic is given by: $R_{ave} = [2/(N)(N-1)] * \sum_{i=1}^{N-1}\sum_{j=i+1}^{N}(\dot{r}_{ij})$

Null hypothesis rejected if R_{ave} > critical statistic.

3.9.1.2.3 Frees (1995, 2004) Test

Both Peseran (2004) CD and Friedman's statistic Rave are based on the summation of correlation coefficient of paired residuals and not squared correlation coefficients which imply that both may miss-out cross-sectional dependence of the panel if the

correlation coefficients alternate between positive and negative values. Therefore a confirmatory test would be of essence.

The test is based on the sum of the squared rank correlation coefficients and is given by

$$R^2_{ave} = [2/(N)(N-1)] * \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} (\dot{r}_{ij})$$

Null hypothesis is rejected if $R^2_{ave} > (T-1)^{-1} + Q_q/N$(De Hoyos & Sarafidis, 2006)

3.9.2 Stationarity

A stochastic process is described as stationary or integrated of order zero [I(0)] if its Statistical properties: mean and variance, are time invariant(Grandell, 2015). This condition holds if the time series has a constant mean (μ), and Covariance stationary: a defined variance dependent only on the time interval.

(i) $Var(X_t) < \alpha$; for all $t \in \mathbb{Z}$

(ii) $\mu_X(t) = \mu$; for all $t \in \mathbb{Z}$

(iii) $\gamma_X(r,s) = \gamma_X(r+h, s+h)$ (Grandell, 2015)

Stationarity simplifies statistical inference and permits the application of standard statistical inference tools to panel data permitting assumption of convergence, applicability of Central limit theorem and the law of large numbers. It therefore permits assumption of stability for regression beta (β_j). Regression model using time-series data may only apply standard inference tools if none of the regressor and dependent variable data are non-stationary; any regression with I(1) variable is potentially spurious(I. E. Wooldridge; J. M. Wooldridge, 2010). Stationarity imposes weakly dependence condition on the stochastic process in addition to linearity:

1. $Y_t = \beta_0 + \beta_i X_{it} + \varepsilon_t \quad t= 1, 2, 3\ldots; j = 1, 2, 3, \ldots$
2. $\{(X_t, Y_t) : t=1, 2, 3, \ldots\}$ are weakly dependent (J. M. Wooldridge, 2010)

3.9.2.1 Stationarity Hypothesis

The essence of covariance stationarity or weakly dependence stochastic process is that the correlation $corr(X_t, X_{t+h}) \rightarrow 0$, as $h \rightarrow \alpha$. Such a covariance stationary sequence or stochastic process is described as asymptotically uncorrelated and the correlation coefficient converges to zero as $h \rightarrow \alpha$. This condition is central to time series which cannot apply random variable selection used in cross-sectional analysis as it permits application of the law of large numbers and central limit theorem notwithstanding the limitation. Stationary test entails determination whether or not a sample of time series data can be considered stationary or contains a unit root or not. That is whether a given stochastic process exhibits integrated process of order one I(1) ie non stationary or integrated process of order zero I(0) ie stationary

The null and alternative hypothesis often applied as used in Levin, Lin, and Chu (2002) are:

H_0: each cluster time series in the panel is nonstationary

H_1: all clusters time series in the panel are stationary

The test uses the "Dickey-Fuller" (D-F) Distribution rather than the normal t-distribution. The most general form of the D-F Test is of the form

$$\partial Y_{it} = \mu + \gamma Y_{t-1} + \beta t + \varepsilon_t$$

Alternatively Augmented Dickey-Fuller(ADF) Test can be applied where white noise is not applicable leading to the baseline general model as:

$$\partial Y_{it} = \mu + \gamma Y_{t-1} + v_1 \partial Y_{t-1} + v_2 \partial Y_{t-2} + \ldots + \beta t + \varepsilon_t$$

This model requires specification of lag order (p), being autoregressive model (AR (P)).

H_0: $\gamma = 0$, $\beta = 0$; Unit root with drift (deterministic trend).

H_1: $\gamma < 0$: stationary

H_0: is rejected if $\gamma \neq 0$ or $\beta \neq 0$ based on D-F t and F distribution and at 0.05 or 0.1 significance.

3.9.2.2 Unit Root Tests

This is a convenient way of testing stationarity of a stochastic process. Each individual stochastic process within a panel data or the entire panel may be subject to stationarity test. Panel data is a convenient way of avoiding the difficulty in confirming if a stochastic process is autoregressive or not due to limited size of time series data. Moreover, the power of panel based unit root test is much greater in case of moderate size panels compared to performing unit root test for each individual series in a panel(Levin et al., 2002). A number of programed tests considered available including Levin-Lin-Chu(2002) test; Harris-Tzavalis (1999); Im-Pesaran-Shin (2003); Hadri Test (2000) and Breitung (2000) tests excluding individual time series based tests.

3.10 Model Selection

The basic regression models were specified in table 3.1 below for each hypothesis and the decision tools applicable. The models were based on statistical diagram 3.1 below adapted from Hayes (2017). A systematic procedure was to be adopted for selection

of appropriate linear regression model between PE, FE and RE models applicable to the field data.

When using time series data, it was considered highly possible that differences across entities may have an effect on the dependent variable not related to the effect of the independent variable or on the independent variable resulting in joint effect on the dependent variable. Consequently when an OLS regression model is applied it was considered that there exist unexplained effects on the dependent variable occasioning distortion. This invalidates the critical assumptions of exogeneity of regressors for OLS.

$$E(\varepsilon it/X) = 0 \text{ or } Cor(\varepsilon it, X) = 0$$

Panel data may be analyzed using pooled, random or fixed effects models. The pooled effects model is similar to OLS and is only efficient when all conditions for OLS are satisfied which are unlikely under panel data. Random effects model is only efficient when endogeneity is related to the regressors, while fixed effects model deals with endogeneity related to the entities through clusters and therefore is efficient in both cases.

3.10.1 Fixed and Random Effects Model selection.

The Hausman test seeks to find whether or not the unique entity error term is correlated to the explanatory variable. If it is, then, fixed effects model is efficient, else we use Random effects model. This is performed using χ^2 test of difference in coefficients between the fixed effects model and random effects model, setting the fixed effects model as the null hypothesis(Bartels, 2008).

Null Hypothesis: There is no significant correlation between the error term and the regressors in the panel data regression model. [cor(αi, Xit) = 0]

Alternative Hypothesis: the correlation between the error term and the regressors is statistically significant [cor(αit, Xit) $\neq$ 0]

Null hypothesis is rejected if P(χ^2)< 0.05 and Fixed effects model is used and vice versa(Torres-Reyna, 2007).

3.10.2 Pooled Effects and fixed effects Selection: F-Test

FE model is better placed to handle heterogeneity arising from individual specific time invariant variables.

The hypotheses therefore are:

H_0: $\alpha_1 = \alpha_2 = \alpha_3 \ldots = \alpha_k = 0$

H_1: at least one $\alpha i \neq 0$

A Fixed effect model estimate is computed and tested for goodness of fit based on F-Value against Pooled effect model.

3.10.3 Pooled Effects and Random Effects: Breusch-Pagan Lagrange Multiplier Test

Random effects model is better able to handle heterogeneity arising from random variables either time or individual specific(Park, 2011). The Breusch-Pagan Lagrange multiplier computes (LM): which is, computed ($\sigma^2_{\mu)}$. given the variable μ_{it} = (**αi-μ** +εit): with mean (μ) and $\sigma = \sigma_\mu$ and

That LM$\mu \sim \chi^2$ (1)

H_0: $\sigma_\mu = 0$: H_0 is rejected at $p\chi^2$ (1) >.05 and H1 accepted.

$H_{1:}$ $\sigma_\mu \neq 0$:

3.11 Statistical Diagram

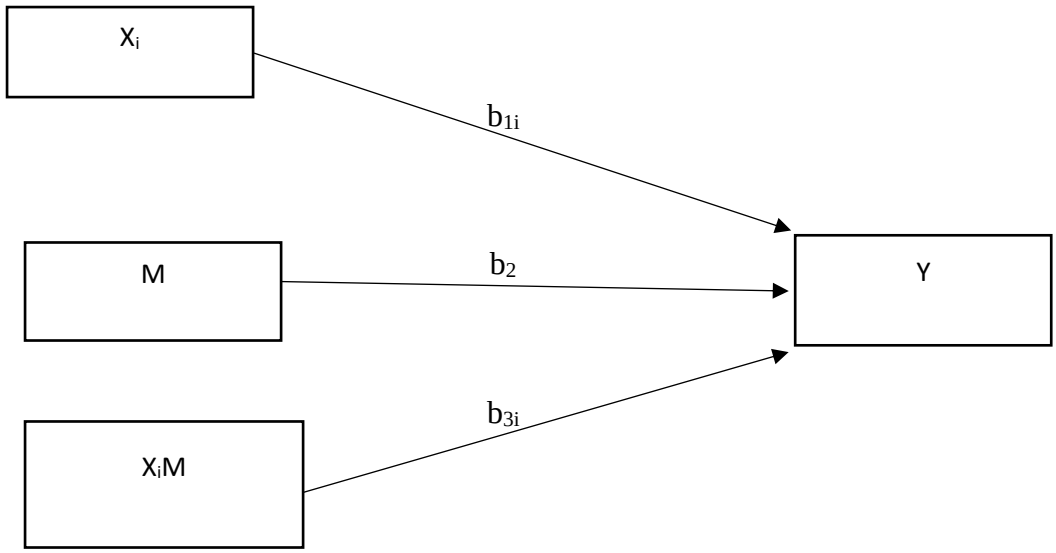

Figure 3.1 Statistical Diagram

Source: Adopted from Hayes (2017) Model1

X_1= Book Leverage

X_2 = Market Leverage

X_3 = Interest Coverage

M = CEO Power

Y = Firm Financial Performance

FOE = Operational Efficiency

FS = Firm Size

SG = Sales Growth

3.12 Hypothesis Tests

3.12.1 Direct Effects

The general analytic models that were proposed to be used in testing Hypotheses 1 to 3 and for testing sectorial differences were as follows:

H_{01}: Debt ratio has no significant effect on firm financial performance

H_{02}: Debt/Equity ratio has no significant effect on firm financial performance

H_{03}: Interest coverage ratio has no significant effect on firm financial performance

Model 1

Determine the effect of control variables on the dependent variable.

$$Y = \alpha_i + \beta_1 FOEit + \beta_2 FSit + \beta_3 SGit + \varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Model 2

$$Y = \alpha_i + C + \beta_1 X_1 it + \beta_2 X_2 it + \beta_3 X_3 it + \varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The decision criteria are: R^2, F, β_1, β_2, β_3, t and $p<0.05$;

Model 3

H_{04}: CEO power has no significant effect on firm financial performance

$$Y = \alpha_i + C + \beta_1 X_1 it + \beta_2 X_2 it + \beta_3 X_3 it + \beta_4 Mit + \varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

The decision criteria is R^2, β_4, t and $p<0.05$

3.12.2 Conditional Effects

This occurs where a variable influences the dependent variable through its interaction with a third variable: the independent variable. Alternatively, the variable is said to moderate the effect of the independent variable on the dependent variable (Aiken, West, & Reno, 1991; Edwards & Lambert, 2007; Jaccard & Turrisi, 2003). The

moderator is said to specify the conditions under which the regressor variable affects the outcome variable. The conditional effect is assessed using the interaction variable coefficient in a hierarchical regression model obtained by multiplying the moderator and the independent variable after centering. The moderator plays a contingency role in the relationship between the regressor variable and the regressand(Aguinis et al., 2017; Preacher, Rucker, & Hayes, 2007).

The conditions for moderation are that: the regressor variable precedes the regressand; there exists an association between both the conditional and the regressor on one hand and the regressand variable on the other hand; and finally, there exists no relationship between the contigency and the regressor variable(Namazi & Namazi, 2016). The decision criteria seek to determine whether, the interaction variable is significant in predicting the dependent variable. Moderation is said to occur if the coefficient of the interaction term is significant and the interaction term impacts the explanatory power of the model through change in R^2 by its introduction into the model. Full moderation occurs if only the interaction term β is significant(Hayes, 2017).

In this study the test models were also to be used in testing sample sectorial differences. The hypotheses and test models were as follows:

Model 4a

$H_{05a:}$ CEO Power has no significant indirect effect on the relationship between debt ratio and firm financial performance

$Y = \alpha_i + C + \beta_1 X_1it + \beta_2 X_2it + \beta_3 X_3it + \beta_4 Mit + \beta_5 X_1itMit + \mathcal{E}it$…………………..…(4a)

Decision criteria: $\beta_5 \neq 0$; t, $p \leq 0.05$; change in R^2 Moderation occurs. [R^2; F-statistic] are not necessary; Full moderation occurs if only β_5 is significant

Model 4b.

H_{05b}: CEO Power has no significant indirect effect on the relationship between debt-equity ratio and firm financial performance.

$$Y = \alpha_i + C + \beta_1 X_1 it + \beta_2 X_2 it + \beta_3 X_3 it + \beta_4 Mit + \beta_5 X_1 itMit + \beta_6 X_2 itMit + \varepsilon it \ldots\ldots\ldots (4b)$$

Decision Criteria: $\beta_6 \neq 0$; t, $p \leq 0.05$; change in R^2 moderation occurs, [R^2; F-statistic] are not necessary; Full moderation occurs if only β_6 is significant.

Model 4c.

H_{05c}: CEO power has no significant indirect effect on the relationship between interest coverage and firm financial performance

$$Y = \alpha_i + C + \beta_1 X_1 it + \beta_2 X_2 it + \beta_3 X_3 it + \beta_4 Mit + \beta_5 X_1 itMit + \beta_6 X_2 itMit + \beta_7 X_3 itMit + \varepsilon it \ldots\ldots (4c)$$

The decision criteria: $\beta_7 \neq 0$; t, $p \leq 0.05$; change in R^2, moderation occurs; [R^2; F-statistic] are not necessary; Full moderation occurs if only β_7 is significant.

The significance of β_{2i} is not necessary(Carte & Russell, 2003). Change in R^2 indicates the strength of indirect effect(Aiken et al., 1991; Fairchild & McQuillin, 2010). The moderation effect was proposed to be presented graphically using Aiken et al. (1991) method. This permits comparison of the significance of the relationship between dependent and independent variable based on the focal values of the conditional effect or the significant range of values of the conditional effect variable(Borau, El Akremi, Elgaaied-Gambier, Hamdi-Kidar, & Ranchoux, 2015). This procedure is part of PROCESS macros(Hayes, 2012).

3.13 Diagnostics:

3.13.1 Normality-test

Linear regression analysis requires all the variables to be multivariate normal. This was proposed to be tested through visual inspection of a histogram and a fitted normal curve (shakipiro/qq-plot). It can also be checked through goodness of fit test: Jarque-Bera(JB)-test. JB statistic is χ^2 distributed with 2 degrees of freedom. This test is based on skewness(S) and kurtosis (K) of the variable distribution theoretically assumed to be 0 and 3 respectively for normal distribution. The null hypothesis is rejected at level α if $JB \geq \chi^2_{(1-\alpha,\ 2)}$ (Thadewald & Büning, 2007). The JB statistic is calculated using the formulae:

$$JB = (n/6).\{s^2+(k-3)^2/4\}$$

S = skewness $=\mu_3/(\mu_2)^{3/2}$, K= kurtosis $= \mu_4/(\mu_2)^2$

$$\mu_j = (1/n).\sum_{i=1}^{i=n} (x_i-\dot{x})^j \quad : j= 2, 3, 4$$; the theoretical 2, 3, and 4^{th} central moments about mean.

3.13.2 Multicollinearity

The independent variables in a multiple regression model should not be too correlated otherwise the separate effect of each IV on DV will not be determinable. Where IVs are highly correlated it is possible the IVs measure the same phenomenon and ought to be combined to one variable. To test multicollinearity, tolerance statistics: variation in the variable not explained by other predictor variables or variance inflation factor

(VIF) was to be determined. Tolerance statistic ranges from 0 to 1. Collinearity is deemed to exist if tolerance statistic is <0.5 hence an IV is suitable if its tolerance is ($0.5 \leq$ tolerance ≤ 1) or $1 \leq$ VIF ≤ 10 (Muijs, 2004).

3.13.3 Linear Relationship Diagnostics

Regression model imposes a linear relationship on variables. Linear relationship diagnostics tests the suitability of linear regression model for predicting the DV. The model is considered suitable only if at most, 10% of the sample are outliers outside 3standard deviations from prediction(Muijs, 2004). Where more than 10% of the samples are outliers linear regression model is considered unsuitable fit for the data. Case wise diagnostics of residuals for outliers outside three standard deviations will be performed. Linear relationship will be assumed to exist if less than 10% of the sample are outliers(Ott & Longnecker, 2015).

3.13.4. Auto-Correlation

The existence of cross-sectional and serial correlation will be tested.

3.13.4.1 Cross-sectional Dependence

Cross-sectional dependence will be tested using Peseran(2004) statistic since it is a parametric test and the most suitable in instances where T is finite and N>T, as in this case. A further confirmatory test will be performed using Free's(1995, 2005) test to accommodate Peseran(2004) statistic's inability to detect cross-sectional dependence where correlation coefficients of paired residuals alternate between positive and negative values.

3.13.4.2 Stationarity Tests

Levin-Lin-Chu Test based on Augmented Dickey-Fuller was to be used to test the panel data for Unit root with t and F statistics at 0.05 significance. This test was chosen because its efficiency when N lies between 10 and 250 and T between 5 and 250 which fits well with the study data panel of N=61 and T=10. However the results were to be counter verified by Im Pesaran and Shin Test which is much simpler.

3.13.5 Control Test for difference in Leverage between Financial and Non-Financial Sector Firms

The study proposed to examine a sample of all listed firms at the NSE including both financial and non-financial sector firms assuming homogeneity or time-invariant heterogeneity. To test the validity of this assumption, three tests were carried out: regression model suitability, similarity of Regression Coefficients and difference in regression coefficients. The two sample sets would qualify for homogeneity if both are suited for the same regression model analysis, have similar regression coefficients for all regressors, and the difference between similar regression coefficients are statistically insignificant.

3.14 Ethical Considerations

This paragraph presents a disclosure of compliance with ethical requirements (Tarus, Komen, and Tenai, 2019). The researcher was required to obtain letter of introduction from Post Graduate School of Business and Economics, Moi University to National Commission for Science, Technology and Innovation (NACOSTI), for purposes of requesting for permission to conduct scientific study in Kenya as required by law. Once permitted, the researcher was to proceed to obtain permission from NSE to collect and apply the requisite data for the declared study purpose. The researcher

complied with all the requirements as presented in appendix 13 and 14. The report on the study would be available to NSE upon request. Further, the researcher ensured that any intellectual property necessary during this process is used within the law and duly recognized and acknowledged.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

This chapter presents summary of sample characteristics, data analysis, interpretation and discussion of findings

4.1 Descriptive Statistics

This study, having determined that one exchange traded Fund (New Gold ETF) and one Investment Services Company (NSE) would be excluded, proposed to examine 61 out of the 63 companies listed at NSE on thirty first December 2019 presented in appendix 4. However, due to diverse reasons, 23 companies shown in appendix 5 were excluded from the study due to non-availability of financial reports for at least 8 years. The resulting study panel consisted of 38 companies. The reasons for non-availability of financial reports range from company initially listing more than two years after 2010, or being suspended from the exchange two years before 2019, or simply non publication of financial reports for a variety of reasons. The decision to use a ten year panel was motivated by the need to maximize the sample size, however, it also exposed the study to sample dynamism ultimately resulting in the need to use unbalanced panel data. The inclusion rate for this study therefore stood at 62%(38/61) which is considered satisfactory(Muijs, 2004; O'leary, 2004).

4.1.1 Study Variables Distribution Statistics Summary

The study variables were measured yearly for each company under study for a period of ten years from 2010 to 2019. The summary distributions Statistics of the variables were as presented in Table 4.1 below.

Table 4.1: Study Variable Distribution Statistics

stats	INTCOVER	DEBTRA~O	DERATIO	ROE	SALESG~H	OPEFF	FIRMSIZ	CEOPOW
Mean	416435.4	11.91439	288.4953	10.64085	10.67688	.599979	17.38166	6.201072
sd	2241339	14.32212	424.0315	54.5022	31.16553	.6494792	1.597625	2.138937
skewness	12.38794	1.527221	8.996914	-12.66885	2.564068	2.314722	-.2173604	-.1008576
kurtosis	193.6902	4.535924	122.5267	210.4255	18.74413	10.59053	2.439982	2.860659
p50	15.45221	5.780939	155.6288	13.4853	7.771116	.4043779	17.37948	6
N	373	373	370	370	372	373	373	373
iqr	55.78233	15.33771	404.3147	13.71828	21.55416	.7636623	2.454098	3
CV	5.382201	1.202086	1.469804	5.121976	2.918973	1.082503	.0919144	.3449302

Source: Research Data, 2021

4.1.2 Interest Coverage Ratio

Interest coverage (INTCOVER) was measured as Fixed Charge on Long-term capital divided by Earnings before interest and Tax. From Table 4.1, the mean interest coverage ratio (416435.4), is extremely high with an equally high standard deviation (2241339) but with a narrow interquartile range (55.78233) and high positive skewness (12.38794). The distribution indicate that a few companies have extremely high interest coverage ratio, while a sizable majority have high interest coverage ratio, with possibly a sizable number also with modal interest coverage represented by the 50^{th} percentile(15.45221). This translates to a few companies having extremely low interest bearing debt, while a large number having low to high interest bearing debt. The variability of interest cover among the listed companies is high with standard deviation (2241339) interquartile range (55.78233) and coefficient of variation (5.382201). The concentration of firms around the modal interest cover rate is

extremely high (kurtosis, 193.6902). the distribution clearly indicates reluctance of companies to apply long-term interest bearing debt.

4.1.3 Debt Ratio

Debt Ratio (DEBTRATIO) was measured as Long-term debt divided by total assets times 100%. From Table 4.1, the mean debt ratio (11.91439%) which is low. The distribution is positively skewed (1.527221) indicating modal and median debt ratio of the listed companies represented by the 50th percentile (5.780939%) are lower than the mean but a few companies have extremely high debt ratio dragging the mean to 11.9%. This implies many companies have low to moderate amounts of long-term debt and only a few have extremely high amounts of long-term debt to total assets. The distribution is moderately variable shown by standard deviation (14.32212%), the interquartile range (15.33771%) and coefficient of variation (1.202086). The concentration around the modal ratio is equally messokurtic (4.535924). This distribution also show reluctance of listed companies to apply long-term debt finance.

4.1.4 Debt/Equity Ratio

Debt/Equity Ratio (DERATIO) was measured as total debt divided by total share-holders equity. From Table 4.1, the mean debt/Equity ratio (288.4953) is higher than the majority represented by the mode and the 50th percentile (155.6288) resulting in high positive skewness (8.996914). This imply that a few companies have extremely low equity or high total debt dragging the mean upwards while the majority have moderate to low total debt or high shareholders equity. The variability is moderate represented by the standard deviation (424.0318), the interquartile range (404.3147) and the coefficient of variation (1.469804). The distribution of firms around the modal Debt/Equity ratio however is highly concentrated (Kurtosis, 122.5267). The

distribution confirms generally the reluctance of firms at NSE to use both short-term and long-term debt.

4.1.5 Return on Equity

Return on Equity (ROE) was measured as Profit after Tax divided by Shareholders Equity times 100%. From Table 4.1, the mean ROE (10.64085%) was lower than the ROE in a majority of the companies represented by the modal and the 50th percentile ROE (13.4853%) resulting in negative skewness (-12.66885). This implies that a few companies had extremely low ROE compared to the majority dragging the mean ROE downwards. The variability of ROE was high with standard deviation (54.5022%), interquartile range (13.71828%) and the coefficient of variation (5.121976). The concentration of firms around the modal ROE was very high (kurtosis, 210.4255). the distribution of ROE indicate that except for a few firms, the ROE at NSE is generally around 13%

4.1.6 CEO Power

CEO Power (CEOPOW) was measured using a composite CEO Power index based on objective power indicators reported on published financial reports shown in Table 3.3. Table 4.1 show that the mean CEO Power Index (6.201072) on a 0 to 14 scale was higher than the 50th percentile index (6.0) indicating a few companies had high CEO power index dragging the mean upwards from median. The difference is however very small. The skewness (-0.1008576), imply that the mean CEO Power is lower than the modal, but the difference is small. This implies that a few companies had low CEO Power index dragging the mean below the modal. The distribution of CEO Power therefore appears to be bell-shaped, normal distribution. The variability was moderate with standard deviation (2.138937), interquartile range (3.0) and

coefficient of variation (0.3449302). The concentration of firms around the modal CEO power was messokurtic (2.60659). The distribution appears normally distributed with very slight negative skewness.

4.1.7 Sales Growth

Sales growth (SALESGRT) was measured as percentage increase in current year sales over prior year's. Table 4.1 show, the mean growth-rate (10.67688%) was higher than the growth-rate in a majority of the companies represented by the modal and the 50^{th} percentile (7.771116%) giving rise to moderate positive skewnesss (2.564068). The variability was moderate with standard deviation (31.16553), interquartile range (21.55416) and coefficient of variation (2.918973). The concentration of firms around the modal sales growth rate is high (kurtosis, 18.74413). This distribution implies that majority companies had superior growth rate compared to a few with low growth rate occasioning the positive skewness.

4.1.8 Firm Operational Efficiency)

Firm Operational Efficiency (OPEFF) was measured as total assets turnover. From table 4.1, the mean operational efficiency (0.599979) is higher than in majority of listed firm represented by the modal and 50^{th} percentile(0.4043779) and supported by skewness (2.314722). This implies that a few firms had very high operational efficiency dragging the mean upwards. The variability was however moderate with standard deviation (0.6494792), interquartile range (0.7636623) and coefficient of variation (1.082503). The concentration of firms around the modal operational efficiency rate was high (kurtosis, 10.59053). This distribution implies majority of firms at NSE have moderate operational efficiency but a few have high operational efficiency.

4.1.9 Firm Size

Firm size was measured as natural logarithm of total assets. From Table 4.1 the mean firm size(17.38166) was marginally higher than median firm size represented by 50^{th} percentile(17.37948) but lower than the modal firm size supported by marginal skewness(-0.2173604). This observation implies that a few firms were much larger than the median dragging the mean firm size upwards, while another set of few firms were smaller than the modal dragging the mean below the modal. The firm size therefore appears normally distributed with moderate variability: standard deviation (1.597625), interquartile range (2.454098) and coefficient of variation (0.0919144). The concentration of firms around the modal firm size was messokurtic (2.439982). This distribution shows that firm size is normally distributed at NSE.

4.2 Study Variables Distribution by Industry

Controlling for sales growth, firm size and operational efficiency, the study sought to investigate the moderating effect of CEO Power on the relationship between financial leverage and financial performance of companies listed at the NSE. NSE classifies companies into nine industrial segments: Agriculture, Banking, Commercial and Allied, Construction, Energy, Insurance, Investment, Manufacturing, and Telecommunication. Financial leverage was classified into interest cover, debt ratio and debt equity ratio to capture distinct characteristics of the variable. The study therefore had the following eight variables of interest: interest cover, debt ratio, debt-equity ratio, Return on Equity, Sales Growth, Operational efficiency, Firm size, and CEO Power. To assess the diversity in the sample population, the mean of these variables analyzed per industry are presented in table 4.2 in the next following page.

Table 4.2 Variable Summary statistic by Industry

INDUSTRY	INTCOVER	DEBTRA~O	DERATIO	ROE	SALESG~H	OPEFF	FIRMSIZ	CEOPOW
AGRIC	137783.2	2.211346	34.32981	11.17665	10.51727	.4895412	15.58961	5.95
BANK	515095.8	5.8324	639.9912	17.29833	13.34498	.0952389	19.05657	6.183673
COMMER	188892.5	9.700095	91.96633	-.4930978	.7424468	.9277768	15.57727	6.76
CONSTR	414095.6	18.88478	165.1668	6.959282	2.63195	.7476845	16.5041	6.416667
ENERG	21.49015	33.87452	182.494	6.870885	13.27174	1.234889	18.63534	6.433333
INSUR	1475533	3.460183	261.2095	17.73769	21.19461	.3401791	17.52583	6.938776
INVEST	5.639913	17.89504	112.9749	4.214188	38.02294	.3227741	17.09066	4.368421
MANUF	9625.381	17.71685	210.3677	5.363187	.3351456	1.055096	16.38206	5.081633
TELECOM	62.2351	4.287478	51.88792	30.46089	13.58392	1.08424	18.76921	7.7
Aggregate	416435.4	11.91439	288.4953	10.64085	10.67688	.599979	17.38166	6.201072

Source: Research Data, 2021.

Table 4.2 presents the distribution of mean of the raw data by industry. The diversity in industries is evident from the means particularly with respect to leverage variables. Insurance sector has the highest interest coverage (INTCOVER) followed by Banking sector and construction. The lowest interest coverage is in telecommunication sector. This implies the sector with the least interest bearing long-term debt is insurance, followed by banking sector and that with the highest is telecommunication. The sector with the highest debt ratio (DEBTRATIO) is Energy followed by construction, investment and manufacturing, being sectors with the highest long-term debt to total assets in that order, the least being Agriculture followed by insurance, Telecommunication and Banking. The sector with the highest Debt/Equity ratio (DERATIO) is Banking followed by Insurance, Manufacturing and Energy. The sector with the least D/E ratio is agriculture followed by Telecommunication. The diversity evident in the distribution of means is a reflection of differences in total debt levels, debt term structure, total assets size, interest costs and EBITDA flows.

4.3 Diagnostic Tests

4.3.1 Test for Normal Distribution of Covariates

The study proposed to use regression model for hypothesis testing. This model assumes that the covariates are normally distributed. A number of tests, and guidelines were used to evaluate the relevance of this basic assumption in the study. Some of the tests include mean, median and mode inspection, Jarque-Bera/Skewness-Kurtosis statistic and Shapiro-Wilks statistic. Both the statistical methods are based on skewness, Kurtosis, and standard deviation which are presented in table 4.3a below. Finally, Histogram and Q-Q plot inspection are also used for a final decision.

Table 4.3a Variable Distribution Statistics

		INTCOVER	DEBTRATIO	DERATIO	ROE	SALESGRT
N	Valid	373	373	370	370	372
	Missing	7	7	10	10	8
Mean		416435.375370	11.9143884	288.4952567	10.6408548	10.6768817
Median		15.452214	5.7809388	155.6288400	13.4853030	7.7711164
Mode		-1643652.0000[a]	.00000	4.70863[a]	-895.33612[a]	-81.94117[a]
Std. Deviation		2241338.9129730	14.32211921	424.03154791	54.50220270	31.16552503
Skewness		12.438	1.533	9.034	-12.720	2.574
Std. Error of Skewness		.126	.126	.127	.127	.126
Kurtosis		193.288	1.573	121.174	210.272	15.974
Std. Error of Kurtosis		.252	.252	.253	.253	.252
Minimum		-1643652.0000	.00000	4.70863	-895.33612	-81.94117
Maximum		37005000.0000	61.37129	6413.19730	227.66720	247.16172

		OPEFF	FIRMSIZ	CEOPOW
N	Valid	373	373	373
	Missing	7	7	7
Mean		.5999790	17.3816564	6.2010724
Median		.4043779	17.3794800	6.0000000
Mode		.01457[a]	12.42330	6.00000[a]
Std. Deviation		.64947920	1.59762484	2.13893726
Skewness		2.324	-.218	-.101
Std. Error of Skewness		.126	.126	.126
Kurtosis		7.710	-.551	-.125
Std. Error of Kurtosis		.252	.252	.252
Minimum		.01457	12.42330	1.00000
Maximum		4.76623	20.61632	11.00000

a. Multiple modes exist. The smallest value is shown

Source: Research Data, 2021

Based on examination of mean and median in Table 4.3a, FIRMSIZ, CEOPOW, OPEFF, approach normal distribution but, except for CEOPOW, do not meet the criterion: mean = median = mode. Therefore the data is transformed using natural logarithms in an attempt to normalize the distribution. In table 4.3b are the normalized variables distribution statistics.

Table 4.3b Normalized Variables Distribution Statistics

		LNDDERATIO	LNROE	LNSALESGRT	LNINTCOVER	LNDEBTRATIO
N	Valid	370	370	372	373	373
	Missing	10	10	8	7	7
Mean		5.1036742	6.7960371	4.4933469	14.3830991	1.8942780
Median		5.0474695	6.8139775	4.5192970	14.3124400	1.9141160
Mode		1.54940[a]	6.80900[a]	.72214[a]	14.31244	.00000
Std. Deviation		1.09693000	.32922996	.38924164	.82913203	1.23849471
Skewness		-.101	-18.975	-3.683	-13.744	-.078
Std. Error of Skewness		.127	.127	.126	.126	.126
Kurtosis		-.555	363.232	30.374	245.268	-1.105
Std. Error of Kurtosis		.253	.253	.252	.252	.252
Minimum		1.54940	.50915	.72214	.00000	.00000
Maximum		8.76611	7.02524	5.80261	17.47002	4.13311

Source: Research Data, 2021

Based on mean and median, it is evident that the transformation has improved the distribution of these variables towards normal distribution. Further confirmatory test however are performed and the results presented in tables 4.3c and 4.3d below.

Table 4.3c: Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
OPEFF	373	0.76387	61.067	9.752	0.00000
FIRMSIZ	373	0.98463	3.974	3.272	0.00053
CEOPOW	373	0.99743	0.664	-0.970	0.83400
LNDERATIO3	370	0.95361	11.910	5.873	0.00000
LNROE	370	0.05502	242.631	13.020	0.00000
LNSALESGRT	372	0.69567	78.517	10.347	0.00000
LNINTCOVER	373	0.16187	216.754	12.757	0.00000
LNDEBTRATIO	373	0.95999	10.348	5.542	0.00000

Source: Research Data, 2021

Table 4.3c shows that only CEOPOW is normally distributed, with FIRMSIZ approaching normality but does not meet the criterion of P(z)>0.05. Further test is necessary to confirm this finding.

Table 4.3d Skewness-Kurtosis/Jarques-Bera Type Test for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
OPEFF	373	0.0000	0.0000	.	0.0000
FIRMSIZ	373	0.0840	0.0031	10.58	0.0050
CEOPOW	373	0.4188	0.6733	0.84	0.6580
LNDERATIO3	370	0.4224	0.0030	8.80	0.0123
LNROE	370	0.0000	0.0000	.	0.0000
LNSALESGRT	372	0.0000	0.0000	.	0.0000
LNINTCOVER	373	0.0000	0.0000	.	0.0000
LNDEBTRATIO	373	0.5338	0.0000	.	0.0000

Source: Research Data, 2021

Jarque-Bera (JB) type statistic Table 4.3d, confirms that except for CEO power, all the other variables are drawn from non-normal population. FIRMSIZ and LNDERATIO approach normality but do not meet the criterion of P(z)>0.05.

Given the fact that kurtosis and skewness can be affected by a few outliers and the difficulty of removing outliers without affecting sample size, a condition necessary

for panel data tests; or further data transformation without impacting the natural characteristics of the data set, the researcher considered further normality tests including Q-Q plot and Histogram. The results are presented in Diagrams in Appendix7. Considering that based on skewness and kurtosis inspection, possibly three out of the eight variables FIRMSIZ, CEOPOW, and LNDEBTRATIO, may pass normality test if alternative methods, not significantly affected by outliers, are used(T.-H. Kim & White, 2003) and based on mean and median, six variables: FIRMSIZ, CEOPOW, INTCOVER, LNDEBTRATIO, LNROE and LNSALESGRT pass the normality test. From the visual inspection of the histograms and Q-Q plot all eight pass the test. While also taking into account preposition that normal distribution kurtosis may lie in the range 3-7 and up to 21 may be tolerable while skewness may lie in the range 0-3(Maniagi Musiega, Olweny, Mukanzi, & Mutua, 2017) and the large sample size involved in this study the researcher considered the benefit of using the data for regression to outweigh the need to reshape the data through further transformation.

4.3.2 Multi-Collinearity Test

Two tests were performed to test multi collinearity. The covariates were subjected to VIF and pairwise correlation tests. The results are presented in table 4.4.1 and table 4.4.2.

Table 4.4.1 VIF Test Results

Variable	FIRMSIZ	LNDERATIO 3	OPEFF	LNINTCOVE R	LNSALESGR T	CEOPOW	LNDEBTRATI O	Mean VIF
VIF	1.71	1.60	1.27	1.07	1.06	1.03	1.03	1.25
1/VIF	0.583175	0.623884	0.784414	0.937443	0.946716	0.970975	0.971554	

Source: Research Data, 2021

Table 4.4.1 indicate that not one of the variables contain variation in excess of the acceptable threshold (VIF< 1 or 1/VIF< 0.5) explained by other covariates.

Table 4.4.2: Pairwise Correlation Test Results

e(V)	OPEFF	FIRMSIZ	CEOPOW	LNDERATIO	LNSALE~T	LNINTC~R	LNDEBT~O	_cons
OPEFF	1.0000							
FIRMSIZ	0.2767	1.0000						
CEOPOW	0.0196	-0.1329	1.0000					
LNDERATIO	0.1746	-0.5134	0.1157	1.0000				
LNSALESGRT	-0.0580	-0.1279	0.0063	0.0336	1.0000			
LNINTCOVER	-0.0054	-0.0609	0.0907	0.0640	-0.1741	1.0000		
LNDEBTRATIO	-0.0753	-0.0415	0.0196	-0.0419	0.0356	0.1292	1.0000	
_cons	-0.2281	-0.3710	-0.1562	-0.0269	-0.3187	-0.6958	-0.1512	1.0000

Source: Research Data, 2021

The VIF and tolerance statistics in table 4.4.1 are further confirmed by results in Table 4.4.2: No pairwise variables have correlation beyond 0.5134.

Multicollinearity is considered to exist if covariates are highly correlated or when variation in one covariate is explained by variation in other covariates. VIF measures the variation in a covariate explained by other covariates and variation is considered within acceptable threshold for $1 \leq VIF \leq 10$ or conversely tolerance (T): $1 \geq T \geq 0.5$(Muijs, 2004). VIF value of 1 indicates complete absence of multicollinearity while values greater than 5 indicate some level of multicollinearity(J. Z. Huang, 2014). Table 4.4.1., shows therefore that no covariates suffers multicollinearity. This is confirmed by the correlation matrix in table 4.4.2.

4.3.3 Linearity Test

Regression model assumes linear relationship between the regressors and the regresant. The data was tested for this assumption and the test result is presented in figure 4.1 below.

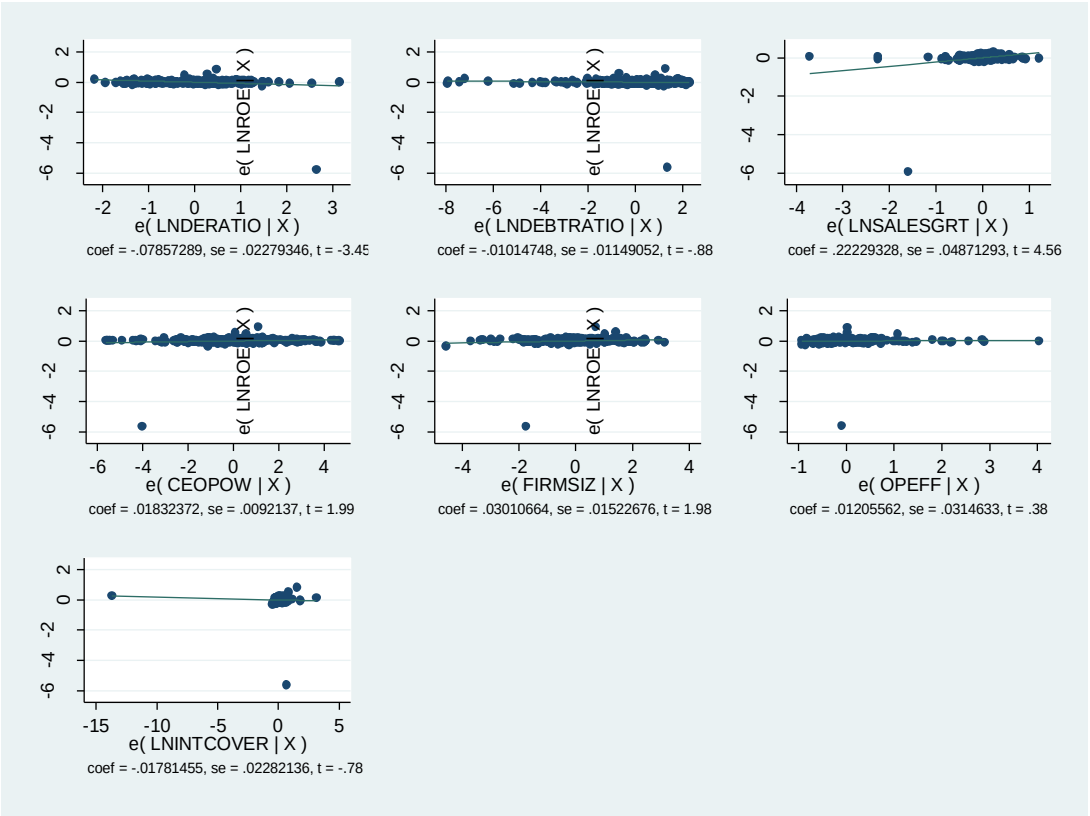

Figure 4.1: Variable Scatter Plot

Source, Research Data(2021)

Using visual inspection of the scatter plots in figure 4.1 it can be seen that only a few scatter points are located away from the estimated regression lines and therefore linearity assumption is valid for all the variables.

4.3.4 Stationarity Test

Stationarity requires a stochastic process to have a mean not sensitive to time and a covariance dependent only on time interval. It permits assumption of convergence of time series allowing for application of central limit theorem and the statistical law of large numbers. Regression model using time series data can only apply standard statistical tools if none of the covariates is non-stationary. Stationarity also imposes weakly dependence and linearity conditions on covariates(J. M. Wooldridge, 2010).

Stationarity test therefore also confirms weak cross-sectional dependence as well as linearity. Stationarity is evaluated through test for unit root. Various tests available are subject to the sample data meeting the test statistic data requirements. Some tests are sensitive to panel data structure and or sample size. For example some tests do not accept unbalanced panel data while others may accept unbalanced panel subject to minimum observations per panel.

4.3.4.1 Unit Root Test

Considering the panel data structure, this study applied Fisher type unit root test based on both Phillips-Pperron(PP) and Augmented Dickey-Fuller(ADF) test statistic. The results are presented in tables 4.5.1, Table 4.5.2, and Table 4.5.3 below.

Table 4.5.1: Fisher Unit Root Test 1 (panel means, time trend and cross-sectional means included, 1 lag)

VARIABLE	ADF statistic(p-value)				Phillips-Perron statistic(p-value)			
	P	Z	L*	Pm	P	Z	L*	Pm
DERATIO	0.0000	0.0000	0.0000	0.0000	0.0000	0.0052	0.0011	0.0000
ROE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SALESGRT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CEOPOW	0.0010	0.3825	0.1258	0.0002	0.0017	0.5285	0.1462	0.0004
INTCOVER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DEBTRATIO	0.0000	0.0000	0.0000	0.0000	0.8036	0.9926	0.9896	0.8066
FIRMSIZ	0.2400	0.9918	0.9743	0.2496	0.0000	0.8156	0.1286	0.0000
OPEFF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Research Data, 2021

Table 4.5.1, shows that, based on the conditions set for the test, only five variables, depict stationarity: DERATIO, ROE, OPEFF, SALESGRT and INTCOVER at 0.05. Given the diversity of industries and time scale of data source same conditions may not fit the data

Table 4.5.2 Fisher Unit Root Test II. (Panel and cross-sectional mean included, time trend or drift not included, lag 1)

VARIABLE	ADF statistic(p-value)				Phillips-Perron statistic(p-value)			
	P	Z	L*	Pm	P	Z	L*	Pm
CEOPOW	0.0061	0.0084	0.0044	0.0026	0.0000	0.0000	0.0000	0.0000
DEBTRATIO	0.0000	0.0000	0.0000	0.0000	0.0000	0.1413	0.0050	0.0000
FIRMSIZ	0.0000	0.1941	0.0334	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Research Data, 2021

Further test in Table 4.5.2, show that CEOPOW, DEBTRATIO, and FIRMSIZ are not significantly affected by time trend or drift and are therefore stationary in table 4.5.2, after excluding time trend or drift in the stationarity test.

It can be concluded based on Fisher type test using Phillips-Pperron test statistic that, at 0.05 level of significance, all the variables are stationary. Phillips-Pperron statistic is preferred over Augmented Dickey-Fuller since it is more robust to serial correlation(Choi, 2001)

4.3.5 Model Selection

A systematic approach was used to select the specific regression model for use in data analysis. The study proposed to use either fixed, random or pooled effects multiple regression model.

4.3.5.1 Breusch-Pagan Lagrange Multiplier Test

The proposed model was tested to determine the suitability of Random effect or the pooled effect models for the data analysis. Table 4.6 shows the test results based on model 3d.

Table 4.6 Breusch Pagan Lagrangian Multiplier Test for Random Effects Results

	var	sd = sqrt(Var)
ROE	.1085438	.3294598
e	.0858693	.2930347
u	.0066427	.0815028
Test: Var(u) = 0; chibar2(01) = 1.10; Prob > chibar2 = 0.1467		

Source: Research Data, 2021

Table 4.6, show Prob > chibar2 = 0.1467, and therefore at 5% significance, we fail to reject the null hypothesis and conclude that the results show that Pooled effect or the OLS model better fits the sample data than Random effect model.

4.3.5.2 Hausman Test

To select between the fixed effect model and the random effect model the Hausman test was performed and the results are presented in table 4.7 below

Table 4.7: Hausman Test Results

. hausman FE RE				
	---- Coefficients ----			
	(b) FE	(B) RE	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
OPEFF	.1016763	.0161959	.0854804	.0787387
FIRMSIZ	.082887	.0402667	.0426203	.0391211
CEOPOW	.050004	.0161155	.0338884	.0164828
LNDERATIO	-.2485045	-.0874182	-.1610863	.0277248
LNSALESGRT	.1766774	.1939159	-.0172384	.0159699
LNINTCOVER	-.0199778	-.0193872	-.0005906	.0043249
LNDEBTRATIO	.0516064	-.010831	.0624374	.0248084
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(7) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 35.07; Prob>chi2 = 0.0000 (V_b-V_B is not positive definite)				

Source: Research Data, 2021

Based on the p-value of chi^2($p<0.05$), we reject the null hypothesis at 0.05 level of significance and therefore the researcher concludes that Fixed effects model fits the data better than Random effects. The researcher now considers a choice between pooled-effect or OLS and Fixed-effect models based on F, p-value and R^2 as presented in Table 4.8 below.

Table 4.8: Fixed Effect and Pooled Effect or OLS models Comparison

Model	R^2	F	Prob>F
Pooled Effect	0.0993	5.69	0.0000
Fixed Effect	0.1948	11.20	0.0000

Source: Research Data, 2021

Based on R^2, F, and p, shown in table 4.8, the researcher adopted Fixed-effect regression model.

4.3.6 Control Tests for Difference in Leverage of Financial and Non-financial sectors

Control tests were performed on sample data to determine if there were significant difference in leverage between financial sector firms and non-financial sector firms that could significantly affect test results and inferences drawn therefrom.

4.3.6.1 Inspection of Regression Coefficients

Regression test models 3a, 4a, 4b, and 4d based on hierarchical regression was performed on the data split between financial sector, non-financial sector, and the combined data set to check for any significant deviation in test results. The results are summarized in table 4.9 below and detailed results presented in Tables: 4.9.1 to 4.9.15 in appendix 8,

Table 4.9: Summary of Control Tests Results from Model 3d to 4C

MODEL	3d			4a			4b			4d		
VARIABLE	COMB	NON	FIN	COMB	NON	FIN	COMB	NON	FIN	COMB	NON	FIN
CONS	5.644051*	2.827846	6.920307*	4.598784*	1.728205	6.956647*	4.6376*	3.892837*	6.955965	4.642933*	3.863277*	6.956585*
FIRMSIZ	.082887	.1764847*	-.0079485*	.0750203	.1920945*	-.0078035*	.0887315*	.125212**	-.0077625*	.0893205*	.1271955*	-.0077024*
LNSALESGRT	.1766774*	.3642943*	.0009174	.1851376*	.3533036*	.0008737	.1263731*	.1602635*	.00084	.1230478*	.1600349*	.0005323
OPEFF	.1016763	.087606	.0108636	.0981594	.0959441	.0097293	.0892968	.0383331	.010272	.0903841	.0373699	.0087973
LNDEBTRATIO	.0516064	.069358	.000597	.0360862	.0551585	.0007123	.0340555	.0247802	.0007093	.0282526	.0237601	-.0002519
LNDERATIO	-.2485045*	-.3065768*	-.0007267	-.241522*	-.3031152*	-.0006307	-.1640776*	-.0910078**	-.0005934	-.1633009*	-.0920046**	-.0009564
LNINTCOVER	-.0199778	.0075109	.0026186*	-.0242418	-.024657	.0026585*	-.0260066	-.0548954	.0026486*	-.044355	-.0150264	.0010122
CEOPOW	.050004*	.0701169*	.0005664	.0501373*	.0468282	.0004201	.052211*	.1856759*	.0003355	.0514132	.187418*	.000265
CEOP#LNDEBTRATIO				.0254467*	.0466502*	-.0002397	.0031513	-.050312*	-.0002598	.0054582	-.0508811*	.0000442
CEOPW#LNDERATIO							.1015756*	.1895731*	.000132	.1019455*	.1896953*	.0002657
CEOPOW#LNINTCOVER										.0083916	.0257684	.0006908*
R^2	0.1948	0.2762	0.4637	0.2105	0.2949	0.4674	0.3419	0.5002	0.4676	0.3430	0.5005	0.4868
F	2.57	2.13	14.36	2.46	2.30	14.12	3.87	1.84	12.56	3.87		13.01

.* significant at 0.05 *** significant at 0.1

Source, Research Data (2021)

From Table 4.9 above it can be observed that the regression constant is statistically significant for combined sample in all test models from 3d to 4d. Further, that it is statistically significant for financial sector and combined in models 3d, 4a, 4d, while for non-financial sector it's statistically significant in models 4b and 4d only. It can also be observed that Firm size has a statistically significant negative relationship with ROE among financial institutions while the relationship is positive and statistically significant among non-financial institution firms. However, this difference may not be related to the regulatory framework and therefore is not sufficient to justify separate analysis. Sales growth show tendency to significance among nonfinancial sector firms but maintains a positive relationship with ROE in both sectors. Examining debt ratio, both sectors display almost the same characteristics: positive statistically insignificant relationship with ROE. Both sectors show a negative relationship between ROE and Debt/Equity ratio except that it is statistically significant for non-financial sector and combined. Similarly, financial sector show positive statistically significant relationship between interest cover and ROE while non-financial sector and combined show negative statistically insignificant relationship. From this observation, it is not possible to exclude financial institutions from the analysis on the basis of adverse influence on the statistical outcome. Further, based on the sectorial R^2: 0.4868 and 0.5005 for financial and non-financial sectors and 0.3430 for combined and sample sizes 150, 230 and 380 respectively, the study finds the sectorial samples insufficient for statistical inference (Memon et al., 2020) and no significant difference between samples to justify separate analysis.

4.3.6.2 Regression Model Suitability Test

The two samples were tested for model suitability and each was separately and jointly suited for fixed effect model analysis. The Lagrange multiplier test for random effects and Hausman test results for Non-Financial and Financial sector firms are presented in Tables 4.10.1, 4.10.2, 4.10.3, 4.10.4, and 4.10.5 respectively in appendix 9. For non-financial sector firms, Langrangian test failed to reject null hypothesis and accepted Pooled effect model while Hausman Test rejected null hypothesis and accepted fixed effect model. The choice between fixed effect and Pooled effect models was on the basis of R^2 (0.2762, and 0.2195) and F(0.000, 0.000) respectively presented on table 4.10.3. Among financial sector firms on the other hand, the Lagrangial multiplier test rejected the null hypothesis, and accepted random effect model. The Hausman test rejected the null hypothesis and accepted the fixed effect model as suited as presented on table 4.10.4 and 4.10.5 in appendix 9.

4.3.6.3 Difference in Regression Beta Coefficients Test

The two samples were also subject to difference in coefficients test based on model 3A. The results are presented in Appendix 10. Tables 4.11.1A, B, and C present results based on fixed effect model. Tables 4.11.2A, B and C present results based on Random Effect model and Tables 4.11.3A, B, and C present results based on Pooled Effect model. In fixed effect model, the variables with statistically significantly different beta are firm size, sales growth and debt/Equity ratio (Table 4.11.1c), in Random effect model, the variables are CEO Power, sales growth, and Debt/Equity ratio(Table 4.11.2C), while in Pooled effect model, the variables are CEO Power, Debt/Equity ratio, sales growth and Debt ratio(Table 4.11.3C). Focusing on the leverage ratio (Debt/Equity ratio) that appear to show significant difference between the data sets in all models, and the fixed effect model applicable to both data sets,

Table 4.11.1A and 4.11.1B, showed that the difference was in magnitude and not direction. The study therefore proceeded to test the research hypotheses on the basis of regression tests from the combined sample.

4.3.7 Cross-sectional Dependence Test

The Panel data was subjected to three cross-sectional dependence tests: Pesaran, Frees, and Friedman Tests. The detailed results are in Appendix 11, summarized in Table 4.12.1 and 4.12.2

Table 4.12.1 Summary FE model CSD Test

A. Pesaran's test of cross sectional independence = -0.114, Pr = 0.9089
Average absolute value of the off-diagonal elements = 0.344

B. Frees' test of cross sectional independence = 2.712
|---|

Critical values from Frees' Q distribution

alpha = 0.10 : 0.4892

alpha = 0.05 : 0.6860

alpha = 0.01 : 1.1046

C. Friedman's test of cross sectional independence = 4.553, Pr = 1.0000

From Table 4.12.1 based on the FE regression model, all the three tests fail to reject the null hypothesis, and therefore the researcher accepts the null hypothesis that there is no cross-sectional dependence in the panel data.

Table 4.12.2 Summary RE model CSD Test

A. Pesaran's test of cross sectional independence = 3.890, Pr = 0.0001
Average absolute value of the off-diagonal elements = 0.339

B. Frees' test of cross sectional independence = 1.573
|---|

Critical values from Frees' Q distribution

alpha = 0.10 : 0.4892

alpha = 0.05 : 0.6860

alpha = 0.01 : 1.1046

C. Friedman's test of cross sectional independence = 7.158, Pr = 1.0000

Source: Research Data, 2021

From Table 4.12.2 the Pesaran test rejects the null hypothesis at 0.05 while both the Free's and Friedman tests fail to reject the null hypothesis based on RE regression model.

Given that the appropriate model for the field data was ascertained to be FE, the researcher failed to reject the null hypothesis and concluded that the field data based on FE model was free of cross-sectional dependence.

4.4 Hypotheses Tests

Fixed effect multiple regression models were used for hypothesis testing. The hypotheses are grouped into two categories: direct effect and conditional effect test hypotheses.

4.4.1 Direct Effect Tests

Three direct effects were hypothesized and were to be tested at 5% level of significance controlling for three confounding factors:

H_{01}: Debt ratio has no significant effect on firm financial performance

H_{02}: Debt/Equity ratio has no significant effect on firm financial performance

H_{03}: Interest coverage ratio has no significant effect on firm financial performance

The detailed regression results are presented in appendix 12. The summary result of regression tests for direct effects is presented in table 4.13 below.

Table 4.13 Direct Effect Regression Result Summary

VARIABLE	Model1	Model 2a	Model 2b	Model 2c	Model 2d
CONS	5.115375*	5.17195 *	5.511081*	5.238234 *	5.717194 *
FIRMSIZ	.0486072	.0426244	.0964612 *	.0563469	.109191 *
LNSALESGRT	.1688743*	.185014 *	.1619656 *	.1806763 *	.1963116 *
OPEFF	.1247052	.1256983	.1239179	.1261987	.1189673
LNDEBTRATIO		-.0159905			.0061883
LNDERATIO			-.2345286*		-.2916581*
LNINTCOVER				-.021651	-.0209431
CEOPOW					
CEOP#LNDEBTRATIO					
CEOPW#LNDERATIO					
CEOPOW#LNINTCOVER					
R^2	0.0507	0.0554	0.1696	0.0534	0.2060
F	5.84*	4.09*	16.70*	4.61*	11.98*

Source: Research Data, 2021 .* significant at 0.05

4.4.1.1 Effect of Covariates

The confounding factors were hypothesized to be Firm size (FIRMSIZ); Sales Growth (SALESGRT); and Firm operational efficiency (OPEFF). Model1 was used to test the effect of confounding variables on the dependent variable. The Table shows the three control variables to account for 5.07% of the variance in ROE at 0.05 significance. It also indicates that of the three control variables only sales growth was

statistically significant ($p<0.05$). Further, all the confounding variables Sales growth, Operational efficiency, and Firm size, showed positive relationship with ROE (β=.0486072; .1688743; .1247052) respectively. The significance of the regression constant indicated the significance of omitted variables in the model.

The covariates: sales growth, operational efficiency and Firm size were included in this study to permit reliable interpretation of the regression coefficients for predictor variables(K. A. Frank, 2000). Apart from firm size which was slightly negatively skewed, firm operational efficiency and sales growth were slightly positively skewed. The study finds statistically significant the direct relationship between sales growth and ROE (β=.1688743, p= 0.001) in agreement with other studies such as (Dey et al., 2018; Lazăr, 2016; Odalo, Achoki, et al., 2016). The study also finds a positive relationship between firm size and operational efficiency on the one hand and ROE on the other (β=.0486072, .1247052; p= 0.267, 0.180) respectively both statistically insignificant. The findings are similar to other studies such as (Amedu, 2016; Baik et al., 2013; Hossain & Saif, 2019; Kioko, 2013; Ndolo, 2015; Tasi et al., 2019).

In this study firm size was measured as natural log of total assets; Operational efficiency as sales over total assets. This study used three control variables in contrast to a number of studies which use one or none at all. The coefficients of the regressors are therefore expected to fairly reflect the reality. A number of studies including (Kioko, 2013) and others listed here, measured profitability in terms of return on assets using EBIT which is significantly different from ROE. This study however focused on effect of leverage whose fundamental purpose is to lever equity earnings(Bethlehem, 1978) and therefore measured profitability in terms of ROE. Efficiency is also variously measured in other studies as stock turnover, debtor's

turnover, average collection period and total assets' turnover. Similar studies which used ROE but obtained negative relationship include (Amato & Wilder, 1985; Banchuenvijit & Phuong, 2012; Innocent, Mary, & Matthew, 2013; MUSAH & KONG; Vintila & Florinițba, 2012). positive relationship between firm size and ROE appears to confirm the existence of optimal firm size beyond which further growth is achieved at the expense of profitability(Amato & Wilder, 1985; Canback, Samouel, & Price, 2006). It is also consistent with economic theory preposition that growth in firm size results in positive returns to scale and contradicts agency theory which postulates that increases in sales volume and firm size may not always be in the best interest of shareholders (Bendickson et al., 2016; Fama, 1980; Fama & Jensen, 1983). This study's findings confirm the existence of economies of scale(Canback et al., 2006) and consistent with rationale of growth in firm size, sales volume and higher efficiency results in more profit and return on equity.

4.4.2 Effect of Predictor variables

Models 2a, 2b, 2c assessed the partial effect of each of the regressor variables: DEBTRATIO (Debt ratio): DERATIO (Debt/Equity ratio), and INTCOVER (interest coverage), and 2d the joint effect of all.

4.4.2.1 Debt Ratio and ROE

From Table 4.13, individually, the predictive power of Debt Ratio (0.0554), and jointly (0.2060). in moels 2a and 2d respectively. The Beta coefficient of Debt ratio can also be seen to be statistically insignificant. The hypothesis H01below Is therefore accepted at 0.05 significance

"**H_{01}**: Debt ratio has no significant effect on firm financial performance"

.The aggregate model (2d) was observed to possess more explanatory power of the variance in ROE than the individual variable and confirms the results for the hypotheses findings. It was also observed that the omitted variables in both partial and joint model had statistically significant effect on RO effect reflected by the significance of the regression constant. Sales growth also had statistically significant ($p<0.05$).

From the descriptive statistics, at NSE Debt ratio was found to be positively skewed with the implication that a few firms use long-term debt, while a majority are reluctant. The study also found from hypothesis test that Debt Ratio (long-term debt/total assets) has a positive statistically insignificant relationship with ROE ($\beta=.0119276$; $p=0.504$). Other studies that had similar findings include(Masavi et al., 2017; MG Musiega, Chitiavi, Alala, Douglas, & Rueben, 2013).

The findings are consistent with dynamic tradeoff capital structure theory which posits that increasing debt results in increased profits up to theoretical optimal debt level(Roberts & Leary, 2004). It is also consistent with agency theory preposition that debt finance can be used to resolve agency conflict over free cash flows resulting in more efficient use of cash(J. R. Graham & Leary, 2011) and pecking order theory that debt finance can be used to overcome financing deficit to improve financial performance in capital markets with firm information asymmetry. The findings confirm that at NSE the use of long-term debt is sub-optimal consistent with the descriptive statistics

4.4.2.2 Debt/Equity Ratio and ROE

The direct effect of Debt-Equity ratio was tested in model 2b and 2d. The explanatory power of Debt/Equity Ratio of the variations in ROE individually was (0.1696), and

jointly (0.2060). Debt/Equity ratio was significant in model 2b and 2d. it is therefore clear that the null-hypothesis below is rejected at 0.05 significance

> "**H_{02}**: Debt/Equity ratio has no significant effect on firm financial performance"

The aggregate model was observed to possess more explanatory power of the variance in ROE than the individual variables and confirms the results for the hypotheses findings. It was also observed that the omitted variables in both partial and joint model were statistically reflected by the regression constant. Similarly Sales growth was statistically significant ($p<0.05$). this implies the effect of Debt/Equity ratio was purely attributable to the variable.

From the descriptive statistics, at NSE Debt/Equity Ratio was highly positively skewed implying a few firms had very high debt/equity ratio while the majority low to high ratio. From hypothesis test, the study found that Debt/Equity ratio had a negative statistically significant relationship with ROE ($\beta= -.1868542$; $p=0.000$). This finding implies that at NSE total debt usage is excessive, beyond the optimal level and its effect on ROE is statistically significant. Similarly, Leon (2013); Martis (2013); Yapa Abeywardhana (2016) obtained a negative relationship. This observation seems to confirm that no matter the CEO power configuration the ratio of total debt to total equity has profound effect on ROE in particular and profitability in general. In this study Debt/Equity ratio carries with it the competing ownership rights between shareholders and outside interests and the debt term-structure. When reducing total debt, first the external claims are reduced and secondly the internal term-structure is altered by targeting either short-term debt or long-term debt or both depending on management objective. Whereas the study finds excess usage of total debt, it also

finds inadequate of long-term debt. This finding implies excessive use of in particular short-term debt.

The use of debt in capital structure is primarily to lever the firm's investment on assets and return on equity(Bethlehem, 1978; Kraus & Litzenberger, 1973). If debt is to lever ROE, then the firm should use total debt in its capital structure up to the point where at least ROCE is equal to the cost of capital (Bethlehem, 1978; Kraus & Litzenberger, 1973; Myers & Majluf, 1984). The term-structure of total debt of a firm is path dependent and is affected by availability of debt finance sources, debt market yield structure, and management attitude to risk. Ideally managers should use the lowest cost finance, and apply marching principle in financing capital needs. A firm may experience irrational term-structure of debt due to historical process or due to external constraints involving yield structure, or capital market constraints.

The finding supports dynamic trade-off capital structure theory which posits the existence of an optimal capital structure and the possibility of a firm's capital structure wandering away from the optimal depending on the costs of adjustments(DeAngelo et al., 2011; Hennessy & Whited, 2005; Roberts & Leary, 2004). It is also consistent with agency theory's increasing agency cost of debt due to excessive use of debt in capital structure(Jensen & Meckling, 1976) and pecking order's use of debt in cases of information asymmetry in stock market.(Myers &Majluf, 1984)

4.4.2.3 Interest Cover and ROE

The effect of Interest cover on ROE was tested in model 2c and jointly with other leverage variables in model 2d in Table 4.13. The results showed the explanatory power of (0.0534) partially and jointly (0.2060). The beta coefficients were

(-.021651) and (-.0209431) respectively both of which are statistically insignificant. The hypothesis that follows was therefore accepted at 0.05 significance.

> "**H_{03}**: Interest coverage ratio has no significant effect on firm financial performance"

The joint model (2d) was observed to possess more explanatory power of the variance in ROE than the individual variable and confirms the results for the hypotheses findings. It was also observed that the omitted variables in both partial and joint model had statistically effect reflected in the significance of the regression constant ($p<0.05$)..

From the descriptive statistics table 4.1 the study found that NSE firms were reluctant to use long-term interest bearing debt resulting in high mean interest cover (mean 416,435.4; while median15.45221) and highly positively skewed (skewness =12.38794). From table 4.13 Interest cover was further found to consistently show in model 2c and 2d a statistically insignificant negative relationship with ROE (β= -.021651; p= 0.335).

This finding is contrary to Enekwe et al. (2014); Zelalem (2020) who obtained a positive relationship with ROA. Positive relationship arises if Interest cover increases in direct proportion to profitability. This implies increase in a firm's profitability while interest costs remain constant (loan size and interest rate remain constant) or if the interest costs reduce arising from decline in long-term loan size or interest rate, while profitability increases or remains constant. Interest cover may reduce while profitability increases resulting in negative relationship only if interest costs increase but profits remain constant or increase marginally or less than proportionately. It's

only in this case that a negative relationship with profitability and ROE can result. This therefore implies, a decrease in interest cover, through increased borrowing of interest bearing debt and investment assuming constant interest rate and rational investment policy, results in less than proportionate increase in profitability and ROE. Increasing interest cover implies decreasing borrowing of interest bearing debt and investment assuming constant interest rate resulting in less than proportionate decrease in profitability. This finding could imply a scope for increased profitability through increased long-term debt which however is restricted by exceedingly high interest rates in Kenya.

Sensitivity of interest cover to marginal borrowing may only occur if the interest rate is substantial compared to ROI/ROCE. Evidently, table 4.2: Variable Summary Statistics, show that out of 9 industries, three had interest cover lower than 100: Energy (21.49); Investment (5.64) and Telecommunication (62.49) with the total average interest cover being 416,435.4. Despite all transformation efforts, from Table 4.3a, the distribution of this variable is still highly positively skewed 12.38794) and highly peaked (193.6902).

This finding is in agreement with positive relationship between debt ratio and ROE given that Debt ratio is measured as Long-term debt divided by total assets. Increase in long-term debt and decrease in interest cover are both consistent with increase in ROE. Both findings confirm that firms at NSE use less than optimal amounts of long-term interest bearing debt in line with dynamic trade of theory preposition, in cases where market friction inhibit readjustment to optimum debt level. It is also consistent with pecking order in cases of information asymmetry, where a firm is posited to apply riskless debt before any further application of risky debt and equity (Myers &

Majluf, 1984). It would imply that firms at NSE find long-term, interest bearing debt, to be highly risky and to be avoided. However further empirical research may be necessary to confirm the findings and the market frictions that explain how ROCE/ROI and interest rate relate in the Kenyan Capital market resulting in the differentials in ROCE and Interest cost and market behavior towards long-term debt observed in this study.

4.4.2.4 Joint Effect of Debt Ratio, Debt/Equity Ratio, and Interest Cover on ROE

The joint effect of Debt Ratio, Debt/Equity Ratio, and Interest Cover on ROE was tested in model 2d and the summary results presented in Table 4.13. From the results, controlling for sales growth, firm size, and firm operational efficiency, only Debt/Equity ratio has statistically significant negative effect on ROE(β= -.2916581; $p<0.05$) . While Debt ratio displayed positive statistically insignificant (β=.0061883; $p>0.05$) relationship with ROE, Interest cover showed negative statistically insignificant relationship (β= -.0209431, $p>0.05$). It's also noted that the inclusion of the other regressors, the βeta-coefficient of Debt Ratio reverted from (β= -.0159905) to (β=.0061883) underscoring the effect of omitted variables in partial regression models. Moreover, the joint model had more explanatory power than each of the partial models (R^2 = 0.2060). the results confirm the findings on hypotheses Ho1, Ho2, and Ho3.

4.4.3 Conditional Effect Tests.

4.4.3.1 CEO Power Effect Test

The study proposed four hypotheses to test the conditional effect of CEO Power on the relationship between financial leverage and firm financial performance. Model 3 tests H04 which is as well a necessary condition for testing conditional effects.

H_{04}: CEO power has no significant effect on firm financial performance

CEO power effect was tested jointly with each of the regressor variables in models 3a (Debt Ratio), 3b(Debt/Equity Ratio), 3c(Interest Cover) and jointly with the three variables in model 3d. These effects were further tested in models 3Ca 3Cb 3Cc and 3Cd where the regressor variables were mean centered. The detailed results are presented in appendix 12. The Summary output of model 3 tests are presented in Table 4.14,

Table 4.14 CEO Power Effect Regression Results Summary

VARIABLE	Model 3a	Model 3b	Model 3c	Model 3d	Model 3Ca	Model 3Cb	Model 3Cc	Model 3Cd
CONS	5.126793*	5.463455*	5.18974 *	5.654024 *	5.538904*	4.572763*	5.214921*	4.32544*
FIRMSIZ	.0191632	.0819135*	.0404298	.0867451	.0191632	.0819135*	.0404298	.0867451
LNSALESGRT	.1904939 *	.1622562*	.1806 *	.1995842*	.1904939*	.1622562*	.1806 *	.1995842*
OPEFF	.104977	.1095742	.1094952	.1010621	.104977	.1095742	.1094952	.1010621
LNDEBTRATIO	-.0137829			.0076895	-.0137829			.0076895
LNDERATIO		-.2297315*		-.2855917*		-.2297315*		-.2855917*
LNINTCOVER			-.0211932	-.0180973			-.0211932	-.0180973
CEOPOW	.0702619*	.0454599*	.0527795 *	.0603111*	.0702619*	.0454599*	.0527795*	.0603111*
CEOP#LNDEBTRATIO								
CEOPW#LNDERATIO								
CEOPOW#LNINTCOVER								
R^2	0.0827	0.1841	0.0729	0.2260	0.0827	0.1841	0.0729	0.2260
F	5.01*	14.71*	5.13*	11.51*	5.01*	14.71*	5.13*	11.51*

Source: Research Data, 2021 .* significant at 0.05

From Table 4.14, the inclusion of CEO Power in the model 3, not only increases the explanatory power of the model from 0.0554, 0.1696, 0.0534, 0.2060 to 0.0827 0.1841, 0.0729, 0.2260 respectively but also shows the effect of CEO Power (β=.0702619 * ,.0454599*,.0527795 * , .0603111*) ($p<0.05$) as positive and statistically significant. It however does not diminish the significance of sales growth, Debt/Equity ratio, and other variables represented by the regression constant. Only the regression constant differentiates the mean centered regression models from the non-

centered models. The centered regression results are fairly similar to the non-centered regression results. However, in centered models the regressors can assume the value ‘zero’ which coincides with the mean value for the regressor. This condition is necessary for interpretation of the moderation effect. The null-hypothesis “H04: CEO power has no significant effect on firm financial performance” is therefore rejected.

CEO Power in all the three direct effect partial regression models, one direct effect joint model, three partial moderated effect models and one joint moderated effect model displayed positive statistically significant relationship with ROE (.0702619*, .0454599*, .0527795* , .0603111*, .0688464*, .0497271* , .0536758 *, .0596112*). The null hypothesis was therefore rejected at 0.05.

From the descriptive statistics, CEO Power was generally found to be normally distributed and from table 4.14 a statistically significant positive effect on ROE at 0.05. This is consistent with literature suggestion that CEO power motivates creativity and innovation in management leading to a positive relationship and its absence may demotivate(Adams et al., 2005; J. R. Graham et al., 2019; Hambrick & Mason, 1984; Kanfer, 1990; Liu & Jiraporn, 2010; Tjosvold et al., 2005). However, It is inconsistent with the suggestion that managers may use granted powers to serve self-interests instead of the very shareholders leading to a negative relationship with profitability(Adams et al., 2005; Fama & Jensen, 1983; Gormley & Matsa, 2016; Kesten, 2010). E. H. Kim and Lu (2011) suggests that the relationship between returns and CEO power may in fact be quadratic or inverted U in the absence of strong external controls. The findings of the study support the provision of some level of power to CEO to enhance performance.

4.4.3.2 Conditional Effect of CEO Power Test

Model 4a, 4b, and 4c tests hypotheses H05a, H05b, and H05c respectively. Due to omitted variable effect H05a, is further tested in model 4d

H_{05a}: CEO Power has no significant moderating effect on the relationship between debt ratio and firm financial performance

H_{05b}: CEO Power has no significant conditional effect on the relationship between debt-equity ratio and firm financial performance.

H_{05c}: CEO power has no significant moderating effect on the relationship between interest coverage and firm financial performance

The joint conditional effect is summarized in model 4d. The detailed regression results are presented in appendix 12 and summarized in Table 4.15.

Table 4.15 Conditional Effect Regression Results Summary

VARIABLE	Model 4a	Model 4b	Model 4c	Model 4d
CONS	5.683366 *	4.783408 *	5.201549*	4.713709*
FIRMSIZ	.010922	.0848579 *	.040174	.0827961**
LNSALESGRT	.1915124 *	.10803 *	.1841355 *	.1321322*
OPEFF	.095761	.0941417	.1088967	.0585379
LNDEBTRATIO	-.0167257			.0119276
LNDERATIO		-.1511873 *		-.1868542*
LNINTCOVER			-.0044032	-.0095987
CEOPOW	.0688464 *	.0497271 *	.0536758 *	.0596112*
CEOPOW#LNDEBTRATIO	.0140918			.0028859
CEOPOW#LNDERATIO		.1033959*		.1184322 *
CEOPOW#LNINTCOVER			-.0079554	-.0062705
R^2	0.0913	0.3336	0.0740	0.3894
F	4.64*	27.11*	4.33*	17.41*

Source: Research Data, 2021 .* significant at 0.05 ** Significant at 0.1

4.4.3.2.1 Conditional Effect of CEO Power on the relationship between Debt ratio and ROE

Table 4.15 model 4a show the summary outcome of test for the conditional effect of CEO Power on the relationship between Debt Ratio and ROE. The model explains 9.13% of the variation in ROE. Only sales growth, CEO power and the regression constant are statistically significant. The interaction variable (c.CEOPOW_C#c.LNDEBTRATIO_C) is positively related to ROE (β=.0140918) but statistically insignificant (p>0.05) and similarly in model 4d.

The explanatory power of the model increased from 8.27% in model 3a to 9.13% as a result of inclusion of the interaction term between CEO Power and Debt ratio. CEO Power, sales growth and regression constant remained statistically significant (p>0.05). This clearly shows the existence of statistically insignificant positive partial moderating effect. The null hypothesis "H05a: CEO Power has no significant moderating effect on the relationship between debt ratio and firm financial performance" is therefore accepted.

The relationship between Debt Ratio and ROE was tested, in models 2a, 2d 3a, 3d, 4a and 4d. where it is the only leverage aspect in the regression model(2a, 3a, 4a), it presented negative relationship (-β, p>0.05), consistently and in models 2d, 3d, and 4d it presented positive statistically insignificant relationship with ROE (+β, p>0.05). When Debt ratio (LNDEBTRATIO_C) is subjected to conditional effect of CEO Power, the interaction term (CEOPOW#LNDEBTRATIO) show insignificant direct effect (β=.0254467, p> 0.05) in model 4a, with +0.0157 impact on R^2 and was insignificant also when other aspects of Financial Leverage are moderated in model 4d To investigate the moderating effect of CEOPOWER on the relationship between

Debt ratio and ROE in models 4a and 4d, margins predictive analysis was performed and result presented in figure 4.2.1 and 4.2.2 respectively.

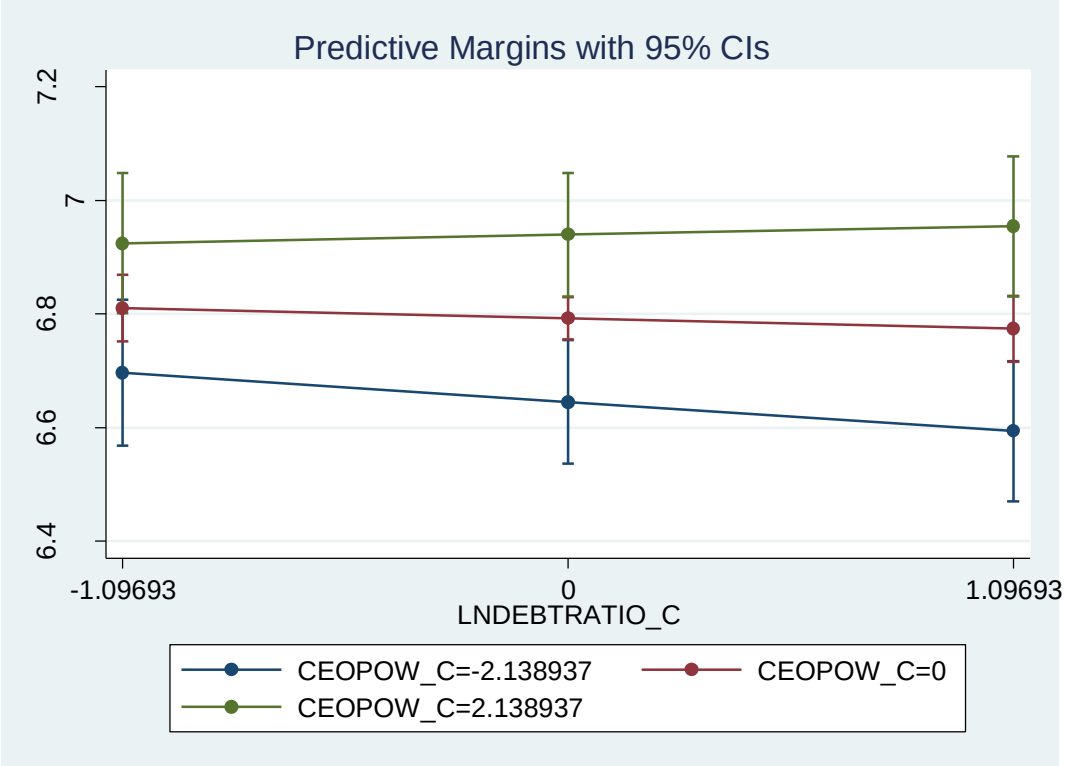

Figure 4.2.1: LNROE/ LNDEBTRATIO, CEOPOWER Partial Regression Contingency Graph

Source: Research Data, 2021

From Figure 4.2.1, it can be seen that Debt ratio has a negative marginal effect on ROE at CEO Power equals to zero. It can also be seen that higher CEO Power converts this relationship to a marginally positive relationship while lower CEO Power enhances the negative relationship. It would therefore suggest that higher CEO power is desirable.

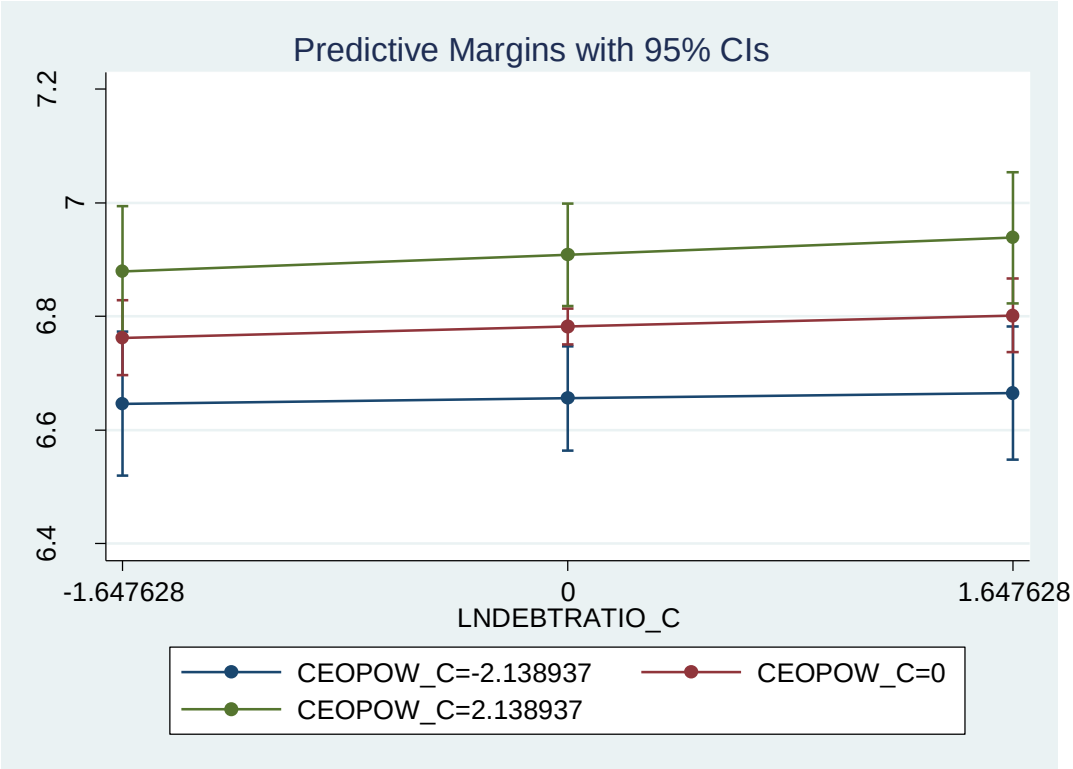

Figure 4.2.2 LNROE/ LNDEBTRATIO, CEOPOWER Joint Regression contingency Graph

Source: Research Data, 2021

From diagram 4.2.2 it would suggest that higher CEO power marginally attenuates the positive relationship between debt ratio and ROE, while lower CEO Power has marginal dampening effect

The difference in trend of the relationship between debt ratio and ROE is attributable to omitted variable effect. The conditional effect of CEO Power on the relationship between Debt Ratio and ROE is therefore positive but statistically insignificant.

CEO power was found to have marginal positive moderating effect on the relationship between debt ratio and ROE. This finding was consistent with Adams et al. (2005); Graham et al. (2019) and upper echelon theory by Hambrick and Mason (1984) and supports provision of discretionary powers to management to enhance financial performance but the relationship is statistically insignificant.

4.4.3.2.2 Conditional Effect of CEO Power on the relationship between Debt/Equity ratio and ROE

From table 4.15, the summary test results are presented in model 4b. As a result of inclusion of the interaction variable between CEO Power and Debt/Equity ratio in model 3b, the explanatory power of the model increased from 18.41% to 33.36%. CEO power remains positively related to ROE and statistically significant (β=.0497271 *; p <0.05). The interaction term between Debt/Equity and CEO power, (c.CEOPOW_C#c.LNDERATIO_C) is positively related to ROE and is statistically significant (β=.1033959*; p<0.05) while Debt/Equity ratio maintains a negative and statistically significant relationship (β= -.1511873 *; p<0.05). Sales-growth, CEO-Power, and regression constant, remained positively related to ROE and statistically significant. This clearly show positive statistically significant partial moderating effect of CEO power on the relationship between debt/Equity Ratio and ROE. The null-hypothesis "H05b: CEO Power has no significant conditional effect on the relationship between debt-equity ratio and firm financial performance" is therefore rejected.

The relationship between Debt/Equity ratio and ROE was tested in models 2b, 2d, 3b, 3d 4b and 4d in Tables 4.12, 4.13, and 4.14. Debt equity ratio is consistently presented negative and statistically significant relationship to ROE (-β, p<0.05). The interaction term between Debt/Equity ratio and CEO Power (CEOPOE#LNDERATIO) as well as CEO Power had statistically significant positive relationship (+β, p<0.05) with ROE. To probe the conditional effect of CEO power on the relation between Debt/Equity ratio and ROE in model 4b, and 4d margins

predictive analysis was performed and the results presented in figure 4.2.1 and 4.2.2 respectively.

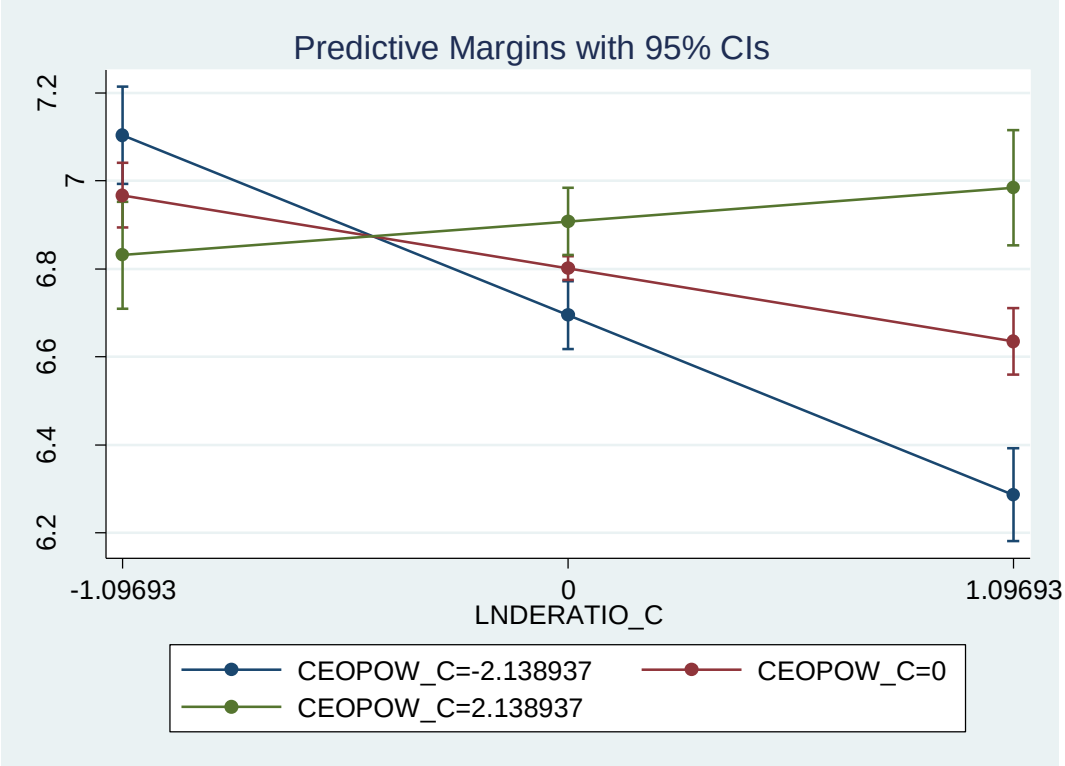

Figure 4.3.1: LNROE/LNDERATIO, CEOPOWER Partial Regression Contingency Graph

Source: Research Data, 2021

From Figure 4.3.1, it can be observed that CEO power of' 0', coinciding with the mean CEO power in the data, preserves the negative relationship between LNDERATIO and LNROE. An Increase in CEOPOW by one Standard deviation, attenuates the negative relationship, whiles a decrease in CEOPOW by one standard deviation, reversed the relationship to a positive relationship.

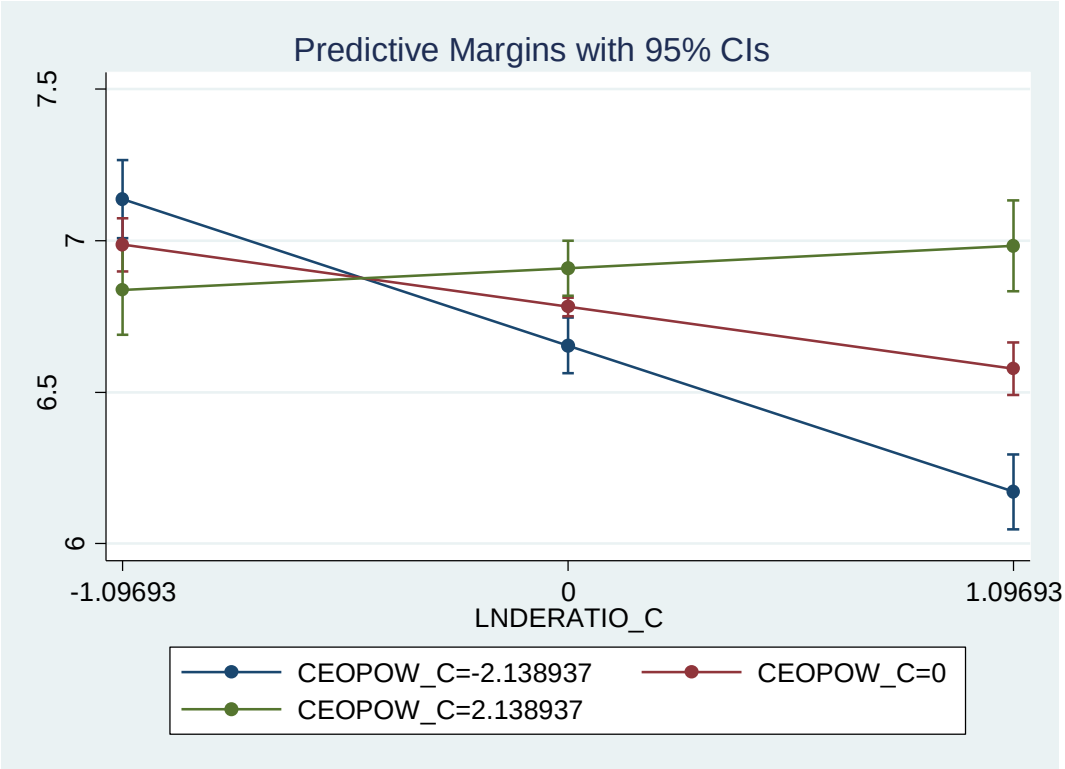

Figure 4.3.2: LNROE/LNDERATIO, CEOPOWER Joint Regression Contingency Graph

Source: Research Data, 2021

From figure 4.3.2, it can be observed that even when all leverage parameters are considered debt/equity ratio has a negative relationship to ROE, and an increase in CEO power by one standard deviation attenuates the negative relationship

The study therefore concludes that CEO Power significantly moderates the relationship between Debt Equity ratio and ROE.

CEO power was found to partially moderate the relationship between Debt/Equity ratio and ROE(Hayes, 2017) in a statistically significant way.

The conditional effect of CEO power on the relationship between debt/Equity ratio and ROE is presented in Figure 4.2.1 and 4.2.2. The statistically significant findings imply that higher levels of CEO power above a theoretical optimum including the current NSE mean CEO power of index 6.2 has negative effect on the relationship

between debt/equity ratio and ROE compared to lower levels of CEO power on a power index scale from 0 to 14. These findings are consistent with agency theory(Fama, 1980; Fama & Jensen, 1983; Gormley & Matsa, 2016) and inconsistent with upper echelon theory by Hambrick and Mason(1984). This finding shows the optimal CEO Power index to be below the current mean CEO Power index at the NSE. Further, it shows that higher levels of CEO Power above the optimum to be undesirable since it depresses Optimum Debt/Equity ratio and ROE.

4.4.3.2.3 Conditional Effect of CEO Power on the relationship between Interest cover and ROE

The test was performed based on model 4c and the summary results are presented in Table 4.15 model 4c.

From Table 4.15 model 4c the interaction term between CEO power and Interest cover, (c.CEOPOW_C#c.LNINTCOVER_C), marginally increases the explanatory power of the model from 0.0729% in model 3c to 0.0740%. The interaction term has negative but statistically insignificant relationship with ROE (β = -.0079554; $p>0.05$). Only Sales growth, CEO Power, and regression constant were statistically significant. This clearly shows CEO Power to partially negatively but statistically insignificantly moderate the relationship between interest cover and ROE. The null-hypothesis "H05c: CEO power has no significant moderating effect on the relationship between interest coverage and firm financial performance" is therefore accepted.

From Table 4.12, 4.13, and 4.14, in models 2c, 2d, 3c, 3d, 4c, and 4d LNINTCOVER has a consistently negative but statistically insignificant relationship with ROE (-β, $p>0.05$). Introduction of the interaction term between Interest cover and CEO Power in model 4c results in +0.0011 impact on R^2 and the interaction term has negative

insignificant relationship (β= -.0079554; p = 0.538) with ROE. Similarly in model 4d, (β= -.0062705; p>0.05). CEO Power retains a statistically significant positive relationship with ROE. To investigate the moderating effect of CEO power on the relationship between Interest cover and ROE, margins predictive analysis was performed and results for model 4c and 4d are presented in Figure 4.3.1 and 4.3.2 respectively.

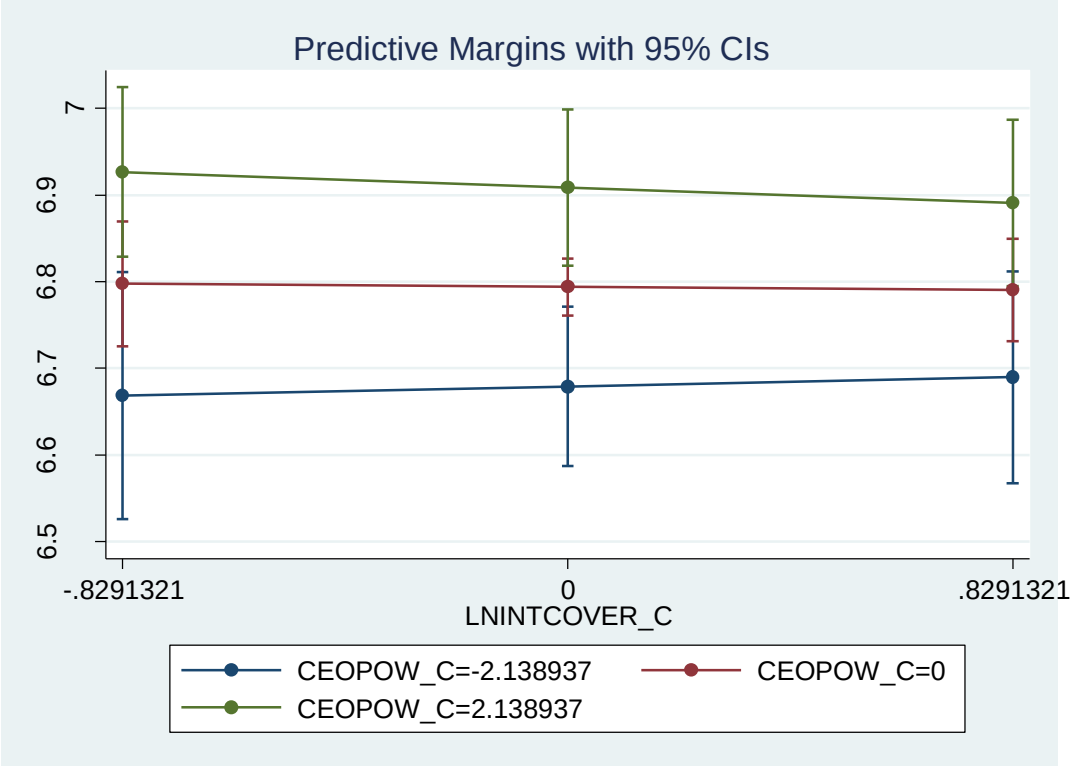

Figure 4.4.1 LNROE/LNINTCOVER, CEOPOW Partial Regression Contingency GRAPH

Source: Research Data, 2021

From Figure 4.4.1 it can be observed that higher CEO Power marginally attenuates negative gradient of LNINTCOVER/LNROE graph compared to lower Levels of CEO Power which reverses the negative gradient to marginally positive.

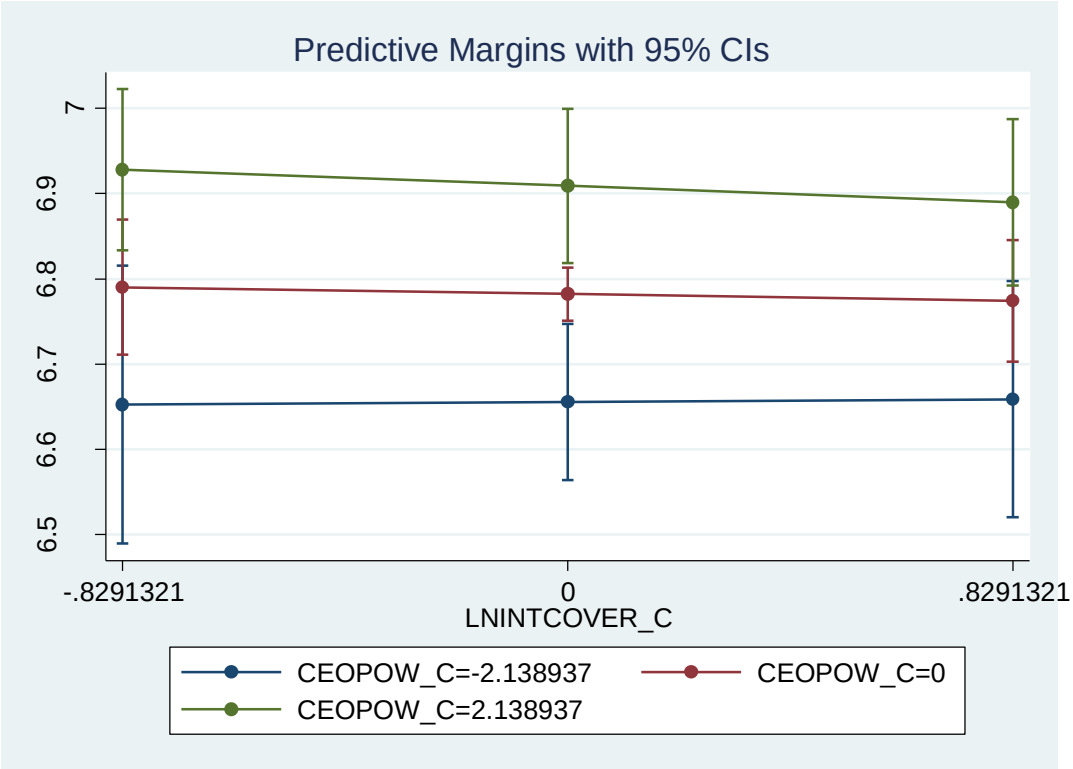

Figure 4.4.2 LNROE/LNINTCOVER, CEOPOW Joint Regression Contingency GRAPH

Source: Research Data, 2021

From figure 4.4.2 above it can similarly be observed that higher levels of CEO Power attenuates the negative relationship between Interest cover and ROE while lower level reverses the negative relationship to positive.

The observations prompts a conclusion that although statistically insignificant, increasing CEO Power attenuates the negative relationship between Interest coverage ratio and ROE while lower levels reverses the relationship to positive.

CEO power was found to partially moderate the relationship between Interest coverage and ROE but in a statistically insignificant way. The interaction variable, though not statistically significant, accelerates the negative effect of interest coverage on ROE. From Figure 4.3.1 and 4.3.2 increasing CEO power attenuates the negative effect of Interest cover on ROE and reducing CEO power dampens the negative

effects of interest coverage ratio on ROE (Hayes, 2017). The finding, though statistically insignificant, support upper echelon theory by Hambrick and Mason (1984) partially, and agency theory partially, by providing justification for the provision of limited discretionary powers to management to at least dampen the negative effects of Interest coverage ratio on ROE but not sufficient to attenuate the negative effects.

4.4.3.2.4 Moderating Effect of CEO Power

The moderating effect of CEO Power on the joint relationship between Debt Ratio, Debt/Equity Ratio, Interest Cover and ROE was tested and the summary results presented on Table 4.15 model 4d. The model had higher explanatory power of the variance in ROE than any other partial models (R^2=0.3894). In this model and consistently in all other models, sales growth and regression constant were statistically significant. Similarly Debt/Equity ratio and the interaction term between CEO Power and Debt/Equity Ratio had negative and positive statistically significant relationship with ROE respectively (β= -.1868542; .1184322). CEO Power as in all other models, also displayed positive statistically significant relationship with ROE (β=.0596112; $p<0.05$), while other remaining variables were not statistically significant.

4.5 Summary of the Study Hypotheses Test Results

This study adopted partial regression procedure for the various tests in models 1, 2a, 2b, 2c 3a, 3b, 3c, 4a, 4b, and 4c based on the conceptual model of the study. The joint regression models 2d, 3d, and 4d were used for confirmation of partial regression model findings. The moderated final regression in model 4d explains 38.94% of the observed variations in ROE based on the combined sample of 38 listed firms and 380

firm years. The study hypotheses were tested based on the test results in Table 4.13, Table 4.14, and Table 4.15 models 2, 3, and 4 4d respectively. The interactions were further tested through margins predictive analysis. A summary of the test results are provided in Table 4.16 below.

Table 4.16 Summary of Hypothesis Test Results

Hypothesis	Decision Criteria	Results	Decision
Ho1 Debt Ratio has no statistically significant effect on firm financial performance	$\beta \neq 0$ t, $p \leq 0.05$	β= .0061883, t = 0.31 p= 0.755	Accept
Ho2 Debt/Equity Ratio has no statistically significant effect on firm financial performance	$\beta \neq 0$ t, $p \leq 0.05$	β= -.2345286, t = -6.84 p=0.000	Reject
Ho3 Interest Cover has no statistically significant effect on firm financial performance	$\beta \neq 0$ t, $p \leq 0.05$	β= -.021651, t = -0.97, p= 0.335	Accept
Ho4 CEO Power has no statistically significant effect on firm financial performance	$\beta \neq 0$ t, $p \leq 0.05$	β= .0603111, t = 2.67, p= 0.008	Reject
Ho5a CEO Power has no significant moderating effect on the relationship between debt ratio and firm financial performance	ΔR^2, $\beta \neq 0$ $p \leq 0.05$	ΔR^2 = +0.0086; β= .0140918 p= 0.106	Accept
Ho5b CEO Power has no significant moderating effect on the relationship between debt/Equity ratio and firm financial performance	ΔR^2, $\beta \neq 0$ $p \leq 0.05$	ΔR^2 = +0.1495; β= .1033959, p= 0.000	Reject
Ho5c CEO Power has no significant moderating effect on the relationship between Interest Cover and firm financial performance	ΔR^2, $\beta \neq 0$ $p \leq 0.05$	ΔR^2 = +0.0011; β= -.0079554 p= 0.538	Accept

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The general objective of this study was to assess the moderating effect of CEO power on the relationship between financial leverage and financial performance of listed companies at the Nairobi Securities Exchange, Kenya. The objective, refined into seven specific objectives subject to covariates firm size, sales growth and firm operational efficiency were: to assess the effect of debt ratio, debt-equity ratio, interest coverage and CEO Power on firm financial performance and to ascertain the moderating effect of CEO power on the relationship between debt-equity ratio, debt ratio, interest coverage and firm financial performance. This chapter presents summary of the research findings, conclusions and recommendations. It also highlights areas where the researcher is of the view that further research is necessary.

5.1 Summary of Research Findings

5.1.1 Effect of Control Variables on ROE

The effect of control variables: sales growth, firm size, and firm operational efficiency on ROE were tested and found to have a positive relationship with ROE. Only sales growth showed statistically significant relationship with ROE. Together, the control variables explained 5.07% of the variations observed in ROE.

5.1.2 Effect of Debt Ratio on Firm Financial Performance

Debt ratio was measured as long-term debt divided by total assets. Using fixed effects regression model and partial regression, this study found that when only debt ratio is considered in the regression model it shows a negative statistically insignificant relation to ROE but when other leverage measures and moderation effects are

considered, debt ratio has a statistically insignificant positive effect on ROE. This study therefore finds a positive statistically insignificant relationship between debt ratio and ROE.

5.1.3 Effect of Debt/Equity Ratio on Firm Financial Performance

Debt/equity ratio was measured as total debt divided by total shareholders' equity. The study found a statistically significant inverse relationship with ROE from model 2b through to model 4d. This implied that no matter the power configuration for CEO, nor the inclusion of other variables in the analytic model, debt/equity ratio had a negative statistically significant effect on firm financial performance measured as ROE.

5.1.4 Effect of Interest Coverage Ratio on Firm Financial Performance

In this study Interest cover was measured as EBITDA/(Interest cost+1). The effect of interest cover on ROE was tested in model 2c through to 4d and the results showed a negative statistically insignificant relationship with ROE.

5.1.5 Effect of CEO Power on Firm Financial Performance

The effect of CEO power on ROE was tested in model 3 through to 4d and the outcome presented consistently a positive and statistically significant relationship with ROE. The study therefore found a positive and statistically significant relationship between CEO power and firm financial performance measured as ROE.

5.1.6 Conditional Effect of CEO Power on the Relationship between Debt Ratio and ROE

The study found partial but insignificant moderating effect of CEO power on the relationship between Debt ratio and ROE. The introduction of the interaction term

between CEO power and Debt ratio in model 4a in table 4.13 marginally increased the explanatory power of the model given by R^2, and model 4a, and 4d show the interaction term coefficient to be insignificant Figure 4.1 and 4.1.2 suggests CEO power has marginal positive moderating effect on the relationship between debt ratio and ROE.

5.1.7 Conditional Effect of CEO Power on the Relationship between Debt /Equity Ratio and ROE

The study found a partial statistically significant moderating effect of CEO power on the relationship between Debt/Equity ratio and ROE. The introduction of the interaction term between CEO power and Debt/Equity ratio significantly increased the explanatory power of the model given by R^2 from 0.1841 to 0.3336. The interaction term had a positive and statistically significant relationship with ROE. Other variables such as CEO power, and Debt/Equity ratio were statistically significant and therefore CEO power partially moderates the relationship between Debt/Equity ratio and ROE(Hayes, 2017). Figure 4.2.1 and 4.2.2 confirmed the conditional effects indicating that CEO power higher than the mean attenuates negative effect while lower CEO power dampens the negative effects.

5.1.8 Conditional effect of CEO Power on the Relationship between Interest Cover and ROE

The study found CEO Power to partially moderate, the relationship between Interest cover and ROE but statistically insignificant. When the interaction term between CEO power and Interest cover was introduced in model 4c, the model's explanatory power marginally increased from 0.0729 to 0.0740. The interaction term between interest cover and CEO power had a statistically insignificant positive relationship

with ROE. This result indicates that CEO power partially moderates the relationship between Interest coverage and ROE(Hayes, 2017) but is statistically insignificant. That higher levels of CEO Power attenuates the negative effects of Interest cover on ROE and lower levels dampen the negative effects.

5.2 Conclusions of the Study

Based on the analysis of the research data, a number of logical conclusions can be drawn from the study findings:

5.2.1 Effect of Control Variables on Firm Financial Performance

Firm size, firm operational efficiency, and sales growth were hypothesized to positively affect ROE. This was tested, and while all had positive relationship with ROE, only sales growth had statistically significant relationship. This finding confirms economic theory of positive returns to scale, and the importance of economies of scale in profit generation. It also confirms the importance of efficiency and sales growth in profit generation.

The study concludes that sales growth is important for maximization of ROE at the NSE.

5.2.2 Effect of Debt Ratio on Firm Financial Performance

Based on the results from moderated models, this study concludes that debt ratio measured as long-term debt to total assets has a positive but statistically insignificant relationship with firm financial performance measured as ROE at 0.05 level of confidence.

The finding implies that increase in long-term debt may result in increase in ROE, investor confidence and satisfaction. It also implies that with regard to long-term debt, firms at NSE are operating below the theoretical optimum.

5.2.3 Effect of Debt/Equity Ratio on Firm Financial Performance

The effect of debt/equity ratio was tested at 0.05 and was found to have a negative and statistically significant relationship with ROE. The study therefore concluded that Debt/Equity ratio had a negative and statistically significant relationship with firm financial performance measured as ROE.

The finding implies that firms at NSE were operating above their optimal total debt capacity. The finding is consistent with dynamic trade off theory in capital market environment where adjustment costs are high and therefore may delay firms in adjusting to optimal leverage ratio(DeAngelo et al., 2011). It is also consistent with pecking order theory where information asymmetry in stock market encourages firms to prioritize use of external debt to fulfill financing requirements, using external equity only as a last resort (Myers & Majluf, 1984).

5.2.4 Effect of Interest Cover on Firm Financial Performance

The study tested the relationship between Interest cover and ROE and found a negative statistically insignificant relationship (β= -.044355, p= 0.171). The study therefore concludes that in this market, Interest coverage ratio has a negative statistically insignificant relationship with firm financial performance measured as ROE.

The finding implies that decrease in interest cover arising from increase in interest bearing long-term debt and related increase in total interest costs or increase in

interest rate, other factors remaining constant, may result in increase in ROE. The study therefore concludes that firms at NSE have on average sub-optimal use of long-term interest bearing debt.

5.2.5 Effect of CEO Power on Firm Financial Performance

This study measured CEO power as CEO Power Index based on structural and ownership power dimensions using publicly available information contained in annual reports of NSE listed companies. Its relationship with financial performance measured as ROE was tested using Fixed-effects regression model and found to be positive and statistically significant (β= .0514132 p= 0.003).

The study findings imply that provision of sufficient discretionary powers to CEOs can motivate superior financial performance

5.2.6 Conditional Effect of CEO Power on the Relationship between Debt Ration and Firm Financial Performance

The study found statistically insignificant partial moderating effect of CEO power on the relationship between Debt ratio and ROE(Hayes, 2017). The introduction of the interaction term between CEO power and Debt ratio in model 4a in table 4.13 changed explanatory power of the model given by R^2 from 19.48% to 21.05%. The interaction term however was statistically insignificant (β=.0054582, p=0.591). The conditional effect was supported in diagram 4.1.1 and 4.1.2 where higher CEO Power increases the positive relationship between Debt ratio and ROE.

The study findings imply that CEO power motivates financial performance consistent with upper echelon theory and that listed companies should at least allow discretionary powers to their CEOs to motivate superior ROE.

5.2.7 Conditional Effect of CEO Power on the Relationship between Debt/Equity Ratio and Firm Financial Performance

The study found a partial statistically significant moderating effect of CEO power on the relationship between Debt/Equity ratio and ROE. The introduction of the interaction term between CEO power and Debt/Equity ratio changed R^2 from 0.2105 to 0.3419. The interaction term coefficient was (β= .1019455; p= 0.000). The conditional effect is supported by Figure 4.2.1 and 4.2.2. which show that higher levels of CEO power has negative while lower levels has positive moderating effect on the relationship between Debt/Equity ratio and ROE.

The study findings imply that there exists a theoretical optimum CEO Power, beyond which CEO Power has negative moderating effect on ROE compared to lower levels on a power index scale from 0 to 14. This finding therefore supports the provision of managerial discretion to motivate financial performance up to the theoretical optimum and the restriction thereof beyond to no more than the theoretical optimum.

5.2.8 Conditional Effect of CEO Power on the Relationship between Interest Cover and Firm Financial Performance

The study found CEO Power to partially moderate the relationship between Interest cover and ROE. When the interaction term between CEO power and Interest cover was introduced in model 4c, the model's R^2 Marginally increased from 0.0729 to 0.0740, the interaction term however was statistically insignificant. The findings were corroborated in Figure 4.3.1 and 4.3.3 where increasing CEO Power was found, though not statistically significant, to attenuate the negative effect of interest cover on ROE and reduction thereof to dampen the negative effects.

The study finding implies that limited CEO power is desirable up-to a theoretical maximum in an effort to increase ROE, investor confidence and satisfaction but not sufficient to attenuate the negative effects.

5.3 Recommendations of the Study

Although management of a firm has responsibility to all its stakeholders and so far there is no agreement on which stakeholder has more legitimacy than others, its generally agreed that shareholders constitute an essential part of the stakeholders(Donaldson & Preston, 1995; Harrison & Wicks, 2013; Mitchell, Agle, & Wood, 1997) and therefore management must pay attention to their rights and interests. ROE is not only a shareholder right, but also the focal point of shareholder interest due to its impact on future shareholder cash-flows and its decline results in dissatisfaction of shareholders and loss of investor confidence. It is on this background that this study makes the following recommendations.

Firm size, firm operational efficiency, and sales growth were found to have positive relationship with ROE, with only sales growth showing statistically significant relationship. This imply that management should generally focus on all the three variables in an attempt to increase return on equity but may prioritize sales growth whenever it becomes necessary like where there is capital rationing.

This study found the use of long-term debt to be suboptimal and therefore recommends that, in an attempt to increase ROE, firm managers should where possible increase the level of long-term debt. This is also consistent with decreasing interest coverage ratio. This study therefore recommends to practicing managers, judicious increase in long-term, interest bearing debt, with a view to increasing ROE. This can be achieved through increase in long-term debt or coupled with decrease in

short-term debt. However, this must be judiciously implemented considering the debt capacity of each firm. The increase in long-term debt may require the use of innovative, disintermediation products to avoid high financial intermediation costs in Kenya.

The study also concluded that CEO power had a positive and statistically significant relationship with firm financial performance measured as ROE. The moderating effect of CEO Power on the relationship between Debt/Equity ratio, Debt ratio, and interest coverage ratio on one hand and return on equity on the other hand was also examined and while it was found to have partial and statistically insignificant moderating effect on the relationship between Debt Ratio, and Interest Coverage ratio on one hand and ROE on the other, it had statistically significant moderating effect on the relationship between Debt/Equity ratio and ROE. Further, higher CEO Power, more than a theoretical optimum, was found to attenuate the negative effects of Debt/Equity ratio, and Interest cover on ROE and lower levels, lower than the theoretical optimum, to dampen the negative effects. Given the positive effects (Adams et al., 2005; Hambrick & Mason, 1984) and the moderating effects on the relationship between leverage and ROE, this study recommends to BODs, delegation of at least some CEO power configuration to CEOs, considering the elements of the CEO Power index in this study and, to capital market regulators, CEO Power mandate, that does not exceed the theoretical optimum CEO power index.

5.4 Contribution of the Study

The study makes contribution in the following three areas:

Development of Corporate Governance policy: it recommends CEO Power mandate, provides empirical evidence on why CEO power should be regulated and suggests

ways of measuring CEO power other than CEO Dualism, and the range of CEO power that is conducive to furtherance of good corporate governance to assure some protection of shareholder rights: the right to reasonable return, investor satisfaction and confidence.

Management practice: by making recommendations to practicing firm managers to provide some minimal structural power to CEOs, and on the application of long-term debt so as to increase ROE for the benefit of Shareholders.

Theory confirmation and knowledge development: the study confirms the relevance of agency, upper echelon, dynamic trade off and pecking order theories. Further, it has extended the models by empirically demonstrating the significance of the conditional effect of CEO power in the theoretical models that relate Leverage with firm financial performance. It has also expanded knowledge by creating a tool for measuring CEO power: CEO Power Index.

5.5 Areas for Further Research

This study considered only CEO power derived from structural and share ownership sources. It did not consider personal sources of power such as expertise and prestige. The study therefore recommend that further research may be carried out either replicating this research but inclusive of these additional sources of power or exclusively using these sources of power.

Further, this study discovered a weak uptake of long-term interest bearing debt among participating companies at NSE. It therefore recommends that further research be carried out to determine factors influencing the uptake of long-term debt finance

among listed companies at NSE. The research may be expanded to include such factors as ROI, Interest rates, and ROA and other relevant factors.

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APPENDICES

Appendix 1: Data Collection Sheet

SERIAL No. ____

Company: ____

Units: _____

year$_{(j)}$ / data$_{(k)}$	proxy	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Structural Power	Board size										
	No of external directors										
	5%≤x≤30% Block holding										
	Institutional investors										
	CEO Tenure (years)										
Ownership power	Block shareholding ≥ 30%										
	No. of internals in Board										
	CEO Shareholding%										
Financial Leverage	**Total debt** (Sh. 000)										
	Total Assets (Sh. 000)										
	Total equity (Sh. 000)										
	Net Sales (Sh. 000)										
	Depreciation, impairment & Amortization										
	Taxation										
	Interest charge										
	PAT										
	LTD										
	Preference shares										
	No. of ordinary shares'000'										
	Share market price										

NOTES:

Appendix 2: Research Work Plan

Activity	**2021**	**2021**		**2021**					
	February	March	June	July	August	Sept.	Oct	Nov	Dec
Approvals	*								
Corrections		*							
Data Collection			*						
Data Analysis			*						
First Thesis Draft				*					
Revised Thesis Draft				*					
Final Thesis Draft					*				
Draft Manuscript for Publication					*				
Revised Manuscript for Publication						*			

Appendix 3: Research Budget

SR No.	Item	Quantity	Unit Price (Ksh.)	Total Amount Ksh.	Sub Total Ksh.
1	Photocopying and Printing:				
	Data Collection Sheets	400	10	4,000	
	1st draft report	1200	10	12,000	
	Revised draft report	200	10	2,000	
	Final draft report	1200	10	12,000	30,000
2	Binding	8	200	3,600	1,600
3	Publishing expenses	2 papers	5000	10,000	10,000
4	Data Collection fees, charges assistants, and other expenses	50,000		50000	50000
	Grand Total				91,600

Appendix 4: List of Firms Quoted at the NSE 31/12/2019

SECURITIES	ISIN CODE	TRADING SYMBOL
AGRICULTURAL		
Eaagads Ltd Ord 1.25 AIM	KE0000000208	EGAD
Kakuzi Plc Ord.5.00	KE0000000281	KUKZ
Kapchorua Tea Co. Ltd Ord Ord 5.00 AIM	KE4000001760	KAPC
The Limuru Tea Co. Plc Ord 20.00AIMS	KE0000000356	LIMT
Sasini Plc Ord 1.00	KE0000000430	SASN
Williamson Tea Kenya Ltd Ord 5.00 AIM	KE0000000505	WTK
6		
AUTOMOBILES & ACCESSORIES		
Car & General (K) Ltd Ord 5.00	KE0000000109	CGEN
1		
BANKING		
Barclays Bank of Kenya Ltd Ord 0.50	KE0000000067	BBK
BK Group Plc Ord 0.80	KE5000008986	BKG
Diamond Trust Bank Kenya Ltd Ord 4.00	KE0000000158	DTK
Equity Group Holdings Plc Ord 0.50	KE0000000554	EQTY
HF Group Plc Ord 5.00	KE0000000240	HFCK
I&M Holdings Plc Ord 1.00	KE0000000125	IMH
KCB Group Plc Ord 1.00	KE0000000315	KCB
National Bank of Kenya Ltd Ord 5.00	KE0000000398	NBK
NIC Group Plc Ord 5.00	KE0000000406	NCBA
Stanbic Holdings Plc ord.5.00	KE0000000091	SBIC
Standard Chartered Bank Kenya Ltd Ord 5.00	KE0000000448	SCBK
The Co-operative Bank of Kenya Ltd Ord 1.00	KE1000001568	COOP
12		
COMMERCIAL AND SERVICES		
Deacons (East Africa) Plc Ord 2.50AIMS	KE5000005438	DCON
Eveready East Africa Ltd Ord.1.00	KE0000000588	EVRD
Express Kenya Ltd Ord 5.00 AIMS	KE0000000224	XPRS
Kenya Airways Ltd Ord 5.00	KE0000000307	KQ
Longhorn Publishers Plc Ord 1.00AIMS	KE2000002275	LKL
Nairobi Business Ventures Ltd Ord. 1.00 GEMS	KE5000000090	NBV
Nation Media Group Ltd Ord. 2.50	KE0000000380	NMG
Sameer Africa Plc Ord 5.00	KE0000000232	SMER
Standard Group Plc Ord 5.00	KE0000000455	SGL
TPS Eastern Africa Ltd Ord 1.00	KE0000000539	TPSE
Uchumi Supermarket Plc Ord 5.00	KE0000000489	UCHM
WPP Scangroup Plc Ord 1.00	KE0000000562	SCAN
12 31		
CONSTRUCTION & ALLIED		
ARM Cement Plc Ord 1.00	KE0000000034	ARM

Bamburi Cement Ltd Ord 5.00	KE0000000059	BAMB
Crown Paints Kenya Plc Ord 5.00	KE0000000141	CRWN
E.A.Cables Ltd Ord 0.50	KE0000000174	CABL
E.A.Portland Cement Co. Ltd Ord 5.00	KE0000000190	PORT
5 36		
ENERGY & PETROLEUM		
KenGen Co. Plc Ord. 2.50	KE0000000547	KEGN
Kenya Power & Lighting Co Ltd Ord 2.50	KE0000000349	KPLC
Kenya Power & Lighting Co Ltd 4%	KE4000001877	KPLC.P0004
Kenya Power & Lighting Co Ltd 7%	KE4000002982	KPLC.P0007
Total Kenya Ltd Ord 5.00	KE0000000463	TOTL
Umeme Ltd Ord 0.50	KE2000005815	UMME
4 40		
INSURANCE		
Britam Holdings Plc Ord 0.10	KE2000002192	BRIT
CIC Insurance Group Ltd ord.1.00	KE2000002317	CIC
Jubilee Holdings Ltd Ord 5.00	KE0000000273	JUB
Kenya Re Insurance Corporation Ltd Ord 2.50	KE0000000604	KNRE
Liberty Kenya Holdings Ltd Ord.1.00	KE2000002168	LBTY
Sanlam Kenya Plc Ord 5.00	KE0000000414	SLAM
6 46		
INVESTMENT		
Centum Investment Co Plc Ord 0.50	KE0000000265	CTUM
Home Afrika Ltd Ord 1.00	KE2000007258	HAFR
Kurwitu Ventures Ltd Ord 100.00	KE4000001216	KURV
Olympia Capital Holdings ltd Ord 5.00	KE0000000166	OCH
Trans-Century Plc Ord 0.50AIMS	KE2000002184	TCL
5 51		
INVESTMENT SERVICES		
Nairobi Securities Exchange Plc Ord 4.00	KE3000009674	NSE
1 52		
MANUFACTURING & ALLIED		
B.O.C Kenya Plc Ord 5.00	KE0000000042	BOC
British American Tobacco Kenya Plc Ord 10.00	KE0000000075	BAT
Carbacid Investments Ltd Ord 1.00	KE0000000117	CARB
East African Breweries Ltd Ord 2.00	KE0000000216	EABL
Flame Tree Group Holdings Ltd Ord 0.825	KE4000001323	FTGH
Kenya Orchards Ltd Ord 5.00 AIM	KE0000000331	ORCH
Mumias Sugar Co. Ltd Ord 2.00	KE0000000372	MSC
Unga Group Ltd Ord 5.00	KE0000000497	UNGA
8 60		
TELECOMMUNICATION		
Safaricom Plc Ord 0.05	KE1000001402	SCOM

REAL ESTATE INVESTMENT TRUST		
STANLIB FAHARI I-REIT	KE5000003656	FAHR
1 61		
EXCHANGE TRADED FUNDS		
NEW GOLD ETF	KE5000007095	GLD

Appendix 5: Companies Excluded From the Research Study

INDUSTRY	COMPANY	REASON FOR OMMISSION
AGRICULTURE	Eaagads ltd	Listed 2 years after 2010/Financial statements not available
	Kapchorua Tea Ltd	Listed 2 years after 2010/Financial statements not available
	Limuru Tea Co ltd	Listed 2 years after 2010/Financial statements not available
	Sasini Plc	Listed 2 years after 2010/Financial statements not available
	Car & Genral (K) ltd	
BANKING	BK Group plc	Listed 2 years after 2010/Financial statements not available
	Standard Chartered Bank (k) ltd	
COMMERCIAL & SERVICES	Deacona East Africa PLC	
	Express (K) ltd	
	Kenya Airways LTD	
	LongHorn Publishers ltd	
	Nairobi Business Ventures ltd	
	Sameer Africa ltd	
	Uchumi Super Market plc	
ENERGY & PETROLEUM	Umeme ltd	Listed 2 years after 2010/Financial statements not available
INVESTMENT	Sanlam Kenya Ltd	Listed 2 years after 2010/Financial statements not available
	Home Africa Ltd	Listed 2 years after 2010/Financial statements not available
	Kurwitu Ventures ltd	Listed 2 years after 2010/Financial statements not available
	OlympiaCapital Holdings	Listed 2 years after 2010/Financial statements not available
INVESTMENT SERVICES	Nairobi Securities Exchange	
MANUFACTURING & ALLIED	Carbacid Investments ltd	
	Flame Tree Group	Listed more than 2 years after 2010/Financial statements not available
	Kenya Orchards	
REIT	Stanlib Fahari REITS	Listed 2 years after 2010/Financial statements not available
ETF	New Gold ETF	Listed 2 years after 2010/Financial statements not available
INDUSTRY	25 out of target 63	REASON FOR OMMISSION

Appendix 6: Summary of Reviewed Literature and Research Gap

Author	Study	Findings	Gap
Jensen and Meckling(1976)	Theory of The Firm: Managerial Behavior, Agency Costs and Ownership Structure	A theory of ownership structure of the firm is developed. Agency cost and its relationship to separation and control, who bears the cost and why and its optimality is investigated.	Relationship between leverage and firm performance not addressed. Conflict in debt preposition
Fama and Jensen(1983a)	Separation of Ownership and Control	The form of organization that survives is one that delivers the product demanded by customers at the lowest price while covering costs in a free market. The paper explains the survival of organizations where separation of risk bearing and decision functions survives because of the benefit of specialization and effective common control of agency problem through separation of risk bearing from decision functions. Further the decision function hierarchically separates ratification and monitoring from initiation and implementation.	Relationship between leverage and firm performance not addressed. Conflicting preposition on debt
Fama and Jensen(1983b)	Agency Problems and Residual Claims	The form of organization that survives is one that delivers the product demanded by customers at the lowest price while covering costs in a free market. Central to the survival of organization form is control of agency problem. Special features of residual claims in various organization forms are approaches for controlling special agency problems.	Relationship between leverage and firm performance not addressed. Conflict in preposition on debt
Fama(1980)	Agency problem and the theory of the firm.	The paper attempts to explain how separation of security ownership and control typical of large corporations results in efficient economic organization. While the separation provides efficient risk distribution, management teams are subject to disciplinary forces from	Relationship between leverage and firm performance not addressed. Role of directors in aligning management goals with shareholder goals are not considered

		product market competition and managerial labor market.	
Jensen(1986)	Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers	Corporate managers are agents of shareholders with inherent conflict of interest. Cash payments to shareholders is fraught with inherent conflict of interest. Theory explaining the benefit of debt in reducing agency costs is explained.	Relationship between leverage and firm performance not addressed. The optimality of debt levels is not considered
Dias and Ioannou(1995)	Debt Capacity and Optimal Capital Structure for Privately-Financed Infrastructure Projects	The amount of debt that maximizes investor return on equity is less than the projects debt capacity and the amount that maximizes the projects NPV is even lower.	The role of management in determining the debt level is not considered
Turnbull (1979)	Debt Capacity	Solution for debt equity ratio is derived given tax deductibility of interest cost and existence of bankruptcy costs. Debt capacity is determined as less than the market value of the firm and the optimal debt for a firm maximizing firm value is less than the debt capacity	No consideration is given to the role of managerial power in determining actual debt level
Shleifer and Vishny(1992)	Liquidation Values and Debt Capacity: A Market Equilibrium Approach	Determinants of liquidation value of assets is explored. Liquidation values are often below value in best use leading to ex ante significant private cost of leverage due to alternative users. This explains current and variations in debt capacity.	The role of managerial power in determining actual debt finance level is not considered.
Harris and Raviv(1991)	The Theory of Capital Structure	A meta-analysis of capital structure theories is performed. Results of analysis are compared against available evidence.	The role of managerial power was not considered
Barclay, Smith and Morellec(2006)	On the Debt Capacity of Growth Options	If a firm's value increases with additional growth options, both the firm's leverage and optimal debt level declines	The role of managerial power is not considered
John and John(1993)	Top-Management Compensation and Capital Structure	The relationship between top management compensation and the design and mix of external claims are analyzed. Optimal management compensation structure depends not only on agency conflict with shareholders but also conflicts from other contracts for which the firm serves as a nexus of contracts. Analysis of top management	The role of leverage ratio in determining level of debt is not considered

		compensation and a mix of various external claims are analyzed.	
Kochar(1997)	Strategic Assets, Capital Structure, and Firm Performance	Strategic assets confer competitive advantage. Financial competency is requisite to extract economic rents from these assets. The nature of strategic assets dictate equity financing while debt finance for others. Debt and equity finance are governance structures tied to the nature of assets finance. Inappropriate governance results in suboptimal performance.	The role of managerial power in determining debt level is not considered
Rampini and Viswanathan(2010)	Collateral, Risk Management, and the Distribution of Debt Capacity	Firm's debt capacity is limited by the collateral value of its assets. Financial flexibility risk is managed by creation of debt capacity slack resulting in firms operating below maximum debt capacity. Firms with growth opportunities but limited collateralizable assets do not maintain debt capacity slack due to opportunity cost. Such firms may not be able to take investment opportunities and may downsize when cash flows are low.	The role of managerial power in determining actual debt level is not considered
Essen, Otten and Carberry(2012)	Assessing Managerial Power Theory: A Meta-Analytic Approach to Understanding the Determinants of CEO Compensation	Evidence in support of managerial power theory for managerial compensation remains inconclusive. A meta-analysis of indicators of managerial power and levels of CEO compensation and CEO pay-performance sensitivity is analyzed. MPT predicts cash and total pay but is unreliable in predicting pay-performance sensitivity.	Leverage-debt factor in firm performance is not addressed
Tjosvold and Sun(2006)	Effects of power concepts and employee performance on managers' empowering	Employee empowerment efforts are hampered by traditional view of power as limited and useful for overcoming resistance. Cooperative goals require the use of expandable power and it is reinforced by high performance of subordinates.	The relationship between executive power and performance, and executive power and leverage is not examined
Omollo, Muturi and Wanjare(2018)	Effect of Debt Financing Options on Financial Performance of Firms Listed at the Nairobi Securities	Long-term, short-term and total debt have negative and statistically significant effect on return on assets but no significant effect on returns on equity	Effect of managerial power on the relationship between leverage and performance were not considered.

	Exchange, Kenya		
Martis(2013)	Capital Structure and Firm's Financial Performance An Empirical Analysis of the S&P500	Negative correlation between ROA and Leverage while no evidence of any relation between leverage and ROE. Short-term and long-term debt have significant negative effect on Tobin's Q	Effect of managerial power on the relationship between leverage and performance were not considered.
McConnell and Servaes (1994)	Equity ownership and the two faces of debt	This paper empirically investigated the relationship between equity ownership, leverage and corporate value. It concluded that for high growth firms, leverage is negatively correlated to corporate value; for low-growth firms leverage is positively correlated to firm value; allocation of equity ownership to insiders, block holders, institutions, and atomistic outsiders is more significant among low growth firms compared to high growth firms; debt policy and equity ownership policy matter depending on the growth opportunities of the enterprise	Effect of alternative sources of managerial power on the relationship between debt capacity, managerial power and firm performance were not considered, moreover, the research was done in developed capital market environment.
Abeywardhana(2016)	Impact of Capital Structure on Firm Performance: Evidence from Manufacturing Sector SMEs in UK	There is a significant negative relationship between leverage and firm performance (ROA, ROE) among UK manufacturing SMEs. Strong negative relationship between liquidity and firm performance, highly positive relationship between size and firm performance	Only one factor: size, others were not considered in the relationship between debt capacity, leverage, and firm performance. Moreover, the research is based in developed capital market environment
Yazdanfar and Öhman(2015)	Debt financing and firm performance: an empirical study based on Swedish data	Confirms that debt ratios in terms of trade credit, short-term debt, and long-term debt are negatively correlated to firm performance in terms of profitability. High debt ratio increases agency cost of debt, risk of loss of control resulting greater use of equity among SMEs	Effect of managerial power, on the relationship between debt finance and firm performance were not considered. Moreover the study was based on developed capital market environment
Muhammad, Shah, Islam (2014)	The Impact of Capital Structure on Firm Performance: Evidence from Pakistan	Observed a strong negative relation between firm performance (NPM, GPM, ROA, ROE) and debt to asset ratio; a strong positive relation between debt to equity and firm performance (NPM, GPM, ROA, ROE)	The effect of managerial power were not considered in this study.
Leon(2013)	The impact of Capital Structure on Financial Performance of the listed manufacturing firms in Sri	Panel data for 30 manufacturing public limited companies over five years were observed to present negative relationship between capital structure (Long-term debt/total assets and total debt / total assets ratio)	Effect of managerial power were not considered. Moreover the study was biased to manufacturing only.

	Lanka	and performance (ROE). ROA did not show significant relationship	
Fosu(2013)	Capital Structure, Product Market Competition and Firm Performance: Evidence from South Africa.	Using panel data of 257 South African firms concludes that leverage has a positive and significant effect on firm performance. Further, product market competition enhances leverage effect on performance.	Effect of managerial power were not considered.
Salamba(2015)	Impact of Capital Structure on Performance of SMEs in Tanzania: A Case of SMEs in Dodoma Municipality	The study concluded that capital structure had a negative impact on SME profitability but positive and significant effect on liquidity	Effect of managerial power on the relationship between leverage and firm performance was not considered
Masavi, Kiweu and Kinyili (2017)	Capital Structure and Financial Performance of Agricultural Companies Listed In Nairobi Securities Exchange, Kenya	The study aimed to determine the influence of capital structure on firm performance. Longitudinal research design was adopted for listed agricultural companies. A positive relationship between debt ratio and ROA while a negative relationship with ROE was observed.	Effect of managerial power on the relationship between leverage and firm performance was not considered
Naz and Naqvi(2016)	Financial Performance of Firms: Evidence From Pakistan Cement Industry	Financial performance indicates how well a firm is utilizing resources to create shareholder wealth and profit. All parameters commonly used to measure performance positively relate to ROI except leverage.	Effect of managerial power on the relationship between leverage and firm performance was not considered
Vedran and Luo(2012)	Capital Structure and Firm Performance in the Financial Sector: Evidence from Australia	Relationship between capital structure and firm performance of authorized deposit taking institutions is investigated. At relatively low levels of debt, increase in debt leads to increased profit efficiency hence superior bank performance. At relatively high levels of leverage increased debt leads to decreased profit efficiency and bank performance. A significant and robust quadratic relationship between capital structure and performance is determined.	Effect of managerial power on the relationship between leverage and firm performance was not considered
Narang (2018)	Impact of capital structure on firm performance: A study of listed firms on national stock exchange	The study concluded that capital structure(Long-term debt to total assets, short-term debt to total assets and total debt to total assets ratio) is positively related to firm performance(ROA, ROE, EPS) among listed companies in India	Effect of managerial power on the relationship between leverage and firm performance was not considered

Schulz(2017)	The Impact of Capital Structure on Firm Performance: an Investigation of Dutch Unlisted SMEs	It was observed that ROA was significant and negatively related to long -debt to total assets, short-term debt to total assets and debt to equity ratio, but the results were mixed for ROCE	Effect of managerial power on the relationship between leverage and firm performance was not considered
Dieter and Philipps(2014)	How Much Is Too Much? Debt Capacity and Financial Flexibility	Firms with high unused debt capacity compared to those with exhausted, realize a large fraction of their investment opportunity set, and borrow more often, in larger volumes. Firms with exhausted debt capacity repay their debt when surplus is realized or issue equity to restore debt capacity.	Effect of managerial power on the relationship between leverage and firm performance was not considered
Martis and Bremen(2013)	Capital Structure and Firm's Financial Performance An Empirical Analysis of the S&P500	The paper analyzes determinants of capital structure, and the impact of capital structure on firm performance. A negative relationship between capital structure and return on assets was established. No significant relationship between leverage and ROE was established,	Effect of managerial power on the relationship between leverage and firm performance was not considered
Nwude et al (2016)	The Impact of Debt Structure on Firm Performance: Empirical Evidence from Nigerian Quoted Firms	Using 12 year panel data from 43 listed Nigerian firms and pooled, fixed and random effects regression estimates, the study showed negative and statistically significant effect of capital structure on firm performance thereby supporting pecking order theory.	Effect of managerial power on the relationship between leverage and firm performance was not considered
Zeitun and Tian (2007)	Capital Structure and Corporate Performance: Evidence from Jordan	Using panel data of 167 Jordanian companies, the effect of capital structure and external shocks on firm performance is investigated. A significantly negative effect on accounting and market firm performance measures was established. Significantly higher debt than optimal was attributed to agency conflict. Short-term debt to total assets had a positive effect on market performance supporting Myers (1977) relation between growth opportunities, short-term debt, and profitability. Shocks could have positive or negative effect.	Effect of managerial power on the relationship between leverage and firm performance was not considered
Salim and Yadav(2012)	Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies	Using seven year panel data from 237 Malaysian listed companies, the study established a negative relationship between capital structure measured by long term debt, short term debt, and total debt and firm performance	Effect of managerial power on the relationship between leverage and firm performance was not considered

		measured by ROA, ROE, EPS. On the other hand there was a positive relationship between growth and performance in all economic sectors	
Yan(2013)	An Analysis of the Factors Affecting Debt Financing Structure --Empirical Evidence from Chinese Listed Companies	Company size, growth opportunities, fixed assets ratio and free cash-flow have significant effect on debt financing source and maturity structure.	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Lemmon and Zender (2009)	Debt capacity and tests of capital structure theories	In the absence of debt capacity concerns, external debt is preferred to equity financing. Concerns over debt capacity results in the use of external equity finance	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Kayo and Kimura(2010)	Hierarchical Determinants of Capital Structure	The influence of time, firm, industry and country level determinants of capital structure is analyzed. It's established that time and firm level factors explain 78% of firm leverage.	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Olakunle and Oni (2014)	Assessing the impact of asset tangibility on capital structure choice for listed firms in Nigeria	Positive non-statistically significant correlation between asset tangibility and leverage was observed	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Nyamita(2014)	Factors influencing debt financing decisions of corporations – theoretical and empirical literature review	Debt financing is influenced by either macroeconomic or firm specific factors. Empirical findings show either positive or negative correlation between debt financing and firm specific factors	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Jóźwiak, Marszałek, and, Sekuła(2015)	Determinants of Debt-Equity Choice – Evidence From Poland	Positive relationship between growth prospects and debt level	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Acaravci (2015)	The Determinants of Capital Structure: Evidence from the Turkish Manufacturing Sector	The study concluded there are significant relationships between growth opportunities, size, profitability, tangibility and leverage (book value of total debt / total assets) variables. Growth opportunities effect on capital structure support tradeoff theory, while size, tangibility and profitability support pecking order. Profitability and	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered

		growth opportunities have the greatest effect on two capital structure variables book value of debt to total assets and book value of debt to book value of equity	
Iqbal, Hameed and Ramzan(2012)	The Impact of Debt Capacity on Firm's Growth	Relationship between market to book ratio and debt to total assets was investigated among 53 non-financial firms at Karachi stock exchange using 8 year panel data. The results revealed a significant positive relationship	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Ikpesu(2019)	Firm specific determinants of financial distress: Empirical evidence from Nigeria	The study sought to establish determinants of financial distress in Nigeria's manufacturing sector. It concluded that major determinants include liquidity, profitability, and leverage.	Effects of managerial power and debt capacity leverage were not considered.
Dudley(2017)	Testing Models of Dynamic Trade Off/Theory	Dynamic trade off theory predicts that leverage wanders within an optimal range. Determinants of leverage: volatility, profitability and interest rate affects the optimal range. Assets in place firms respond faster to decreases in leverage than growth opportunity firms. This suggests adjustment costs proportionate to deviation from optimal.	Effect of leverage on financial performance and managerial power on the relationship between leverage and firm performance was not considered
Wesa and Otinga	Determinants of financial distress among listed firms at the Nairobi securities exchange, Kenya	The study sought to investigate determinants of financial distress at the NSE. It concludes that Leverage, Liquidity and capital structure are major determinants	Effect of managerial power, and leverage are not considered
Frank and Goyal (2005)	"Tradeoff and Pecking Order Theories of Debt"	Taxes, bankruptcy costs, transaction cost, adverse selection and agency conflicts are advocated to explain the use of debt in financing. Direct transactions costs, and indirect bankruptcy cost play an important role in the choice of debt level.	Effect of leverage and managerial power on firm performance was not considered
Ağca and Mozumdar (2004)	Firm Size, Debt Capacity, and Corporate Financing Choices	The conflicting empirical evidence regarding pecking order arises from financing difference between large and small firms and the skewness of firm size distribution. Pecking order is suited for large firms with large, investment grade debt capacity.	Effect of leverage and managerial power on the firm performance was not considered
Odalo, Achoki &Njuguna(2016)	Relating Company Size and Financial Performance in	Size was observed to be significant and positively related to performance measured by ROE, ROA, EPS	Effect of leverage and managerial power on firm performance was not considered

	Agricultural Firms Listed in the Nairobi Securities Exchange in Kenya		
Margaritis and Psillaki **(2008)**	Capital structure, equity ownership and firm performance	Using a sample of French firms from Low and High growth industries, the study concludes that there is a positive and significant relation between leverage and firm performance measured by efficiency consistent with agency cost theory of debt. Moreover more dispersed share ownership is associated with less debt except for highly levered firms in textile industries	Effect of debt capacity on leverage and managerial power on the relationship between debt capacity, leverage and firm performance was not considered
Graham, Kim,and Leary(2019)	Ceo-Board Dynamics	Board independence increases at CEO turnover and decreases with CEO tenure, with decline stronger following superior performance. Longer tenure predisposes CEO to CEO duality. Powerful CEOs become entrenched	Effect of managerial power, and leverage on financial performance was not considered
Shleifer and Visny(1989)	MANAGEMENT ENTRENCHMENT The Case of Manager-Specific Investments	Manager entrenchment through manager specific investment is discussed. Manager specific investments permit reduced probability of replacement, higher wages, larger perquisites and greater latitude in determining corporate strategy	Effect of managerial power, and leverage on financial performance was not considered
Brisker and Wang (2016)	CEO's Inside Debt and Dynamics of Capital Structure	Higher CEO inside debt ratio is associated with lower leverage and faster adjustment downwards for over - levered firms and slower adjustment upwards for under-levered firms. CEO inside debt ratio of 10% is optimal for optimum market debt ratio for the firm	Effect of managerial power on the relationship between leverage and financial performance was not considered
Shilon(2015)	CEO Stock Ownership Policies—Rhetoric and Reality	Firms universally adopted SOPs as a key element in risk mitigation however the implementation of the policy makes it ineffectual.	Effect of managerial power on the relationship between leverage and financial performance was not considered
Bebchuk and Jackson (2005)	Executive Pensions	Defined benefits pension plan for executives are used to align executive goals with debt holder goals and reduce executive risk taking which exposes a firm to bankruptcy	Effect of managerial power on the relationship between leverage and financial performance was not considered
Bebchuk, Cremers, and Peyer(2010)	The CEO Pay Slice	The relationship between CEO pay slice and the value, performance and behavior of public firms is investigated. Controlling for standard controls, a negative relationship	Effect of managerial power on the relationship between leverage and financial performance was not considered

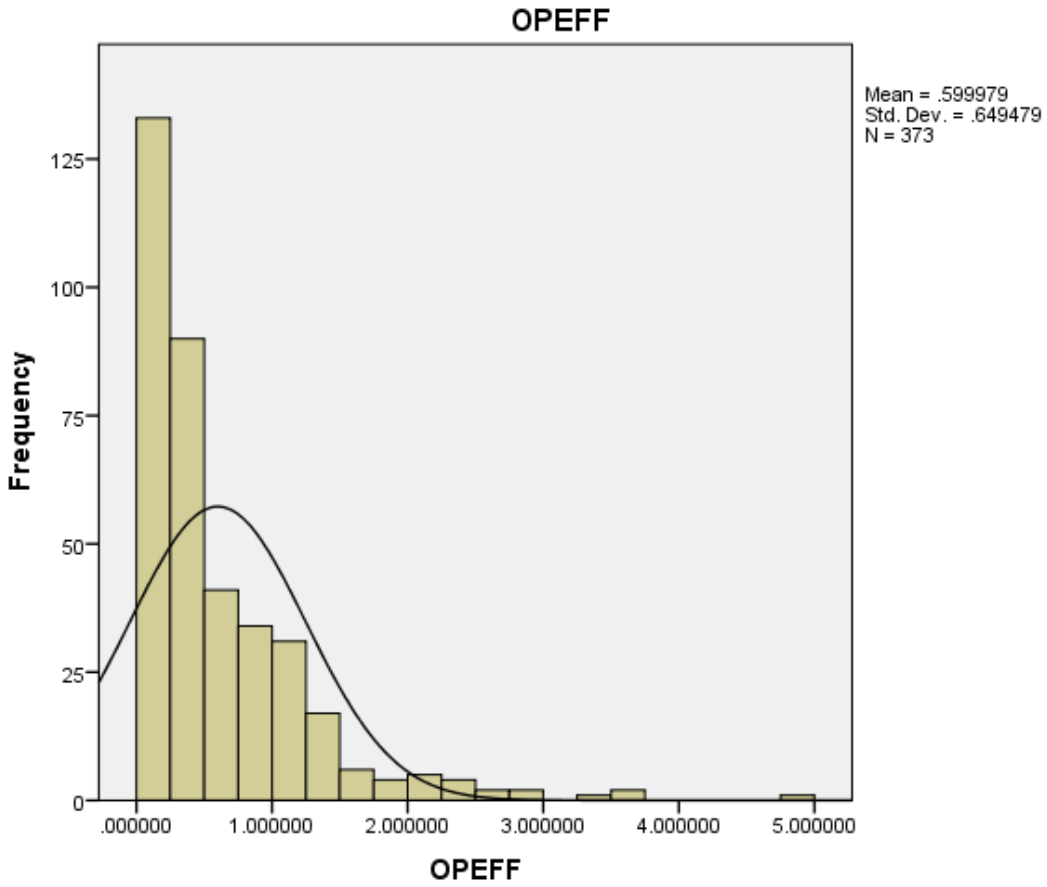
		between CPS and firm value measured by industry adjusted TobinsQ. Further, CPS is correlated to lower accounting profit, higher probability of option grant at lower price, lower performance sensitivity of CEO turnover, stock returns following acquisition and higher likelihood of positive returns following acquisition announcement and positively related to lower stock returns in periods of increases in CPS. Conclusion; higher CPS is associated with higher agency problem.	
Tien, Chen, and Chuang(2013)	A study of CEO power, pay structure, and firm performance	Power from executive directorship positively affects ROA and ROE. Power from duality negatively impacts on long term-pay and total pay. Power from tenure positively impacts on long-term pay and pay leverage. Composite power negatively affects short-term pay. Short-term pay positively affects ROA	Effect of managerial power on the relationship between leverage and financial performance was not considered
Kim and Lu(2011)	CEO Ownership, External Governance, and Risk-taking	CEO ownership affects firm valuation depending on external governance. The relationship is inverted U when external governance is weak but otherwise insignificant. High-level CEO ownership results in CEO entrenchment which results in reduction in risktaking.one affected area is R&D.	Effect of managerial power on the relationship between leverage and financial performance was not considered
Adams, Almeida, and Ferreira (2002)	Powerful CEOs and their Impact on Corporate Performance	CEOs can only impact firm outcomes if they have influence over crucial decisions. Where CEO has influence variability of outcomes is high. Firm performance (ROA, Tobin's Q, stock returns) are significantly more variable for firms with high CEO influence power (IP) index	Effect of managerial power on the relationship between leverage and financial performance was not considered
Daily and Jason(1997)	Sources of CEO Power and Firm Financial Performance: A Longitudinal Assessment	It's often assumed a powerful CEO impacts firm performance. Firm financial performance was found to precede and is affected by CEO power. Four dimensions of CEO power: structural power, expert power, ownership power and prestige power are identified.	Effect of managerial power on the relationship between leverage and financial performance was not considered
Choe, Tian and Yin(2008)	Managerial Power, Stock-Based Compensation, and	Managerial power theory predictions on relationship between power and pay: that increase in managerial	Effect of managerial power on the relationship between leverage and financial

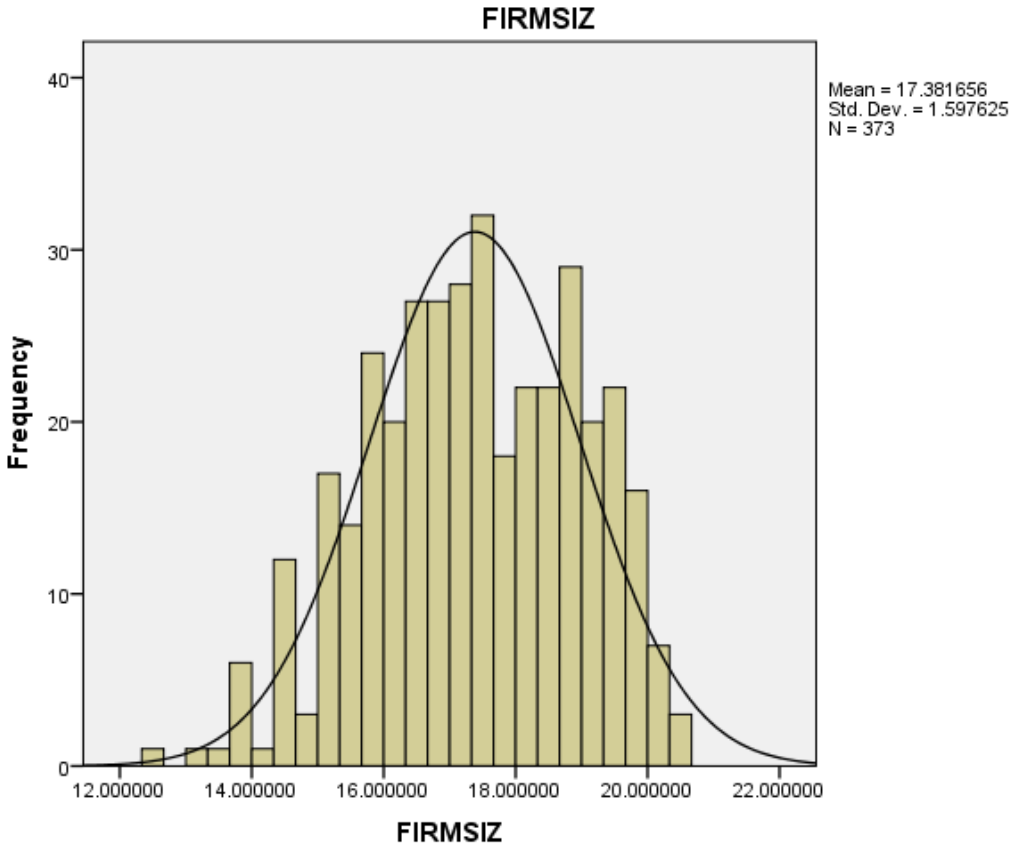
	Firm Performance: Theory and Evidence	power leads to increase in management pay including stock-pay, are supported while mixed results are obtained in relation to predictions between managerial power and firm performance(Gross and net of stock-pay)	performance was not considered
Bhagat and Bolton (2008)	Corporate governance and firm performance	Measures of corporate governance are significantly positively correlated with contemporary and subsequent corporate performance. No evidence supported relationship between stock market performance and corporate governance	Effect of managerial power on the relationship between leverage and financial performance was not considered
Gomley and Matsa(2014)	Playing it Safe? Managerial Preferences, Risk, and Agency Conflicts	Managerial incentive to play it safe by taking value depleting actions to reduce risks is examined. Its observed that managers take action to reduce risk of financial distress after adoption of anti-takeover measures; mergers, and cash holdings increase while stock volatility is reduced; merger targets with negative market response are profitable, highly levered firms, with substantial inside shareholding leading to conclusion that leverage and inside shareholding are not straight solutions to managerial effort problem.	Effect of managerial power on the relationship between leverage and financial performance was not considered
Kesten(2010)	Managerial Entrenchment and Shareholder Wealth Revisited: Theory and Evidence from a Recessionary Financial Market	Whether or not managerial entrenchment creates or destroys shareholder value very much depends on the macroeconomic environment including profitability, frequency of takeover, and valuation of takeover premiums. While evidence exists that management entrenchment reduces accountability to shareholders, amplifies agency costs, decreasing shareholder wealth (Bebchuk, Cohen and Ferrel, 2009), Gombers, Ishii and Metrick, 2003, this study contends and confirms, the benefits are limited to bullish market, the value of market for corporate control diminishes during recession. In a bullish market management entrenchment is negatively related to financial performance and vice versa during recession. The study concludes that while there are benefits to exposing managers to unfettered market for	Effect of managerial power on the relationship between leverage and financial performance was not considered

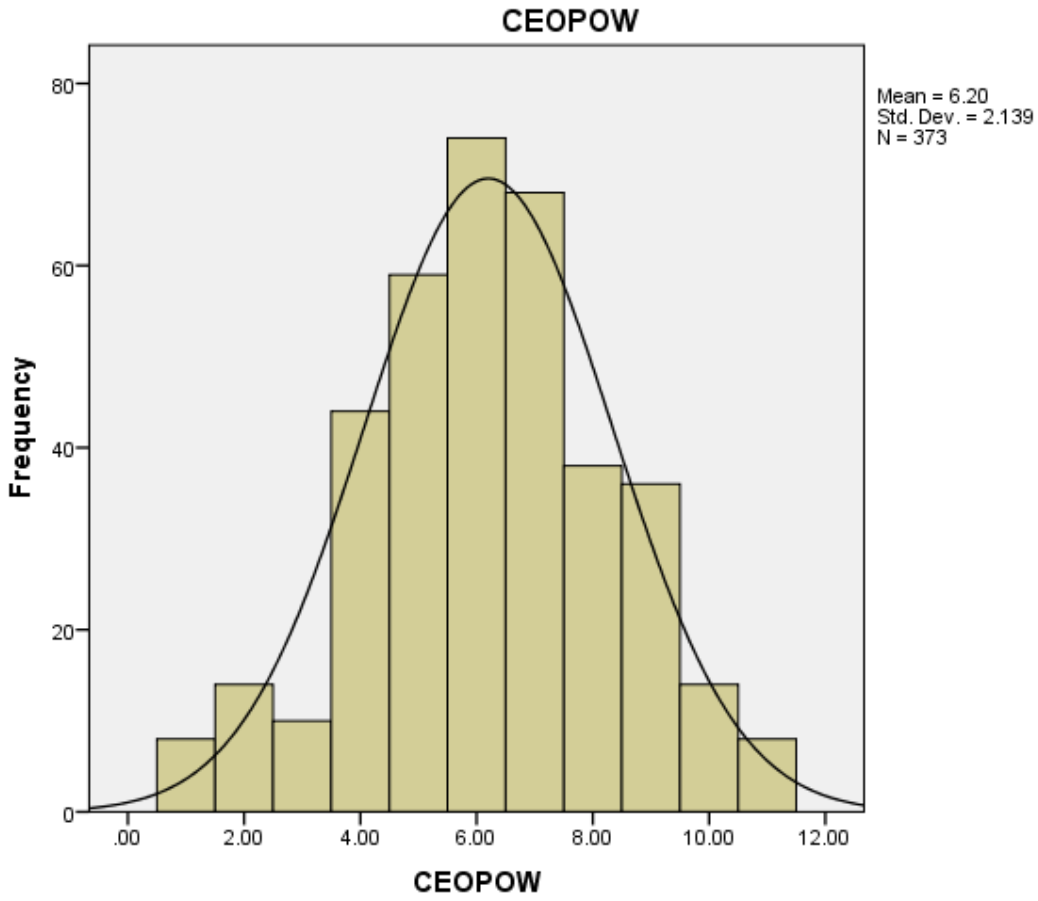
		corporate control, there are costs as well.	
Harrison and Wicks(2013)	Stakeholder Theory, Value, and Firm Performance	The concept of firm value has been simplified and narrowed to economic returns. Stakeholder theory provides a suitable focus for appropriate firm value stakeholders seek and how to measure it.	Effect of managerial power on the relationship between leverage and financial performance was not considered
Gümbel(2006)	Managerial Power and Executive Pay	A review of Bebchuk and Fried (2004) Pay without performance is undertaken. While clearly identifying weaknesses of current corporate governance and point in the direction of required reforms, no specific reforms are suggested. Balance of power in favor of CEO is noted.	Effect of managerial power on the relationship between leverage and financial performance was not considered

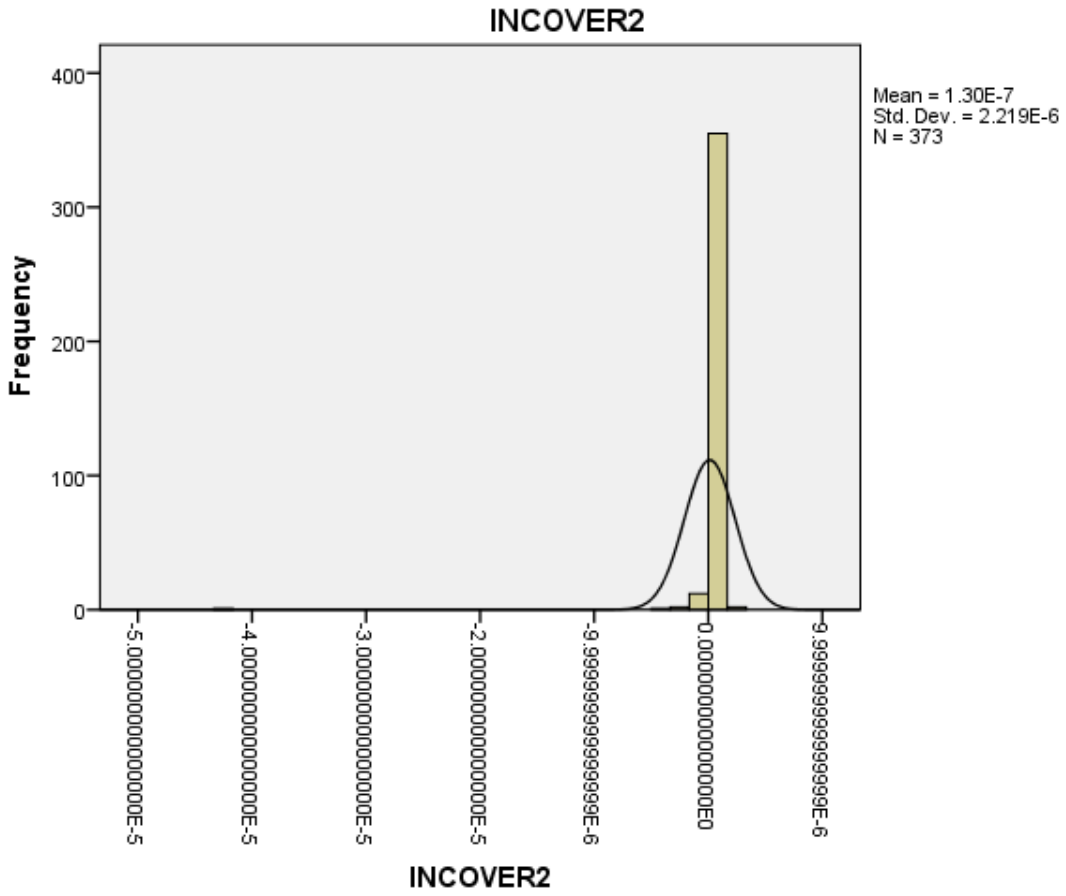
Appendix 7: Normality Test: Histogram and Q-Q Plot

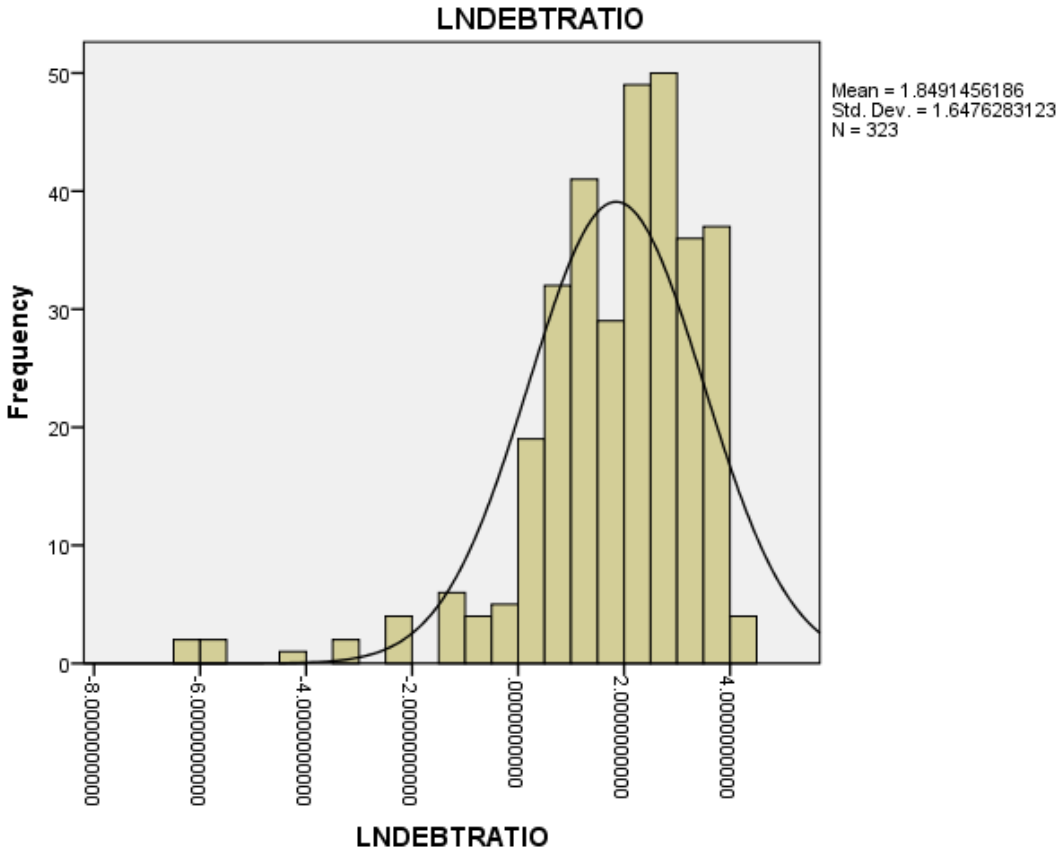
Histogram

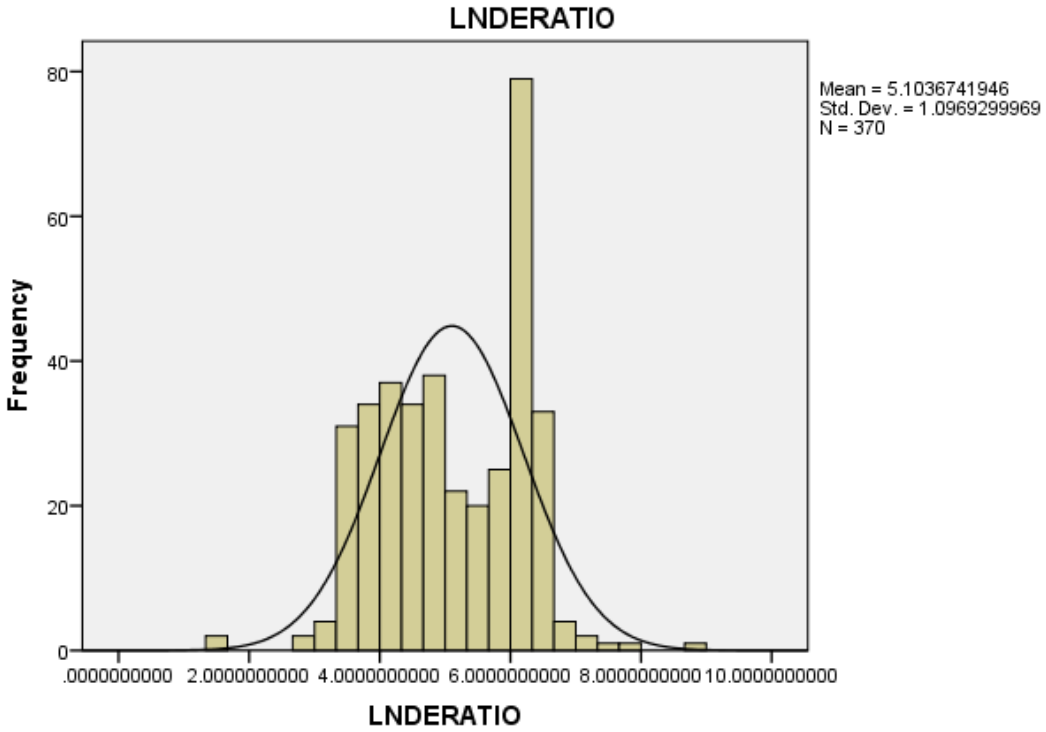


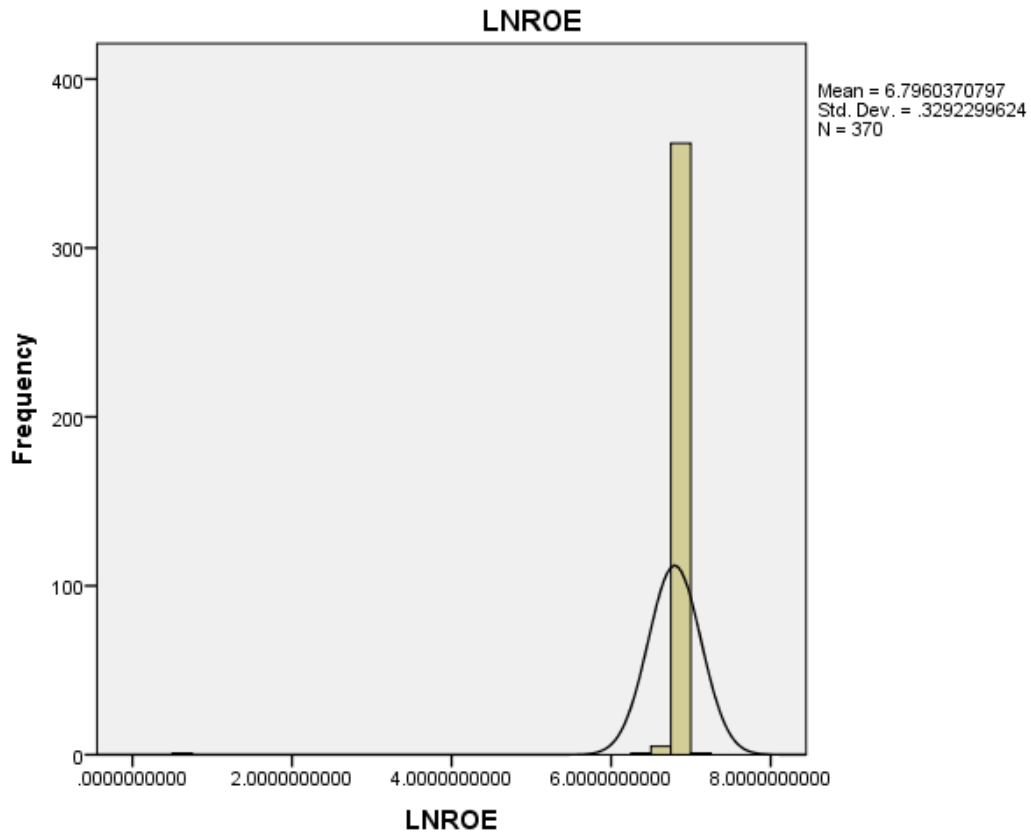

FIRMSIZ
Mean = 17.381656
Std. Dev. = 1.597625
N = 373
Frequency
40
30
20
10
0
12.000000
14.000000
16.000000
18.000000
20.000000
22.000000
FIRMSIZ

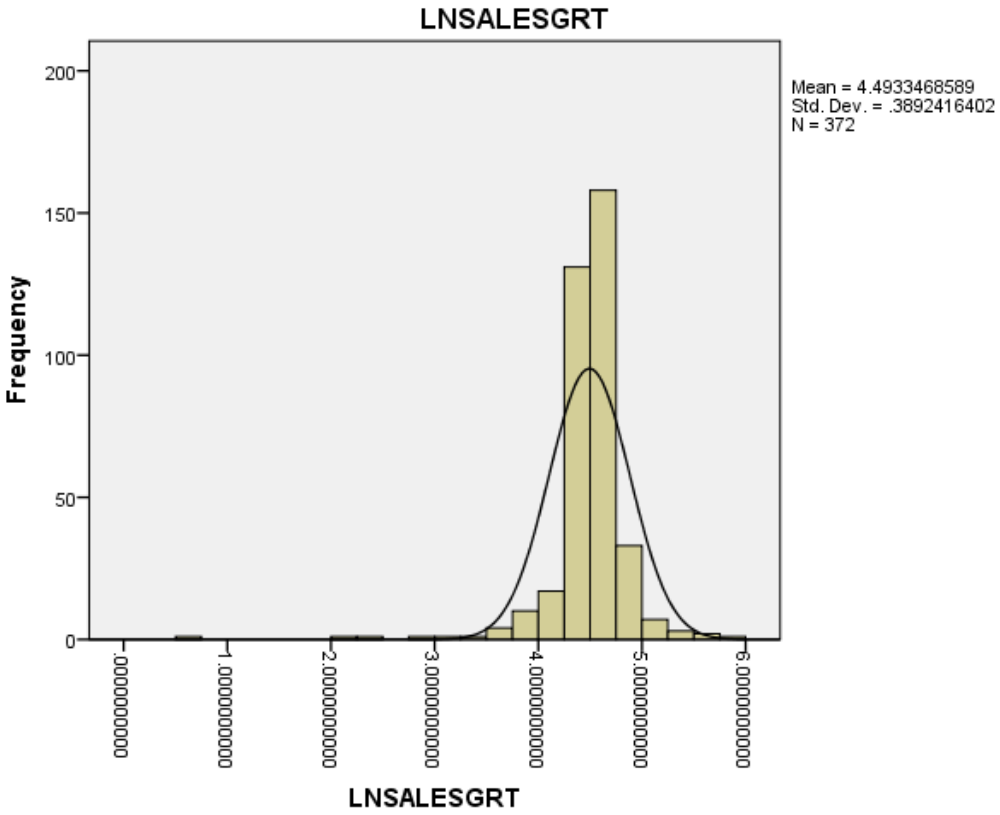

CEOPOW
Mean = 6.20
Std. Dev. = 2.139
N = 373
Frequency
80
60
40
20
0
.00
2.00
4.00
6.00
8.00
10.00
12.00
CEOPOW


INCOVER2
Mean = 1.30E-7
Std. Dev. = 2.219E-6
N = 373
Frequency
400
300
200
100
0
-5.000000000000000E-5
-4.000000000000000E-5
-3.000000000000000E-5
-2.000000000000000E-5
-9.999999999999999E-6
0.000000000000000E0
9.999999999999999E-6
INCOVER2

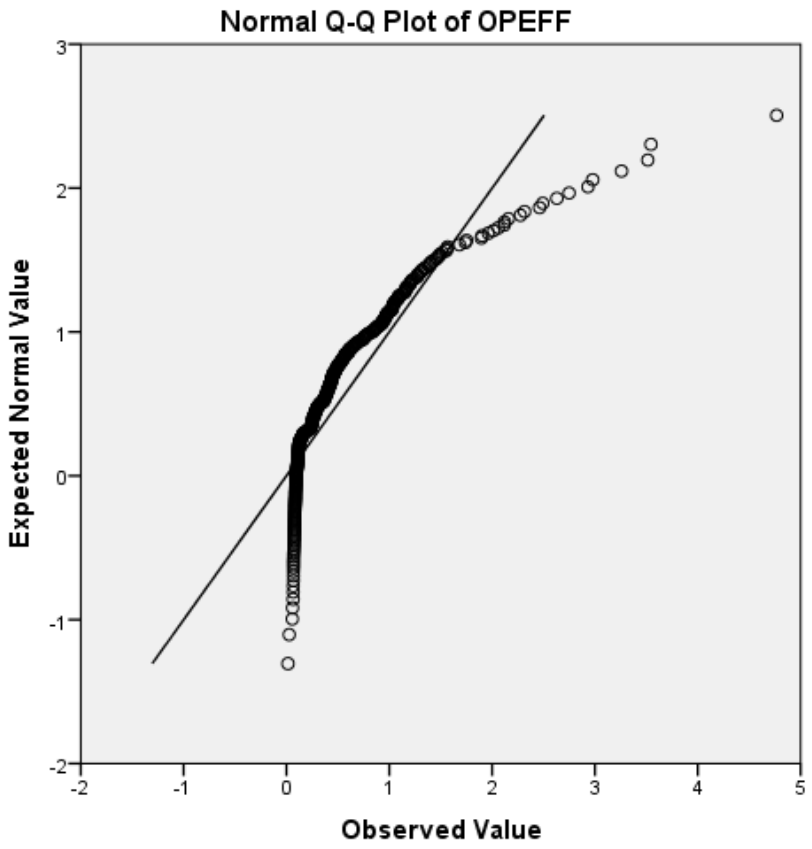

LNDEBTRATIO
Mean = 1.8491456186
Std. Dev. = 1.6476283123
N = 323
Frequency
50
40
30
20
10
0
-8.0000000000
-6.0000000000
-4.0000000000
-2.0000000000
.0000000000
2.0000000000
4.0000000000
LNDEBTRATIO


LNDERATIO
Mean = 5.1036741946
Std. Dev. = 1.0969299969
N = 370
Frequency
80
60
40
20
0
.0000000000
2.0000000000
4.0000000000
6.0000000000
8.0000000000
10.0000000000
LNDERATIO

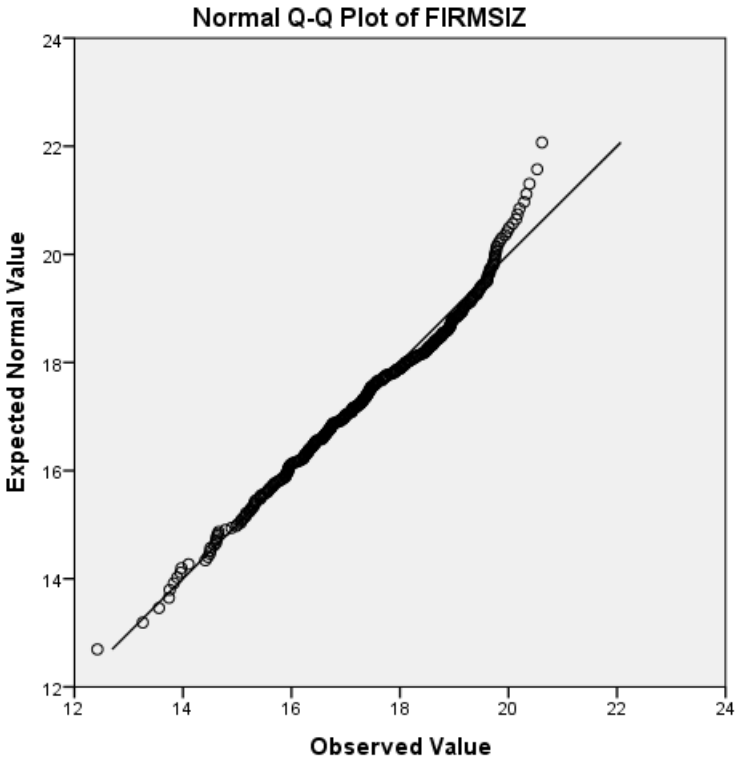

LNROE
Mean = 6.7960370797
Std. Dev. = .3292299624
N = 370
Frequency
400
300
200
100
0
.0000000000
2.0000000000
4.0000000000
6.0000000000
8.0000000000
LNROE


LNSALESGRT
Mean = 4.4933468589
Std. Dev. = .3892416402
N = 372
Frequency
200
150
100
50
0
.000000000
1.000000000
2.000000000
3.000000000
4.000000000
5.000000000
6.000000000
LNSALESGRT

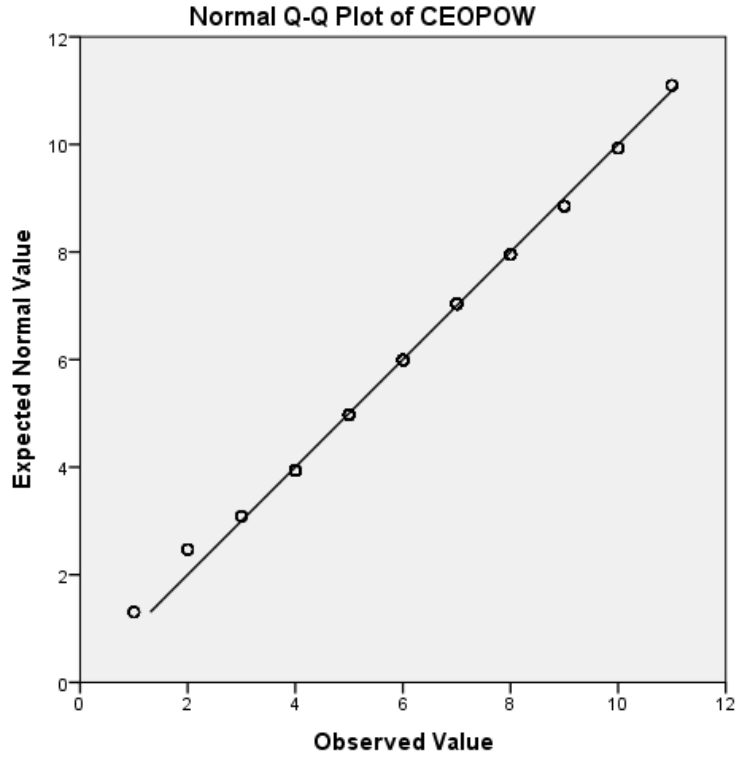
OPEFF


Normal Q-Q Plot of OPEFF
Expected Normal Value
3
2
1
0
-1
-2
-2
-1
0
1
2
3
4
5
Observed Value

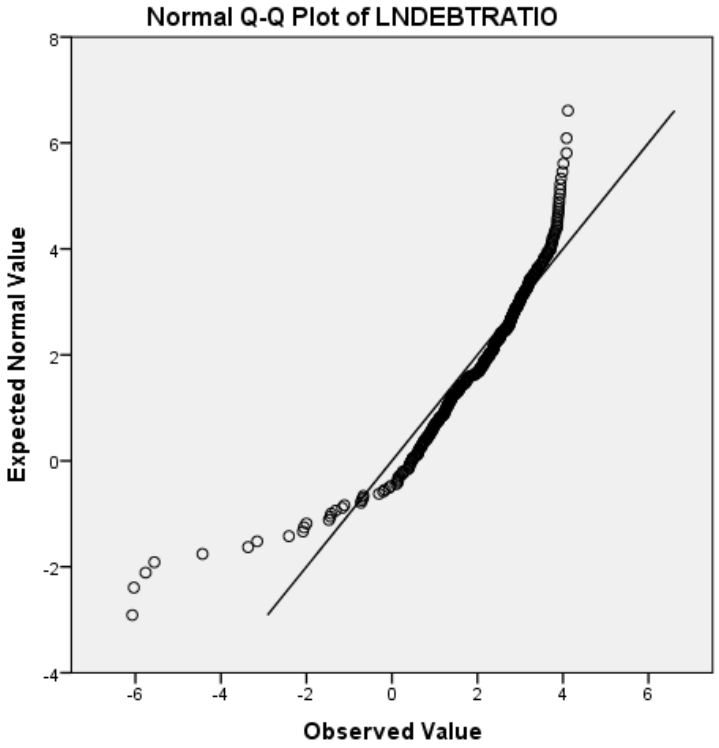
FIRMSIZ



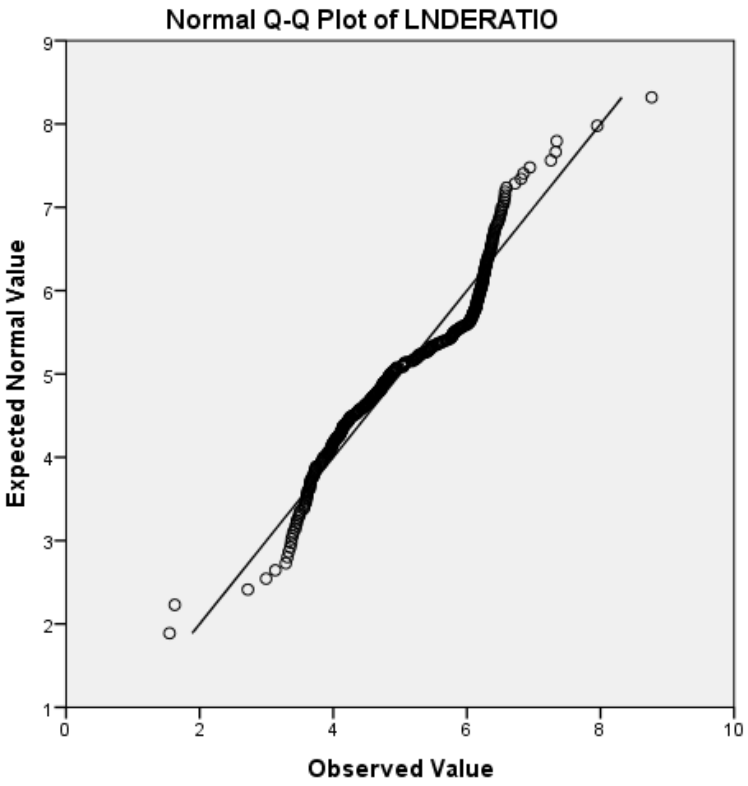
CEOPOW



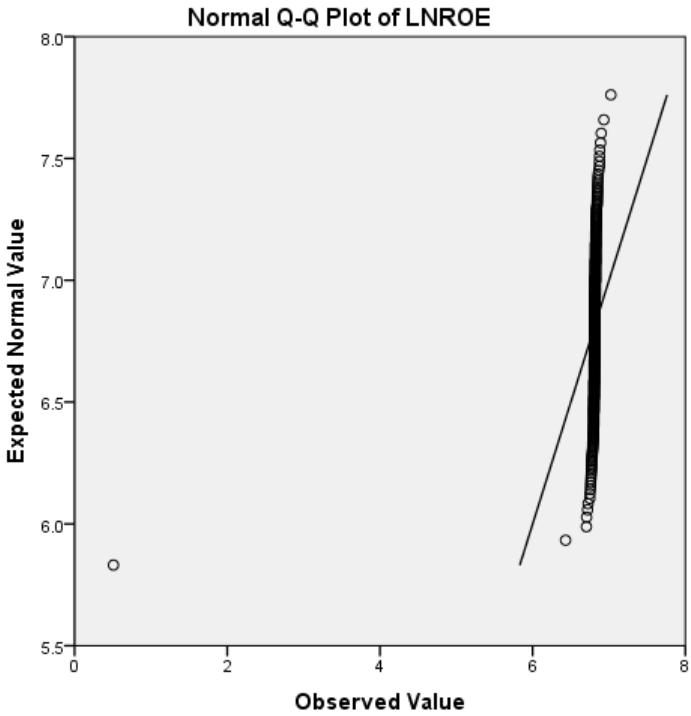
LNDEBTRATIO



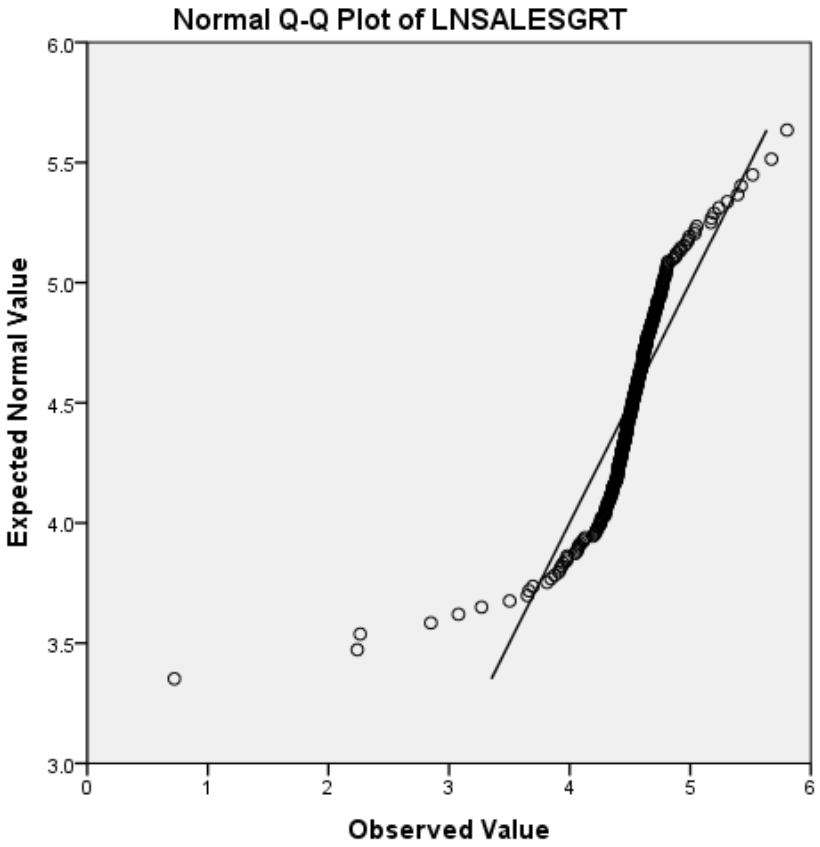
LNDERATIO



LNROE



LNSALESGRT



Appendix 8: Sectorial Difference Control Tests

Table 4.9.1 Model 3d COMBINED: Results (Non-Centered Explanatory variables). Effect of CEO Power Test.

Fixed-effects (within) regression					Number of obs = 369	
Group variable: COMPNUM					Number of groups = 38	
R-sq: within = 0.1948					Obs per group: min = 7	
between = 0.0148					avg = 9.7	
overall = 0.0527					max = 10	
			F(7,324) = 11.20			
corr(u_i, Xb) = -0.7913					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
CEOPOW	.050004	.0190472	2.63	0.009	.0125322	.0874757
LNINTCOVER	-.0199778	.0208629	-0.96	0.339	-.0610217	.0210661
LNDERATIO3	-.2485045	.0355201	-7.00	0.000	-.3183837	-.1786253
LNDEBTRATIO	.0516064	.0295876	1.74	0.082	-.0066016	.1098144
OPEFF	.1016763	.0863194	1.18	0.240	-.068141	.2714937
FIRMSIZ	.082887	.0424213	1.95	0.052	-.0005689	.1663429
LNSALESGRT	.1766774	.0463122	3.81	0.000	.0855669	.2677879
_cons	5.644051	.7803824	7.23	0.000	4.108794	7.179307
sigma_u .27687898; sigma_e .29303471; rho .47167508 (fraction of variance due to u_i)						
F test that all u_i=0: F(37, 324) = 2.57 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.2 Model 3d NON-FINANCIAL: Results (Non-Centered Explanatory variables). Effect of CEO Power Test.

Fixed-effects (within) regression					Number of obs = 223	
Group variable: COMPNUM					Number of groups = 23	
R-sq: within = 0.2762					Obs per group: min = 7	
between = 0.0866					avg = 9.7	
overall = 0.1173					max = 10	
F(7,193) = 10.52						
corr(u_i, Xb) = -0.7615					Prob > F = 0.0000	
LNROE	Coef.	Std. Err	. t	P>|t|	[95% Conf. Interval]	
OPEFF	.087606	.1105254	0.79	0.429	-.1303868	.3055988
FIRMSIZ	.1764847	.07554	2.34	0.021	.0274948	.3254747
CEOPOW	.0701169	.0315288	2.22	0.027	.0079317	.1323021
LNDERATIO3	-.3065768	.0522463	-5.87	0.000	-.4096237	-.2035298
LNSALESGRT	.3642943	.0838412	4.35	0.000	.1989317	.5296569
LNINTCOVER	.0075109	.1241796	0.06	0.952	-.2374124	.2524342
LNDEBTRATIO	.069358	.0535619	1.29	0.197	-.0362839	.1749998
_cons	2.827846	2.219361	1.27	0.204	-1.54947	7.205161
sigma_u .33602405; sigma_e .3599538; rho .46565768 (fraction of variance due to u_i)						
F test that all u_i=0: F(22, 193) = 2.13 Prob > F = 0.0034						

Source: Research Data, 2021.

Table 4.9.3 Model 3d FINANCIAL SECTOR: Results (Non-Centered Explanatory variables). Effect of CEO Power Test.

Fixed-effects (within) regression					Number of obs = 146	
Group variable: COMPNUM					Number of groups = 15	
R-sq: within = 0.4637					Obs per group: min = 8	
between = 0.2753					avg = 9.7	
overall = 0.0086					max = 10	
F(7,124) = 15.32						
corr(u_i, Xb) = -0.8211					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
OPEFF	.0108636	.0104829	1.04	0.302	-.009885	.0316123
FIRMSIZ	-.0079485	.0011819	-6.73	0.000	-.0102879	-.0056092
CEOPOW	.0005664	.0005571	1.02	0.311	-.0005363	.001669
LNDERATIO3	-.0007267	.0016266	-0.45	0.656	-.0039461	.0024927
LNSALESGRT	.0009174	.0014323	0.64	0.523	-.0019176	.0037523
LNINTCOVER	.0026186	.0004187	6.25	0.000	.00179	.0034473
LNDEBTRATIO	.000597	.0008081	0.74	0.461	-.0010024	.0021965
_cons	6.920307	.0242732	285.10	0.000	6.872264	6.968351
sigma_u .01407678; sigma_e .00545367; rho .86949192 (fraction of variance due to u_i)						
F test that all u_i=0: F(14, 124) = 14.36 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.4 Model 3Cd COMBINED: Results (Centered Explanatory variables). Effect of CEO Power Test.

Fixed-effects (within) regression					Number of obs = 369	
Group variable: COMPNUM					Number of groups = 38	
R-sq: within = 0.1948					Obs per group: min = 7	
between = 0.0148					avg = 9.7	
overall = 0.0527					max = 10	
F(7,324) = 11.20						
corr(u_i, Xb) = -0.7913					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
OPEFF	.1016763	.0863194	1.18	0.240	-.068141	.2714937
FIRMSIZ	.082887	.0424213	1.95	0.052	-.0005689	.1663429
CEOPOW_C	.050004	.0190472	2.63	0.009	.0125322	.0874757
LNDERATIO_C	-.2485045	.0355201	-7.00	0.000	-.3183837	-.1786253
LNSALESGRT	.1766774	.0463122	3.81	0.000	.0855669	.2677879
LNINTCOVER_C	-.0199778	.0208629	-0.96	0.339	-.0610217	.0210661
LNDEBTRATIO_C	.0516064	.0295876	1.74	0.082	-.0066016	.1098144
_cons	4.497254	.8092825	5.56	0.000	2.905142	6.089366
sigma_u .27687898; sigma_e .29303471; rho .47167509 (fraction of variance due to u_i)						
F test that all u_i=0: F(37, 324) = 2.57 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.5 Model 3Cd NON-FINANCIAL: Results (Centered Explanatory variables). Effect of CEO Power Test.

Fixed-effects (within) regression					Number of obs = 223	
Group variable: COMPNUM					Number of groups = 23	
R-sq: within = 0.2762					Obs per group: min = 7	
between = 0.0866					avg = 9.7	
overall = 0.1173					max = 10	
F(7,193) = 10.52						
corr(u_i, Xb) = -0.7615					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
OPEFF	.087606	.1105254	0.79	0.429	-.1303868	.3055988
FIRMSIZ	.1764847	.07554	2.34	0.021	.0274948	.3254747
LNSALESGRT	.3642943	.0838412	4.35	0.000	.1989317	.5296569
CEOPOW_C	.0701169	.0315288	2.22	0.027	.0079317	.1323021
LNDEBTRATIO_C	.069358	.0535619	1.29	0.197	-.0362839	.1749998
LNDERATIO_C	-.3065768	.0522463	-5.87	0.000	-.4096237	-.2035298
LNINTCOVER_C	.0075109	.1241796	0.06	0.952	-.2374124	.2524342
_cons	1.938849	1.363922	1.42	0.157	-.7512586	4.628956
sigma_u .33602406; sigma_e .3599538; rho .46565769 (fraction of variance due to u_i)						
F test that all u_i=0: F(22, 193) = 2.13 Prob > F = 0.0034						

Source: Research Data, 2021.

Table 4.9.6 Model 3Cd FINANCIAL SECTOR: Results (Centered Explanatory variables). Effect of CEO Power Test.

Fixed-effects (within) regression					Number of obs = 146	
Group variable: COMPNUM					Number of groups = 15	
R-sq: within = 0.4637					Obs per group: min = 8	
between = 0.2753					avg = 9.7	
overall = 0.0086					max = 10	
F(7,124) = 15.32						
corr(u_i, Xb) = -0.8211					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
OPEFF	.0108636	.0104829	1.04	0.302	-.009885	.0316123
FIRMSIZ	-.0079485	.0011819	-6.73	0.000	-.0102879	-.0056092
LNSALESGRT	.0009174	.0014323	0.64	0.523	-.0019176	.0037523
CEOPOW_C	.0005664	.0005571	1.02	0.311	-.0005363	.001669
LNDEBTRATIO_C	.000597	.0008081	0.74	0.461	-.0010024	.0021965
LNDERATIO_C	-.0007267	.0016266	-0.45	0.656	-.0039461	.0024927
LNINTCOVER_C	.0026186	.0004187	6.25	0.000	.00179	.0034473
_cons	6.958918	.0237514	292.99	0.000	6.911907	7.005929
sigma_u .01407678; sigma_e .00545367; rho .86949192 (fraction of variance due to u_i)						
F test that all u_i=0: F(14, 124) = 14.36 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.7 Model 4a COMBINED: Results of Moderating effect of CEO Power on the relationship between Debt Ratio and ROE

Fixed-effects (within) regression					Number of obs =	369
Group variable: COMPNUM					Number of groups =	38
R-sq: within = 0.2105					Obs per group: min =	7
between = 0.0302					avg =	9.7
overall = 0.0707					max =	10
		F(8,323) = 10.77				
corr(u_i, Xb) = -0.7623					Prob > F =	0.0000
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
c.CEOPOW_C#c.LNDEBTRATIO_C	.0254467	.010044	2.53	0.012	.0056867	.0452066
LNDEBTRATIO_C	.0360862	.0299758	1.20	0.230	-.0228863	.0950587
OPEFF	.0981594	.0856178	1.15	0.252	-.0702796	.2665983
FIRMSIZ	.0750203	.0421854	1.78	0.076	-.0079725	.1580131
LNSALESGRT	.1851376	.0460509	4.02	0.000	.09454	.2757352
CEOPOW_C	.0501373	.0188899	2.65	0.008	.0129745	.0873002
LNDERATIO_C	-.241522	.0353344	-6.84	0.000	-.3110367	-.1720073
LNINTCOVER_C	-.0242418	.020759	-1.17	0.244	-.0650816	.0165981
_cons	4.598784	.8035987	5.72	0.000	3.017836	6.179733
sigma_u .25985899; sigma_e .2906146; rho .44430267 (fraction of variance due to u_i)						
F test that all u_i=0: F(37, 323) = 2.46 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.8 Model 4a NON-FINANCIAL SECTOR: Results of Moderating effect of CEO Power on the relationship between Debt Ratio and ROE

Fixed-effects (within) regression					Number of obs = 223	
Group variable: COMPNUM					Number of groups = 23	
R-sq: within = 0.2949					Obs per group: min = 7	
between = 0.0979					avg = 9.7	
overall = 0.1247					max = 10	
F(8,192) = 10.04						
corr(u_i, Xb) = -0.7746					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
c.CEOPOW_C#c.LNDEBTRATIO_C	.0466502	.0206531	2.26	0.025	.0059141	.0873863
OPEFF	.0959441	.1094316	0.88	0.382	-.1198984	.3117865
FIRMSIZ	.1920945	.0750686	2.56	0.011	.0440294	.340159
LNSALESGRT	.3533036	.0831067	4.25	0.000	.1893842	.517223
CEOPOW_C	.0468282	.0328585	1.43	0.156	-.0179818	.1116382
LNDEBTRATIO_C	.0551585	.0533731	1.03	0.303	-.0501145	.1604315
LNDERATIO_C	-.3031152	0517224	-5.86	0.000	-.4051323	-.201098
LNINTCOVER_C	-.024657	.1237031	-0.20	0.842	-.2686485	.2193346
_cons	1.728205	1.352873	1.28	0.203	-.9401977	4.396607
sigma_u .35182753; sigma_e .35618855; rho .49384074 (fraction of variance due to u_i)						
F test that all u_ i=0: F(22, 192) = 2.30 Prob > F = 0.0014						

Source: Research Data, 2021.

Table 4.9.9 Model 4a FINANCIAL SECTOR: Results of Moderating effect of CEO Power on the relationship between Debt Ratio and ROE

Fixed-effects (within) regression					Number of obs = 146	
Group variable: COMPNUM					Number of groups = 15	
R-sq: within = 0.4674					Obs per group: min = 8	
between = 0.2771					avg = 9.7	
overall = 0.0077					max = 10	
F(8,123) = 13.49						
corr(u_i, Xb) = -0.8163					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
c.CEOPOW_C#c.LNDEBTRATIO_C	-.0002397	.0002609	-0.92	0.360	-.0007562	.0002769
OPEFF	.0097293	.010562	0.92	0.359	-.0111776	.0306362
FIRMSIZ	-.0078035	.0011932	-6.54	0.000	-.0101653	-.0054417
LNSALESGRT	.0008737	.001434	0.61	0.543	-.0019648	.0037122
CEOPOW_C	.0004201	.0005797	0.72	0.470	-.0007274	.0015677
LNDEBTRATIO_C	.0007123	.0008183	0.87	0.386	-.0009075	.002332
LNDERATIO_C	-.0006307	.0016309	-0.39	0.700	-.003859	.0025976
LNINTCOVER_C	.0026585	.0004212	6.31	0.000	.0018248	.0034923
_cons	6.956647	.0238946	291.14	0.000	6.909349	7.003945
sigma_u .01393588; sigma_e .00545712; rho .86704646 (fraction of variance due to u_i)						
F test that all u_i=0: F(14, 123) = 14.12 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.10 Model 4b COMBINED. Results of Moderating effect of CEO Power on the relationship between Debt/Equity Ratio and ROE

Fixed-effects (within) regression					Number of obs =	369
Group variable: COMPNUM					Number of groups =	38
R-sq: within = 0.3419					Obs per group: min =	7
between = 0.0318					avg =	9.7
overall = 0.1078					max =	10
		F(9,322) = 18.59				
corr(u_i, Xb) = -0.7951					Prob > F =	0.0000
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
c.CEOPOW_C#c.LNDERATIO_C	.1015756	.0126665	8.02	0.000	.0766561	.1264951
c.CEOPOW_C#c.LNDEBTRATIO_C	.0031513	.0095958	0.33	0.743	-.0157271	.0220296
OPEFF	.0892968	.0782964	1.14	0.255	-.0647402	.2433338
FIRMSIZ	.0887315	.038612	2.30	0.022	.0127678	.1646951
LNSALESGRT	.1263731	.0427416	2.96	0.003	.042285	.2104612
CEOPOW_C	.052211	.0172748	3.02	0.003	.0182252	.0861967
LNDEBTRATIO_C	.0340555	.0274109	1.24	0.215	-.0198717	.0879826
LNDERATIO_C	-.1640776	.0337221	-4.87	0.000	-.230421	-.0977342
LNINTCOVER_C	-.0260066	.0189832	-1.37	0.172	-.0633533	.0113401
_cons	4.6376	.7348232	6.31	0.000	3.191939	6.08326
sigma_u .31357371; sigma_e .26573678; rho .58201637 (fraction of variance due to u_i)						
F test that all u_i=0: F(37, 322) = 3.87 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.11 Model 4b NON-FINANCIAL SECTOR. Results of Moderating effect of CEO Power on the relationship between Debt/Equity Ratio and ROE

Fixed-effects (within) regression					Number of obs = 223	
Group variable: COMPNUM					Number of groups = 23	
R-sq: within = 0.5002					Obs per group: min = 7	
between = 0.2381					avg = 9.7	
overall = 0.3584					max = 10	
F(9,191) = 21.24						
corr(u_i, Xb) = -0.5480					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
c.CEOPOW_C#c.LNDERATIO_C	.1895731	.0214046	8.86	0.000	.1473533	.2317929
c.CEOPOW_C#c.LNDEBTRATIO_C	-.050312	.0205867	-2.44	0.015	-.0909185	-.0097055
OPEFF	.0383331	.0926054	0.41	0.679	-.1443274	.2209937
FIRMSIZ	.125212	.0638175	1.96	0.051	-.0006656	.2510897
LNSALESGRT	.1602635	.0734624	2.18	0.030	.0153617	.3051653
CEOPOW_C	.1856759	.0318613	5.83	0.000	.1228306	.2485212
LNDEBTRATIO_C	.0247802	.0451853	0.55	0.584	-.0643461	.1139065
LNDERATIO_C	-.0910078	.0497984	-1.83	0.069	-.1892332	.0072176
LNINTCOVER_C	-.0548954	.1044797	-0.53	0.600	-.2609777	.1511869
_cons	3.892837	1.167888	3.33	0.001	1.589223	6.196452
sigma_u .24094824; sigma_e .30067645; rho .39104892 (fraction of variance due to u_i)						
F test that all u_i=0: F(22, 191) = 1.84 Prob > F = 0.0159						

Source: Research Data, 2021.

Table 4.9.12 Model 4b FINANCIAL SECTOR. Results of Moderating effect of CEO Power on the relationship between Debt/Equity Ratio and ROE

Fixed-effects (within) regression					Number of obs = 146	
Group variable: COMPNUM					Number of groups = 15	
R-sq: within = 0.4676					Obs per group: min = 8	
between = 0.2734					avg = 9.7	
overall = 0.0071 max = 10						
F(9,122) = 11.91						
corr(u_i, Xb) = -0.8140					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
c.CEOPOW_C#c.LNDERATIO_C	.000132	.0005789	0.23	0.820	-.001014	.0012779
c.CEOPOW_C#c.LNDEBTRATIO_C	-.0002598	.0002764	-0.94	0.349	-.000807	.0002874
OPEFF	.010272	.0108669	0.95	0.346	-.0112401	.031784
FIRMSIZ	-.0077625	.0012112	-6.41	0.000	-.0101602	-.0053649
LNSALESGRT	.00084	.0014471	0.58	0.563	-.0020247	.0037047
CEOPOW_C	.0003355	.0006902	0.49	0.628	-.0010308	.0017019
LNDEBTRATIO_C	.0007093	.0008216	0.86	0.390	-.0009171	.0023357
LNDERATIO_C	-.0005934	.0016454	-0.36	0.719	-.0038507	.0026639
LNINTCOVER_C	.0026486	.0004251	6.23	0.000	.0018071	.0034901
_cons	6.955965	.0241729	287.76	0.000	6.908113	7.003818
sigma_u .01386736; sigma_e .00547827; rho .86500491 (fraction of variance due to u_i)						
F test that all u_i=0: F(14, 122) = 12.56 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.13 Model 4d COMBINED. Results of Moderating effect of CEO Power on the relationship between Interest Coverage Ratio and ROE

Fixed-effects (within) regression					Number of obs =	369
Group variable: COMPNUM					Number of groups =	38
R-sq: within = 0.3430					Obs per group: min =	7
between = 0.0331					avg =	9.7
overall = 0.1095					max =	10
		F(10,321) = 16.76				
corr(u_i, Xb) = -0.7931					Prob > F =	0.0000
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
c.CEOPOW_C#c.LNINTCOVER_C	.0083916	.0119616	0.70	0.483	-.0151413	.0319246
c.CEOPOW_C#c.LNDERATIO_C	.1019455	.0126874	8.04	0.000	.0769844	.1269065
c.CEOPOW_C#c.LNDEBTRATIO_C	.0054582	.0101508	0.54	0.591	-.0145122	.0254287
OPEFF	.0903841	.0783735	1.15	0.250	-.0638065	.2445746
FIRMSIZ	.0893205	.0386516	2.31	0.021	.013278	.1653629
LNSALESGRT	.1230478	.0430372	2.86	0.005	.0383772	.2077184
CEOPOW_C	.0514132	.0173258	2.97	0.003	.0173268	.0854997
LNDEBTRATIO_C	.0282526	.0286525	0.99	0.325	-.0281178	.084623
LNDERATIO_C	-.1633009	.0337669	-4.84	0.000	-.2297332	-.0968686
LNINTCOVER_C	-.044355	.032326	-1.37	0.171	-.1079525	.0192425
_cons	4.642933	.7354427	6.31	0.000	3.196036	6.089829
sigma_u .31169714; sigma_e .26594658; rho .57870831 (fraction of variance due to u_i)						
F test that all u_i=0: F(37, 321) = 3.87 Prob > F = 0.0000						

Source: Research Data, 2021.

Table 4.9.14 Model 4d NON-FINANCIAL SECTOR. Results of Moderating effect of CEO Power on the relationship between Interest Coverage Ratio and ROE

Fixed-effects (within) regression					Number of obs = 223	
Group variable: COMPNUM					Number of groups = 23	
R-sq: within = 0.5005					Obs per group: min = 7	
between = 0.2365					avg = 9.7	
overall = 0.3571 max = 10						
F(10,190) = 19.04						
corr(u_i, Xb) = -0.5508					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
c.CEOPOW_C#c.LNINTCOVER_C	.0257684	.0737502	0.35	0.727	-.1197058	.1712427
c.CEOPOW_C#c.LNDERATIO_C	.1896953	.0214568	8.84	0.000	.1473711	.2320195
c.CEOPOW_C#c.LNDEBTRATIO_C	-.0508811	.0206984	-2.46	0.015	-.0917093	-.010053
OPEFF	.0373699	.0928599	0.40	0.688	-.1457988	.2205386
FIRMSIZ	.1271955	.0642161	1.98	0.049	.0005274	.2538636
LNSALESGRT	.1600349	.0736347	2.17	0.031	.0147883	.3052815
CEOPOW_C	.187418	.0323217	5.80	0.000	.1236626	.2511735
LNDEBTRATIO_C	.0237601	.0453835	0.52	0.601	-.0657602	.1132803
LNDERATIO_C	-.0920046	.0499947	-1.84	0.067	-.1906206	.0066113
LNINTCOVER_C	-.0150264	.1548764	-0.10	0.923	-.3205245	.2904717
_cons	3.863277	1.173635	3.29	0.001	1.548249	6.178304
sigma_u .24218588; sigma_e .30136986; rho .39239274 (fraction of variance due to u_i)						

Source: Research Data, 2021.

Table 4.9.15 Model 4d FINANCIAL SECTOR. Results of Moderating effect of CEO Power on the relationship between Interest Coverage Ratio and ROE

Fixed-effects (within) regression					Number of obs = 146	
Group variable: COMPNUM					Number of groups = 15	
R-sq: within = 0.4868					Obs per group: min = 8	
between = 0.2821					avg = 9.7	
overall = 0.0049 max = 10						
F(10,121) = 11.48						
corr(u_i, Xb) = -0.8033					Prob > F = 0.0000	
LNROE	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
c.CEOPOW_C#c.LNINTCOVER_C	.0006908	.0003248	2.13	0.036	.0000476	.0013339
c.CEOPOW_C#c.LNDERATIO_C	.0002657	.0005741	0.46	0.644	-.000871	.0014023
c.CEOPOW_C#c.LNDEBTRATIO_C	.0000442	.0003077	0.14	0.886	-.000565	.0006535
OPEFF	.0087973	.0107358	0.82	0.414	-.012457	.0300517
FIRMSIZ	-.0077024	.0011944	-6.45	0.000	-.010067	-.0053377
LNSALESGRT	.0005323	.001434	0.37	0.711	-.0023067	.0033713
CEOPOW_C	.000265	.0006813	0.39	0.698	-.0010837	.0016138
LNDEBTRATIO_C	-.0002519	.0009276	-0.27	0.786	-.0020882	.0015845
LNDERATIO_C	-.0009564	.0016311	-0.59	0.559	-.0041857	.0022728
LNINTCOVER_C	.0010122	.0008763	1.16	0.250	-.0007226	.002747
_cons	6.956585	.0238332	291.89	0.000	6.9094	7.003769
sigma_u .01367097; sigma_e .00540087; rho .86499677 (fraction of variance due to u_i)						
F test that all u_i=0: F(14, 121) = 13.01 Prob > F = 0.0000						

Source: Research Data, 2021.

Appendix 9: Results of Sectorial Model Selection Test

Table 4.10.1 Breusch and Pagan Lagrangian multiplier test for random effects [Non-Financial Firms]

```
LNROE[COMPNUM,t] = Xb + u[COMPNUM] + e[COMPNUM,t]

    Estimated results:

                     |       Var     sd = sqrt(Var)

             ---------+------------------------------

                LNROE |   .1793785       .4235309

                    e |   .1295667       .3599538

                    u |    .008925       .0944723

    Test:   Var(u) = 0

                          chibar2(01) =     0.41

                        Prob > chibar2 =   0.2602
```

Table 4.10.2. Hausman Test [Non-Financial Sectior Firms]

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	FE	RE	Difference	S.E.
OPEFF	.087606	.0822284	.0053776	.1000204
FIRMSIZ	.1764847	-.0067256	.1832104	.0713146
CEOPOW	.0701169	.0474827	.0226342	.0261295
LNDERATIO3	-.3065768	-.1987693	-.1078075	.0315021
LNSALESGRT	.3642943	.343571	.0207233	.0320406
LNINTCOVER	.0075109	-.0198758	.0273867	.0317978
LNDEBTRATIO	.069358	.0732556	-.0038976	.0397732

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

= 26.41

Prob>chi2 = 0.0004

Table 4.10.3 FE and PE Regression Models

```
Fixed-effects (within) regression           Number of obs      =       223
Group variable: COMPNUM                     Number of groups   =        23
R-sq:  within  = 0.2762                     Obs per group: min =         7
       between = 0.0866                                    avg =       9.7
       overall = 0.1173                                    max =        10
                                            F(7,193)           =     10.52
corr(u_i, Xb)  = -0.7615                    Prob > F           =    0.0000
------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      OPEFF |    .087606   .1105254     0.79   0.429    -.1303868    .3055988
     FIRMSIZ |   .1764847     .07554     2.34   0.021     .0274948    .3254747
     CEOPOW |   .0701169   .0315288     2.22   0.027     .0079317    .1323021
  LNDERATIO3 |  -.3065768   .0522463    -5.87   0.000    -.4096237   -.2035298
  LNSALESGRT |   .3642943   .0838412     4.35   0.000     .1989317    .5296569
  LNINTCOVER |   .0075109   .1241796     0.06   0.952    -.2374124    .2524342
  NDEBTRATIO |    .069358   .0535619     1.29   0.197    -.0362839    .1749998
       _cons |   2.827846   2.219361     1.27   0.204     -1.54947    7.205161
-------------+----------------------------------------------------------------
     sigma_u |  .33602405
     sigma_e |   .3599538
         rho |  .46565768   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(22, 193) =     2.13           Prob > F = 0.0034
```

POOLED EFFECT MODEL

Source	SS	df	MS	Number of obs =	223
Model	8.73918187	7	1.24845455	Prob > F =	0.0000
Residual	31.0828348	215	.144571325	R-squared =	0.2195
Total	39.8220167	222	.179378453	Adj R-squared =	0.1940
				Root MSE =	.38023

LNROE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
OPEFF	.080749	.0393581	2.05	0.041	.0031719	.1583262
FIRMSIZ	-.0162079	.0207396	-0.78	0.435	-.0570869	.0246711
CEOPOW	.0425131	.0152115	2.79	0.006	.0125304	.0724958
LNDERATIO3	-.1723522	.0389372	-4.43	0.000	-.2490998	-.0956047
LNSALESGRT	.3559997	.0767189	4.64	0.000	.2047823	.5072171
LNINTCOVER	-.0157105	.1191137	-0.13	0.895	-.2504906	.2190695
NDEBTRATIO	.0731405	.0323526	2.26	0.025	.0093716	.1369094
_cons	5.9635	1.784548	3.34	0.001	2.44605	9.480951

Table 4.10.4 Breusch and Pagan Lagrangian multiplier test for random effects [Financial Sector Firms]

```
Estimated results:

                     |       Var     sd = sqrt(Var)

             ---------+------------------------------

                LNROE |   .0000874       .0093471

                    e |   .0000297       .0054537

                    u |   .0000141       .0037554

    Test:   Var(u) = 0

                         chibar2(01) =    30.82

                       Prob > chibar2 =   0.0000
```

Table 4.10.5 hausman FE RE [Financial Sector Firms]

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	FE	RE	Difference	S.E.
OPEFF	.0108636	-.0009435	.0118072	.
FIRMSIZ	-.0079485	-.0023766	-.0055719	.0002387
CEOPOW	.0005664	.0001489	.0004175	.0003633
LNDERATIO3	-.0007267	.0013854	-.0021122	.
LNSALESGRT	.0009174	.0035666	-.0026492	.
LNINTCOVER	.0026186	.0020943	.0005243	.
LNDEBTRATIO	.000597	-.0002307	.0008277	.

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(7) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 791.89

Prob>chi2 = 0.0000

(V_b-V_B is not positive definite)

Appendix 10: Results of Test of Sector Difference in Beta Coefficients

Table 4.11.1A fixed effect model [Non-Financial Sector Firms]

```
. xtreg LNROE OPEFF FIRMSIZ CEOPOW LNDERATIO3 LNSALESGRT LNINTCOVER
LNDEBTRATIO, fe

Fixed-effects (within) regression           Number of obs      =       223

Group variable: COMPNUM                     Number of groups   =        23

R-sq:  within  = 0.2762                     Obs per group: min =         7

       between = 0.0866                                    avg =       9.7

       overall = 0.1173                                    max =        10

                                            F(7,193)           =     10.52

corr(u_i, Xb)  = -0.7615                    Prob > F           =    0.0000

------------------------------------------------------------------------------

     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]

-----------+------------------------------------------------------------------

     OPEFF |    .087606   .1105254     0.79   0.429    -.1303868    .3055988

   FIRMSIZ |   .1764847     .07554     2.34   0.021     .0274948    .3254747

    CEOPOW |   .0701169   .0315288     2.22   0.027     .0079317    .1323021

LNDERATIO3 |  -.3065768   .0522463    -5.87   0.000    -.4096237   -.2035298

LNSALESGRT |   .3642943   .0838412     4.35   0.000     .1989317    .5296569

LNINTCOVER |   .0075109   .1241796     0.06   0.952    -.2374124    .2524342

LNDEBTRATIO |   .069358   .0535619     1.29   0.197    -.0362839    .1749998

     _cons |   2.827846   2.219361     1.27   0.204     -1.54947    7.205161

-----------+------------------------------------------------------------------

     sigma_u |  .33602405

     sigma_e |   .3599538

         rho |  .46565768   (fraction of variance due to u_i)

------------------------------------------------------------------------------

F test that all u_i=0:     F(22, 193) =     2.13           Prob > F = 0.0034
```

Table 4.11.1B Fixed Effect Model [Financial Sector Firms]

```
. xtreg LNROE OPEFF FIRMSIZ CEOPOW LNDERATIO3 LNSALESGRT LNINTCOVER
LNDEBTRATIO, fe

Fixed-effects (within) regression               Number of obs      =       146
Group variable: COMPNUM                         Number of groups   =        15
R-sq:  within  = 0.4637                         Obs per group: min =         8
       between = 0.2753                                        avg =       9.7
       overall = 0.0086                                        max =        10
                                                F(7,124)           =     15.32
corr(u_i, Xb)  = -0.8211                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       OPEFF |   .0108636   .0104829     1.04   0.302     -.009885    .0316123
     FIRMSIZ |  -.0079485   .0011819    -6.73   0.000    -.0102879   -.0056092
      CEOPOW |   .0005664   .0005571     1.02   0.311    -.0005363     .001669
  LNDERATIO3 |  -.0007267   .0016266    -0.45   0.656    -.0039461    .0024927
  LNSALESGRT |   .0009174   .0014323     0.64   0.523    -.0019176    .0037523
  LNINTCOVER |   .0026186   .0004187     6.25   0.000       .00179    .0034473
  LNDEBTRATIO |   .000597   .0008081     0.74   0.461    -.0010024    .0021965
       _cons |   6.920307   .0242732   285.10   0.000     6.872264    6.968351
-------------+----------------------------------------------------------------
     sigma_u |  .01407678
     sigma_e |  .00545367
         rho |  .86949192   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(14, 124) =    14.36                 Prob > F = 0.0000
```

Table 4.11.1C fixed effect model[Combine Sample]

```
> FIRMSIZ LNSALESGRT LNINTCOVER LNDEBTRATIO LNDERATIO3 CEOPOW, fe

note: DUMMY omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38
R-sq:  within  = 0.2762                         Obs per group: min =         7
       between = 0.0131                                        avg =       9.7
       overall = 0.0000                                        max =        10
                                                F(14,317)          =      8.64
corr(u_i, Xb)  = -0.9950                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  DUMMY#c.CEOPOW |
          1  |  -.0695505   .0377961    -1.84   0.067    -.1439134    .0048124
 DUMMY#c.FIRMSIZ |
          1  |  -.1844333    .084736    -2.18   0.030    -.3511492   -.0177173
 DUMMY#c.LNSALESGRT |
          1  |  -.3633769   .0986009    -3.69   0.000    -.5573717   -.16938
       DUMMY |          0  (omitted)
DUMMY#c.OPEFF |
          0  |    .087606   .0862469     1.02   0.311    -.0820826    .2572946
          1  |   .0108636   .5399103     0.02   0.984    -1.051397    1.073124
DUMMY#c.LNDEBTRATIO |
          1  |  -.0687609   .0589846    -1.17   0.245    -.1848117    .0472899
 DUMMY#c.LNDERATIO3 |
          1  |     .30585   .0931673     3.28   0.001     .1225456    .4891545
```

```
 DUMMY#c.LNINTCOVER |

       1  |  -.0048923   .0992719    -0.05   0.961    -.2002072    .1904227

          |

  FIRMSIZ |   .1764847   .0589465     2.99   0.003     .0605089    .2924606

LNSALESGRT |   .3642943   .0654242     5.57   0.000     .2355738    .4930148

LNINTCOVER |   .0075109   .0969016     0.08   0.938    -.1831407    .1981625

LNDEBTRATIO |   .069358   .0417962     1.66   0.098    -.0128751     .151591

LNDERATIO3 |  -.3065768   .0407696    -7.52   0.000    -.3867899   -.2263636

    CEOPOW |   .0701169    .024603     2.85   0.005     .0217111    .1185227

     _cons |   4.447085   1.157617     3.84   0.000     2.169501    6.724669

-----------+------------------------------------------------------------------

           sigma_u |  2.0436545

           sigma_e |  .28088452

               rho |  .98145985   (fraction of variance due to u_i)

------------------------------------------------------------------------------

F test that all u_i=0:     F(37, 317) =     2.09          Prob > F = 0.0004
```

Table 4.11.2A Random Effect Model[Non-Financial Sector Firms]

```
. xtreg LNROE OPEFF FIRMSIZ CEOPOW LNDERATIO3 LNSALESGRT LNINTCOVER
LNDEBTRATIO, re

Random-effects GLS regression                Number of obs      =       223

Group variable: COMPNUM                      Number of groups   =        23

R-sq:  within  = 0.2379                      Obs per group: min =         7

       between = 0.2698                                     avg =       9.7

       overall = 0.2172                                     max =        10

                                             Wald chi2(7)       =     62.26

corr(u_i, X)   = 0 (assumed)                 Prob > chi2        =    0.0000

------------------------------------------------------------------------------

    LNROE |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]

----------+-------------------------------------------------------------------

     OPEFF |   .0822284   .0470297     1.75   0.080    -.0099481    .1744049

   FIRMSIZ |  -.0067256   .0249103    -0.27   0.787    -.0555488    .0420976

    CEOPOW |   .0474827    .017644     2.69   0.007     .0129011    .0820643

LNDERATIO3 |  -.1987693   .0416808    -4.77   0.000    -.2804622   -.1170764

LNSALESGRT |    .343571   .0774773     4.43   0.000     .1917182    .4954238

LNINTCOVER |  -.0198758   .1200394    -0.17   0.868    -.2551488    .2153971

LNDEBTRATIO |  .0732556   .0358744     2.04   0.041     .0029431     .143568

     _cons |   6.007622   1.810999     3.32   0.001     2.458128    9.557115

----------+-------------------------------------------------------------------

     sigma_u |  .09447228

     sigma_e |   .3599538

         rho |  .06444436   (fraction of variance due to u_i)

------------------------------------------------------------------------------
```

Table 4.11.2B Random Effect Model [Financial Sector Firms]

```
. xtreg LNROE OPEFF FIRMSIZ CEOPOW LNDERATIO3 LNSALESGRT LNINTCOVER
LNDEBTRATIO, re

Random-effects GLS regression                   Number of obs      =       146
Group variable: COMPNUM                         Number of groups   =        15


R-sq:  within  = 0.3343                         Obs per group: min =         8
       between = 0.2564                                        avg =       9.7
       overall = 0.0424                                        max =        10
                                                Wald chi2(7)       =     41.89
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    OPEFF |  -.0009435    .010538    -0.09   0.929    -.0215976    .0197105
  FIRMSIZ |  -.0023766   .0011576    -2.05   0.040    -.0046454   -.0001079
   CEOPOW |   .0001489   .0004223     0.35   0.724    -.0006789    .0009766
LNDERATIO3 |   .0013854   .0016686     0.83   0.406     -.001885    .0046559
LNSALESGRT |   .0035666   .0015347     2.32   0.020     .0005586    .0065746
LNINTCOVER |   .0020943   .0004929     4.25   0.000     .0011283    .0030604
LNDEBTRATIO | -.0002307   .0008095    -0.28   0.776    -.0018173    .0013559
     _cons |   6.805404   .0235618   288.83   0.000     6.759224    6.851584
-------------+----------------------------------------------------------------
     sigma_u |  .00375539
     sigma_e |  .00545367
         rho |  .32165154   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Table 4.11.2C Random Effect Model [Combined Sample]

MY OPEFF FIRMSIZ CEOPOW LNDERATIO3 LNSALESGRT LNINTCOVER LNDEBTRATIO, re

```
Random-effects GLS regression                   Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38
R-sq:  within  = 0.2405                         Obs per group: min =         7
       between = 0.2763                                        avg =       9.7
       overall = 0.2182                                        max =        10
                                                Wald chi2(15)      =    103.84
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  DUMMY#c.OPEFF |
          1  |  -.0762606   .3845562    -0.20   0.843    -.8299769    .6774556
 DUMMY#c.FIRMSIZ |
          1  |    .005315    .045048     0.12   0.906    -.0829775    .0936075
  DUMMY#c.CEOPOW |
          1  |  -.0485651   .0190843    -2.54   0.011    -.0859695   -.0111606
DUMMY#c.LNSALESGRT |
          1  |  -.3379022   .0860918    -3.92   0.000    -.5066391   -.1691653
DUMMY#c.LNDEBTRATIO |
          1  |  -.0730744    .040482    -1.81   0.071    -.1524177     .006269
DUMMY#c.LNDERATIO3 |
          1  |   .2055387   .0697031     2.95   0.003     .0689231    .3421543
DUMMY#c.LNINTCOVER  |
          1  |   .0218982   .0960034     0.23   0.820    -.1662649    .2100613
       DUMMY |   .7476234   1.651829     0.45   0.651    -2.489903     3.98515
       OPEFF |   .0821496   .0381733     2.15   0.031     .0073313    .1569679
```

FIRMSIZ	-.0040679	.0202616	-0.20	0.841	-.0437799	.035644
CEOPOW	.0486664	.0142179	3.42	0.001	.0207999	.0765329
LNDERATIO3	-.2042575	.0329465	-6.20	0.000	-.2688315	-.1396835
LNSALESGRT	.3416399	.0605776	5.64	0.000	.22291	.4603699
LNINTCOVER	-.0199464	.0937627	-0.21	0.832	-.2037178	.1638251
LNDEBTRATIO	.0727499	.0285921	2.54	0.011	.0167105	.1287893
_cons	5.991744	1.417653	4.23	0.000	3.213195	8.770293

sigma_u	.08426746	
sigma_e	.28088452	
rho	.08257259	(fraction of variance due to u_i)

Table 4.11.3A Pooled Effect Model [Non-Financial Sector Firms]

```
. regress LNROE OPEFF FIRMSIZ CEOPOW LNDERATIO3 LNSALESGRT LNINTCOVER
LNDEBTRATIO

      Source |       SS       df       MS           Number of obs =     223
-------------+------------------------------        F(  7,   215) =    8.64
       Model |  8.73918187     7  1.24845455        Prob > F      =  0.0000
    Residual |  31.0828348   215  .144571325        R-squared     =  0.2195
-------------+------------------------------         Adj R-squared =  0.1940
       Total |  39.8220167   222  .179378453         Root MSE      =  .38023
------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
     OPEFF |    .080749   .0393581     2.05   0.041     .0031719    .1583262
   FIRMSIZ |  -.0162079   .0207396    -0.78   0.435    -.0570869    .0246711
    CEOPOW |   .0425131   .0152115     2.79   0.006     .0125304    .0724958
LNDERATIO3 |  -.1723522   .0389372    -4.43   0.000    -.2490998   -.0956047
LNSALESGRT |   .3559997   .0767189     4.64   0.000     .2047823    .5072171
LNINTCOVER |  -.0157105   .1191137    -0.13   0.895    -.2504906    .2190695
LNDEBTRATIO |  .0731405   .0323526     2.26   0.025     .0093716    .1369094
     _cons |     5.9635   1.784548     3.34   0.001      2.44605    9.480951
```

Table 4.11.3B Pooled Effect Model [Financial Sector Firms]

```
. regress LNROE OPEFF FIRMSIZ LNSALESGRT  CEOPOW LNDERATIO3 LNINTCOVER
LNDEBTRATIO

      Source |       SS       df       MS            Number of obs =     146
-------------+------------------------------         F(  7,   138) =    6.12
       Model |  .003002104     7  .000428872         Prob > F      =  0.0000
    Residual |  .009666241   138  .000070045         R-squared     =  0.2370
-------------+------------------------------         Adj R-squared =  0.1983
       Total |  .012668345   145  .000087368         Root MSE      =  .00837

------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
     OPEFF |   .0132585   .0096024     1.38   0.170    -.0057283    .0322454
   FIRMSIZ |   .0032823   .0009815     3.34   0.001     .0013417     .005223
LNSALESGRT |   .0033104   .0016843     1.97   0.051      -.00002    .0066408
    CEOPOW |   .0000311   .0002903     0.11   0.915    -.0005429    .0006052
LNDERATIO3 |   .0010898   .0015483     0.70   0.483    -.0019716    .0041512
LNINTCOVER |    .002026   .0005801     3.49   0.001      .000879     .003173
LNDEBTRATIO | -.0001382   .0007084    -0.20   0.846    -.0015389    .0012625
     _cons |   6.702587    .021587   310.49   0.000     6.659903    6.745271
------------------------------------------------------------------------------
```

Table 4.11.3C. Pooled Effect Model [Combine Sample]

```
> MY OPEFF FIRMSIZ CEOPOW LNDERATIO3 LNSALESGRT LNINTCOVER LNDEBTRATIO
      Source |       SS       df       MS              Number of obs =     369
-------------+------------------------------           F( 15,   353) =    6.70
       Model |   8.8516058    15  .590107053           Prob > F      =  0.0000
    Residual |   31.092501   353  .088080739           R-squared     =  0.2216
-------------+------------------------------           Adj R-squared =  0.1885
       Total |  39.9441068   368  .108543769           Root MSE      =  .29678
------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
      DUMMY#c.OPEFF |
        1  |  -.0674905   .3418933    -0.20   0.844    -.7398945    .6049135
    DUMMY#c.FIRMSIZ |
        1  |   .0194902   .0383844     0.51   0.612    -.0560006    .0949811
     DUMMY#c.CEOPOW |
        1  |   -.042482   .0157154    -2.70   0.007    -.0733896   -.0115744
 DUMMY#c.LNDERATIO3 |
        1  |    .173442   .0627536     2.76   0.006     .0500241    .2968599
 DUMMY#c.LNSALESGRT |
        1  |  -.3526893   .0845774    -4.17   0.000    -.5190281   -.1863504
 DUMMY#c.LNINTCOVER |
        1  |   .0177365   .0952224     0.19   0.852     -.169538    .2050111
DUMMY#c.LNDEBTRATIO |
        1  |  -.0732787   .0356193    -2.06   0.040    -.1433314   -.0032261
    DUMMY |   .7390865    1.58941     0.47   0.642    -2.386817     3.86499
    OPEFF |    .080749   .0307209     2.63   0.009     .0203301     .141168
  FIRMSIZ |  -.0162079   .0161882    -1.00   0.317    -.0480454    .0156296
```

CEOPOW	.0425131	.0118733	3.58	0.000	.0191618	.0658644
LNDERATIO3	-.1723522	.0303924	-5.67	0.000	-.2321251	-.1125794
LNSALESGRT	.3559997	.0598827	5.94	0.000	.2382279	.4737714
LNINTCOVER	-.0157105	.0929739	-0.17	0.866	-.1985629	.1671419
LNDEBTRATIO	.0731405	.0252527	2.90	0.004	.0234758	.1228053
_cons	5.9635	1.392925	4.28	0.000	3.224025	8.702976

Appendix 11: Cross Sectional Dependence Test Results

```
Fixed-effects (within) regression           Number of obs      =       301
Group variable: COMPNUM                     Number of groups   =        38

R-sq:  within  = 0.2345                     Obs per group: min =         6
       between = 0.0157                                    avg =       7.9
       overall = 0.0792                                    max =         8
                                            F(6,257)           =     13.12
corr(u_i, Xb)  = -0.7392                    Prob > F           =    0.0000
------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
LNDEBTRATIO |  .0353674   .0353332     1.00   0.318    -.0342121    .1049468
LNINTCOVER | -.0462111   .0246823    -1.87   0.062    -.0948165    .0023943
LNDERATIO3 |  -.2789506   .0416434    -6.70   0.000    -.3609562   -.1969449
   FIRMSIZ |   .1108364   .0560288     1.98   0.049     .0005024    .2211704
     OPEFF |   .1395954   .1100937     1.27   0.206    -.0772053     .356396
LNSALESGRT |   .3526924   .0713995     4.94   0.000     .2120899    .4932949
     _cons |   5.206478   1.039993     5.01   0.000     3.158485    7.254471
-----------+------------------------------------------------------------------
     sigma_u |  .27796033
     sigma_e |  .32025239
         rho |  .42965424   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 257) =     2.07           Prob > F = 0.0006
```

D. Pesaran's test of cross sectional independence = -0.114, Pr = 0.9089

Average absolute value of the off-diagonal elements = 0.344

E. Frees' test of cross sectional independence = 2.712

|---|

Critical values from Frees' Q distribution

alpha = 0.10 : 0.4892

alpha = 0.05 : 0.6860

alpha = 0.01 : 1.1046

F. Friedman's test of cross sectional independence = 4.553, Pr = 1.0000

```
Random-effects GLS regression                   Number of obs      =       301
Group variable: COMPNUM                         Number of groups   =        38
R-sq:  within  = 0.1728                         Obs per group: min =         6
       between = 0.1165                                        avg =       7.9
       overall = 0.1394                                        max =         8
                                                Wald chi2(6)       =     49.14
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
------------------------------------------------------------------------------
      LNROE |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+----------------------------------------------------------------
LNDEBTRATIO |  -.0172578   .017162    -1.01   0.315    -.0508948    .0163792
LNINTCOVER |  -.0403807   .0231552    -1.74   0.081    -.0857641    .0050027
LNDERATIO3 |  -.0847272   .0238756    -3.55   0.000    -.1315225   -.0379319
LNSALESGRT |   .3561247   .0633499     5.62   0.000     .2319613    .4802882
   FIRMSIZ |   .0379405   .0179733     2.11   0.035     .0027134    .0731676
     OPEFF |   .0166063    .036678     0.45   0.651    -.0552812    .0884938
     _cons |   5.556643   .4496768    12.36   0.000     4.675292    6.437993
------------+----------------------------------------------------------------
     sigma_u |  .05629138
     sigma_e |  .32025239
         rho |  .02996983   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

D. Pesaran's test of cross sectional independence = 3.890, Pr = 0.0001

Average absolute value of the off-diagonal elements = 0.339

E. Frees' test of cross sectional independence = 1.573

|---|

Critical values from Frees' Q distribution

alpha = 0.10 : 0.4892

alpha = 0.05 : 0.6860

alpha = 0.01 : 1.1046

F. Friedman's test of cross sectional independence = 7.158, Pr = 1.0000

.

Appendix 12: Detailed Regression Test Results

Table 13.1 Model 1

```
Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38
R-sq:  within  = 0.0507                         Obs per group: min =         7
       between = 0.0611                                        avg =       9.7
       overall = 0.0386                                        max =        10
                                                F(3,328)           =      5.84
corr(u_i, Xb)  = -0.3662                        Prob > F           =    0.0007

------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
     OPEFF |   .1247052   .0927298     1.34   0.180     -.057715    .3071254
   FIRMSIZ |   .0486072   .0436853     1.11   0.267    -.0373316    .1345459
LNSALESGRT |   .1688743    .048446     3.49   0.001     .0735702    .2641783
     _cons |   5.115375   .8292884     6.17   0.000      3.48398     6.74677
-----------+------------------------------------------------------------------
     sigma_u |  .14202038
     sigma_e |   .3162375
         rho |  .16783549   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 328) =     1.28           Prob > F = 0.1346
```

Table 13.2 Model 2a

```
Fixed-effects (within) regression           Number of obs      =       319
Group variable: COMPNUM                     Number of groups   =        36
R-sq:  within  = 0.0554                     Obs per group: min =         1
       between = 0.0759                                    avg =       8.9
       overall = 0.0468                                    max =        10
                                            F(4,279)           =      4.09
corr(u_i, Xb)  = -0.3258                    Prob > F           =    0.0031

------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
    OPEFF |   .1256983   .1029786     1.22   0.223    -.0770155     .328412
  FIRMSIZ |   .0426244   .0548243     0.78   0.438    -.0652974    .1505463
LNSALESGRT |    .185014   .0549468     3.37   0.001     .0768511    .2931768
LNDEBTRATIO |  -.0159905   .0212048   -0.75   0.451    -.0577323    .0257513
     _cons |    5.17195    1.00858     5.13   0.000     3.186556    7.157343
-----------+------------------------------------------------------------------
     sigma_u |  .14377165
     sigma_e |   .3420137
         rho |  .15017246   (fraction of variance due to u_i)
------------------------------------------------------------------------------
--
F test that all u_i=0:     F(35, 279) =     1.13           Prob > F = 0.2838
```

Table 13.3 Model 2b

```
Fixed-effects (within) regression           Number of obs      =       369
Group variable: COMPNUM                     Number of groups   =        38
R-sq:  within  = 0.1696                     Obs per group: min =         7
       between = 0.0150                                    avg =       9.7
       overall = 0.0547                                    max =        10
                                            F(4,327)           =     16.70
corr(u_i, Xb)  = -0.7331                    Prob > F           =    0.0000
------------------------------------------------------------------------------
     LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
    OPEFF |   .1239179   .0868594     1.43   0.155    -.0469558    .2947916
  FIRMSIZ |   .0964612   .0415129     2.32   0.021     .0147952    .1781271
LNSALESGRT |   .1619656   .0453902     3.57   0.000     .0726719    .2512593
LNDERATIO |  -.2345286   .0342699    -6.84   0.000    -.3019458   -.1671114
    _cons |   5.511081   .7789375     7.08   0.000      3.97872    7.043442
-----------+------------------------------------------------------------------
     sigma_u |  .23755958
     sigma_e |  .29621739
         rho |  .39141926   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 327) =     2.38           Prob > F = 0.0000
```

Table 13.4 Model 2c

```
Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38
R-sq:  within  = 0.0534                         Obs per group: min =         7
       between = 0.0588                                        avg =       9.7
       overall = 0.0379                                        max =        10
                                                F(4,327)           =      4.61
corr(u_i, Xb)  = -0.4185                        Prob > F           =    0.0012

------------------------------------------------------------------------------
      LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
------------+----------------------------------------------------------------
       OPEFF |   .1261987    .092752     1.36   0.175    -.0562673    .3086646
     FIRMSIZ |   .0563469   .0444178     1.27   0.205    -.0310338    .1437277
  LNSALESGRT |   .1806763   .0499665     3.62   0.000     .0823799    .2789727
  LNINTCOVER |   -.021651   .0224056    -0.97   0.335    -.0657282    .0224263
       _cons |   5.238234   .8390607     6.24   0.000     3.587596    6.888872
------------+----------------------------------------------------------------
     sigma_u |  .14628526
     sigma_e |  .31626943
         rho |  .17623429   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 327) =     1.29                 Prob > F = 0.1258
```

Table 13.5 Model 2d

```
Fixed-effects (within) regression               Number of obs      =       319
Group variable: COMPNUM                         Number of groups   =        36
R-sq:  within  = 0.2060                         Obs per group: min =         1
       between = 0.0113                                        avg =       8.9
       overall = 0.0667                                        max =        10
                                                F(6,277)           =     11.98
corr(u_i, Xb)  = -0.7376                        Prob > F           =    0.0000
------------------------------------------------------------------------------
      LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
------------+----------------------------------------------------------------
       OPEFF |   .1189673   .0947942     1.26   0.211    -.0676412    .3055759
     FIRMSIZ |    .109191   .0518438     2.11   0.036     .0071331    .2112488
  LNSALESGRT |   .1963116   .0518284     3.79   0.000     .0942841     .298339
  LNINTCOVER |  -.0209431   .0229773    -0.91   0.363    -.0661755    .0242893
  LNDEBTRATIO |  .0061883   .0197777     0.31   0.755    -.0327455     .045122
   LNDERATIO |  -.2916581   .0405868    -7.19   0.000    -.3715559   -.2117603
       _cons |   5.717194   .9382346     6.09   0.000     3.870219     7.56417
-------------+----------------------------------------------------------------
     sigma_u |  .26960786
     sigma_e |  .31469698
         rho |  .42328968   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(35, 277) =     2.40                 Prob > F = 0.0000
```

Table 13.6 Model 3a

```
Fixed-effects (within) regression               Number of obs      =       319
Group variable: COMPNUM                         Number of groups   =        36
R-sq:  within  = 0.0827                         Obs per group: min =         1
       between = 0.0795                                        avg =       8.9
       overall = 0.0530                                        max =        10
                                                F(5,278)           =      5.01
corr(u_i, Xb)  = -0.5702                        Prob > F           =    0.0002

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      CEOPOW |   .0702619   .0244643     2.87   0.004     .0221031    .1184208
       OPEFF |    .104977   .1019221     1.03   0.304    -.0956601    .3056142
     FIRMSIZ |   .0191632   .0547387     0.35   0.727    -.0885918    .1269182
  LNSALESGRT |   .1904939   .0542801     3.51   0.001     .0836415    .2973462
  LNDEBTRATIO | -.0137829   .0209487    -0.66   0.511    -.0550212    .0274554
      _cons |   5.126793   .9958528     5.15   0.000     3.166423    7.087163
-------------+----------------------------------------------------------------
     sigma_u |  .17670412
     sigma_e |  .33765564
         rho |  .21499088   (fraction of variance due to u_i)
------------------------------------------------------------------------------
--
F test that all u_i=0:     F(35, 278) =     1.25           Prob > F = 0.1657
```

Table 13.7 Model 3b

```
Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38
R-sq:  within  = 0.1841                         Obs per group: min =         7
       between = 0.0274                                        avg =       9.7
       overall = 0.0611                                        max =        10
                                                F(5,326)           =     14.71
corr(u_i, Xb)  = -0.7566                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      CEOPOW |   .0454599   .0189193     2.40   0.017     .0082405    .0826793
       OPEFF |   .1095742   .0864386     1.27   0.206    -.0604737    .2796222
     FIRMSIZ |   .0819135   .0416555     1.97   0.050    -.0000339     .163861
  LNSALESGRT |   .1622562   .0450627     3.60   0.000     .0736058    .2509065
  LNDERATIO3 |  -.2297315    .034081    -6.74   0.000    -.2967779   -.1626852
       _cons |   5.463455   .7735674     7.06   0.000     3.941641    6.985269
-------------+----------------------------------------------------------------
     sigma_u |  .24925741
     sigma_e |  .29407867
         rho |  .41806488   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 326) =     2.48           Prob > F = 0.0000
```

Table 13.8 Model 3c

```
Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38

R-sq:  within  = 0.0729                         Obs per group: min =         7
       between = 0.0814                                        avg =       9.7
       overall = 0.0467                                        max =        10
                                                F(5,326)           =      5.13
corr(u_i, Xb)  = -0.5539                        Prob > F           =    0.0002

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      CEOPOW |   .0527795   .0201327     2.62   0.009     .0131731    .0923858
       OPEFF |   .1094952   .0921507     1.19   0.236    -.0717899    .2907804
     FIRMSIZ |   .0404298    .044441     0.91   0.364    -.0469975    .1278571
  LNSALESGRT |      .1806   .0495238     3.65   0.000     .0831735    .2780266
  LNINTCOVER |  -.0211932   .0222077    -0.95   0.341    -.0648818    .0224953
      _cons |    5.18974    .831832     6.24   0.000     3.553304    6.826176
-------------+----------------------------------------------------------------
     sigma_u |  .16123085
     sigma_e |  .31346713
         rho |  .20920658   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 326) =     1.39                 Prob > F = 0.0734
```

Table 13.9 Model 3d

```
Fixed-effects (within) regression               Number of obs      =       319
Group variable: COMPNUM                         Number of groups   =        36
R-sq:  within  = 0.2260                         Obs per group: min =         1
       between = 0.0232                                        avg =       8.9
       overall = 0.0760                                        max =        10
                                                F(7,276)           =     11.51
corr(u_i, Xb)  = -0.7606                        Prob > F           =    0.0000

------------------------------------------------------------------------------
      LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
------------+----------------------------------------------------------------
    FIRMSIZ |   .0867451   .0519672     1.67   0.096    -.0155572    .1890475
     OPEFF |   .1010621   .0940054     1.08   0.283    -.0839965    .2861207
     CEOPOW |   .0603111   .0226147     2.67   0.008     .0157919    .1048303
 LNSALESGRT |   .1995842   .0512805     3.89   0.000     .0986336    .3005348
 LNINTCOVER |  -.0180973    .022753    -0.80   0.427    -.0628888    .0266941
 LNDEBTRATIO|   .0076895   .0195712     0.39   0.695    -.0308383    .0462172
  LNDERATIO |  -.2855917   .0402107    -7.10   0.000    -.3647503   -.2064331
      _cons |   5.654024   .9283534     6.09   0.000     3.826471    7.481577
------------+----------------------------------------------------------------
     sigma_u |  .28696938
     sigma_e |  .31128132
         rho |  .45942862   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(35, 276) =     2.52           Prob > F = 0.0000
```

Table 13.10 Model 3Ca

```
Fixed-effects (within) regression               Number of obs      =       319
Group variable: COMPNUM                         Number of groups   =        36
R-sq:  within  = 0.0827                         Obs per group: min =         1
       between = 0.0795                                        avg =       8.9
       overall = 0.0530                                        max =        10
                                                F(5,278)           =      5.01
corr(u_i, Xb)  = -0.5702                        Prob > F           =    0.0002

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    CEOPOW_C |   .0702619   .0244643     2.87   0.004     .0221031    .1184208
LNDEBTRATIO_C | -.0137829  .0209487    -0.66   0.511    -.0550212    .0274554
       OPEFF |    .104977   .1019221     1.03   0.304    -.0956601    .3056142
     FIRMSIZ |   .0191632   .0547387     0.35   0.727    -.0885918    .1269182
  LNSALESGRT |   .1904939   .0542801     3.51   0.001     .0836415    .2973462
       _cons |   5.538904   1.004441     5.51   0.000     3.561628    7.516179
-------------+----------------------------------------------------------------
     sigma_u |  .17670412
     sigma_e |  .33765564
         rho |  .21499088   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(35, 278) =     1.25          Prob > F = 0.1657
```

Table 13.11 Model 3Cb

```
Fixed-effects (within) regression           Number of obs      =       369
Group variable: COMPNUM                     Number of groups   =        38
R-sq:  within  = 0.1841                     Obs per group: min =         7
       between = 0.0274                                    avg =       9.7
       overall = 0.0611                                    max =        10
                                            F(5,326)           =     14.71
corr(u_i, Xb)  = -0.7566                    Prob > F           =    0.0000
------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       OPEFF |   .1095742   .0864386     1.27   0.206    -.0604737    .2796222
     FIRMSIZ |   .0819135   .0416555     1.97   0.050    -.0000339     .163861
  LNSALESGRT |   .1622562   .0450627     3.60   0.000     .0736058    .2509065
  LNDERATIO_C|  -.2297315    .034081    -6.74   0.000    -.2967779   -.1626852
    CEOPOW_C |   .0454599   .0189193     2.40   0.017     .0082405    .0826793
       _cons |   4.572763   .7873802     5.81   0.000     3.023776    6.121751
-------------+----------------------------------------------------------------
     sigma_u |  .24925741
     sigma_e |  .29407867
         rho |  .41806487   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 326) =     2.48           Prob > F = 0.0000
```

Table 13.12 Model 3Cc

```
Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38
R-sq:  within  = 0.0729                         Obs per group: min =         7
       between = 0.0814                                        avg =       9.7
       overall = 0.0467                                        max =        10
                                                F(5,326)           =      5.13
corr(u_i, Xb)  = -0.5539                        Prob > F           =    0.0002

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       OPEFF |   .1094952   .0921507     1.19   0.236    -.0717899    .2907804
     FIRMSIZ |   .0404298    .044441     0.91   0.364    -.0469975    .1278571
  LNSALESGRT |      .1806   .0495238     3.65   0.000     .0831735    .2780266
    CEOPOW_C |   .0527795   .0201327     2.62   0.009     .0131731    .0923858
  LNINTCOVER_C| -.0211932   .0222077    -0.95   0.341    -.0648818    .0224953
       _cons |   5.214921   .8511688     6.13   0.000     3.540445    6.889398
-------------+----------------------------------------------------------------
     sigma_u |  .16123085
     sigma_e |  .31346713
         rho |  .20920658   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 326) =     1.39           Prob > F = 0.0734
```

Table 13.13 Model 3Cd

```
Fixed-effects (within) regression               Number of obs      =       319
Group variable: COMPNUM                         Number of groups   =        36
R-sq:  within  = 0.2260                         Obs per group: min =         1
       between = 0.0232                                        avg =       8.9
       overall = 0.0760                                        max =        10
                                                F(7,276)           =     11.51
corr(u_i, Xb)  = -0.7606                        Prob > F           =    0.0000
------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      FIRMSIZ |   .0867451   .0519672     1.67   0.096    -.0155572    .1890475
        OPEFF |   .1010621   .0940054     1.08   0.283    -.0839965    .2861207
   LNSALESGRT |   .1995842   .0512805     3.89   0.000     .0986336    .3005348
     CEOPOW_C |   .0603111   .0226147     2.67   0.008     .0157919    .1048303
   LNINTCOVER_C|  -.0180973    .022753    -0.80   0.427    -.0628888    .0266941
   LNDERATIO_C|  -.2855917   .0402107    -7.10   0.000    -.3647503    -.206433
   LNDEBTRATIO_C| .0076895   .0195712     0.39   0.695    -.0308383    .0462172
        _cons |    4.32544   .9606799     4.50   0.000     2.434249    6.216631
-------------+----------------------------------------------------------------
         sigma_u |  .28696937
         sigma_e |  .31128132
             rho |  .45942861   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(35, 276) =     2.52          Prob > F = 0.0000
```

Table 13.14 Model 4a

```
Fixed-effects (within) regression               Number of obs      =       319
Group variable: COMPNUM                         Number of groups   =        36

R-sq:  within  = 0.0913                         Obs per group: min =         1
       between = 0.1059                                        avg =       8.9
       overall = 0.0662                                        max =        10

                                                F(6,277)           =      4.64
corr(u_i, Xb)  = -0.5215                        Prob > F           =    0.0002

------------------------------------------------------------------------------
       LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
c.CEOPOW_C#c.LNDEBTRATIO_C |   .0140918   .0086875     1.62   0.106    -.0030101    .0311936
                           |
           CEOPOW_C |   .0688464   .0244085     2.82   0.005     .0207967    .1168961
      LNDEBTRATIO_C |  -.0167257   .0209662    -0.80   0.426     -.057999    .0245476
              OPEFF |    .095761   .1017831     0.94   0.348    -.1046057    .2961277
            FIRMSIZ |    .010922   .0548148     0.20   0.842    -.0969845    .1188285
         LNSALESGRT |   .1915124   .0541252     3.54   0.000     .0849633    .2980614
              _cons |   5.683366   1.005459     5.65   0.000     3.704055    7.662677
-------------------+----------------------------------------------------------------
                   sigma_u |  .16652714
                   sigma_e |  .33666939
                       rho |  .19656766   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(35, 277) =     1.19                 Prob > F = 0.2205
```

Table 13.15 Model 4b

```
Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38

R-sq:  within  = 0.3336                         Obs per group: min =         7
       between = 0.0390                                        avg =       9.7
       overall = 0.1138                                        max =        10

                                                F(6,325)           =     27.11
corr(u_i, Xb)  = -0.7803                        Prob > F           =    0.0000

------------------------------------------------------------------------------
             LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
c.CEOPOW_C#c.LNDERATIO_C | .1033959   .0121097     8.54   0.000     .0795727    .1272191
                         |
              OPEFF |   .0941417   .0782608     1.20   0.230    -.0598199    .2481034
            FIRMSIZ |   .0848579    .037706     2.25   0.025     .0106792    .1590365
         LNSALESGRT |     .10803   .0412799     2.62   0.009     .0268204    .1892396
        LNDERATIO_C |  -.1511873   .0321907    -4.70   0.000    -.2145159   -.0878588
           CEOPOW_C |   .0497271   .0171321     2.90   0.004     .0160232     .083431
              _cons |   4.783408   .7131237     6.71   0.000     3.380487    6.186329
-------------------+----------------------------------------------------------------
                sigma_u |   .2973853
                sigma_e |   .2661852
                    rho |  .55519232   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 325) =     4.17             Prob > F = 0.0000
```

Table 13.16 Model 4c

```
Fixed-effects (within) regression               Number of obs      =       369
Group variable: COMPNUM                         Number of groups   =        38

R-sq:  within  = 0.0740                         Obs per group: min =         7
       between = 0.0859                                        avg =       9.7
       overall = 0.0485                                        max =        10

                                                F(6,325)           =      4.33
corr(u_i, Xb)  = -0.5486                        Prob > F           =    0.0003

------------------------------------------------------------------------------
               LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------------+--------------------------------------------------------------
c.CEOPOW_C#c.LNINTCOVER_C| -.0079554 .0128934  -0.62   0.538    -.0333204    .0174097
                         |
               OPEFF |   .1088967   .0922435     1.18   0.239     -.072573    .2903664
             FIRMSIZ |    .040174   .0444852     0.90   0.367    -.0473413    .1276892
          LNSALESGRT |   .1841355    .049901     3.69   0.000     .0859658    .2823051
            CEOPOW_C |   .0536758   .0202041     2.66   0.008     .0139285    .0934232
        LNINTCOVER_C |  -.0044032   .0351369    -0.13   0.900    -.0735278    .0647213
               _cons |   5.201549   .8522541     6.10   0.000     3.524918     6.87818
---------------------+--------------------------------------------------------------
                 sigma_u |  .16016612
                 sigma_e |   .3137653
                     rho |  .20671076   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(37, 325) =     1.36                 Prob > F = 0.0856
```

Table 13.17 Model 4d

```
Fixed-effects (within) regression               Number of obs      =       319
Group variable: COMPNUM                         Number of groups   =        36
R-sq:  within  = 0.3894                         Obs per group: min =         1
       between = 0.0337                                        avg =       8.9
       overall = 0.1340                                        max =        10
                                                F(10,273)          =     17.41
corr(u_i, Xb)  = -0.7848                        Prob > F           =    0.0000

------------------------------------------------------------------------------
             LNROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
c.CEOPOW_C#c.LNDEBTRATIO_C| .0028859 .0073253    0.39   0.694    -.0115354    .0173071
c.CEOPOW_C#c.LNDERATIO_C | .1184322 .0141123     8.39   0.000     .0906495     .146215
c.CEOPOW_C#c.LNINTCOVER_C| -.0062705 .0159964   -0.39   0.695    -.0377625    .0252215
            FIRMSIZ |   .0827961   .0466539     1.77   0.077     -.009051    .1746431
              OPEFF |   .0585379   .0841942     0.70   0.487    -.1072145    .2242903
         LNSALESGRT |   .1321322   .0468789     2.82   0.005     .0398421    .2244222
           CEOPOW_C |   .0596112   .0203406     2.93   0.004     .0195668    .0996556
       LNINTCOVER_C |  -.0095987   .0423285    -0.23   0.821    -.0929305     .073733
        LNDERATIO_C |  -.1868542   .0377349    -4.95   0.000    -.2611426   -.1125657
      LNDEBTRATIO_C |   .0119276   .0178376     0.67   0.504    -.0231892    .0470444
              _cons |   4.713709   .8640817     5.46   0.000     3.012598    6.414819
-------------------+----------------------------------------------------------------
                  sigma_u |   .3480146
                  sigma_e |  .27798426
                      rho |  .61048703   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(35, 273) =     4.13             Prob > F = 0.0000
```

Appendix 13: Moi University Letter of Introduction

MOI UNIVERSITY
POSTGRADUATE OFFICE
SCHOOL OF BUSINESS AND ECONOMICS

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0736138770
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Telex No. MOIVARSITY 35047

P.O. Box 3900
Eldoret.
Kenya.
Eldoret

RE: SBE/PGM/021/14 **DATE:** 3 May, 2021

TO WHOM IT MAY CONCERN

RE: ODHIAMBO ALBERT – SBE/BM/DPHIL/026/12

The above named is a bonafide student of Moi University School of Business and Economics, undertaking Doctorate of Philosophy in Business Management (Finance Option).

He has completed coursework, defended his proposal, and is proceeding to the field to collect data for his research titled: "*Financial Leverage CEO Power and Financial Performance of Listed Companies at the Nairobi Securities Exchange, Kenya*".

Any assistance accorded to him will be highly appreciated.

Yours faithfully,

SCHOOL OF BUSINESS & ECONOMICS
MOI UNIVERSITY
P.O. Box 3900 ELDORET 30100

DR. RONALD BONUKE
ASSOCIATE DEAN, SB&E

Appendix 14: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 985982

Date of Issue: 23/August/2021

RESEARCH LICENSE

This is to Certify that Mr.. Albert onyango Odhiambo of Moi University, has been licensed to conduct research in Nairobi on the topic: Financial Leverage, CEO Power and Financial Performance of Listed Companies at the Nairobi Securities Exchange, Kenya for the period ending : 23/August/2022.

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985982

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Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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