

**FINANCING STRUCTURE AND FINANCIAL PERFORMANCE OF LISTED MANUFACTURING
FIRMS ON NAIROBI SECURITIES EXCHANGE, KENYA: A DYNAMIC PANEL APPROACH**

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DECLARATION AND APPROVAL

Declaration

This thesis is my original work and has not been presented for award of a degree in any other university.

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ABSTRACT

Globally, the manufacturing industry is a crucial engine for sustaining economic growth and development. However, in Kenya, the sector's contribution to the economy has stagnated at 10% of the gross domestic product (GDP), contributing to an average of 10% from 1964-1973 and marginally increased to 13.6% from 1990-2007 and has been below 10% in recent years further dropping to 8.4% in 2017 and 7.1% in 2020. The renewed effort to revive the sector through the National Government Big 4 Agenda is expected to grow its contribution to GDP to 15% by 2022. Financing structure is imperative to optimize a company's profitability and hence improve its competitiveness to realize the National Government Medium Term Development Agenda. Findings by previous researchers in the subject have not been conclusive. This study applied Dynamic Unbalanced Panel analysis techniques using Secondary data for 10-year period (2010 - 2019) with the study population comprising of 9 listed firms. A census of the firms was done and resulted to 86 observations. Focus was on debt, equity, retained earnings and asset tangibility moderated by economic growth rate and earnings volatility on performance which was proxied by Tobin's Q and EVA. Four theories guided the study namely; Modigliani & Miller, trade – off, pecking order and agency theories. Longitudinal research design was used as it is appropriate when dealing with panel data. STATA version 15 was used for analysis. Model estimation followed a two Step System GMM testing the study hypotheses at 5 % significance level. Pearson correlation coefficient was used to show the strength and direction of association among the study variables. Short term debt financing was negatively and significantly correlated to Tobin Q; ($r = -0.4790$) and negatively correlated with LnEVA ($r = -0.5032$) giving negative and significant effect on performance as shown by the regression weights estimated by GMM. Long term debt ratio (LTDR) has a fairly moderate and positive correlation with Tobin Q ($r = 0.4388$). It is also strongly correlated with Ln EVA ($r = 0.6570$). The regression coefficients were also positive and significant for both performance proxies. Equity financing had a negative correlation with Tobin Q ($r = -0.2682$). The regression weight being ($\beta = -0.1674526$; $p = 0.002 < 0.005$). On the other hand, EAR was found to have positive correlation with Ln EVA ($r = 0.5218$). The regression coefficient was positive but not significant ($\beta = 0.2901601$; $p = 0.087 > 0.05$) and hence concluding that it improved performance marginally. RR had a moderate positive correlation ($r = 0.3197$) with Tobin Q and a strong positive correlation ($r = 0.5997$) Ln EVA respectively. The regression coefficients were also positive and significant. ATNG was positively correlated with Tobin Q ($r = 0.4331$) and LnEVA ($r = 0.3683$). The regression weights were also positive and significant. The study therefore concluded that financing structure is imperative as it directly determines the financial burden firms face in their operations and recommended that the managers of MAFs need to minimize use of short time financing sources and concentrate on recovering cash flow quickly to minimize need for short term financing. Long term financing sources improve performance and need to be enhanced. Additionally, the government need to reduce the cost of borrowing. Equity financing need to be limited. Retained earnings does not cost anything as it does not require any payment of cash hence should be applied. Lastly, MAFs need to consider project financing to limit exposure to credit risk. Future studies can consider a balanced panel analysis and other panel data econometric techniques.

DEDICATION

This research Thesis is dedicated to my parents Aloys Mokuu and Josephine Kemunto. Thank you very much for your encouragement, support, prayers and for inculcating the value of education. To my sisters Risper Gesare, Ruth Monchere, Dorcas Nyakara and Mary Moraa, thank you for the moral support.

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ABBREVIATIONS AND ACRONYMS

ADF - Augmented Dickey Fuller

CMA - Capital Markets Authority

DER – Debt equity ratio

DW – Durbin Watson

EAR – Equity to assets ratio

EGR – Economic growth rate

EPS – Earnings Per Share

EVA – Economic value added

EVOL – Earnings volatility

FE – Fixed effects

GDP – Gross Domestic Product

GMM – Generalized method of moments

IPS – Im – Pesaran - Shin

KAM – Kenya Association of Manufacturers

Kd – Cost of debt

Ke – Cost of equity

KNBS - Kenya National Bureau of Statistics

KRA – Kenya Revenue Authority

LLC – Levin Lin Chu

LM – Lagrange Multiplier

LnEVA – Natural Logarithm of Economic Value Added

LTDR – Long term debt ratio

MAFs – Manufacturing firms

MVA – Market Value Added

NOPAT – Net operating profit after tax

NSE – Nairobi Securities Exchange

OLS – Ordinary least square

PLS – Partial Least Square

PP – Philip - Perron

PPE – Property, Plant and Equipment

PSCE – Panel corrected standard errors

RE – Retained earnings

RME – Random effects

ROA – Return on Assets

ROCE – Return on Capital Employed

ROE – Return on Equity

RR – Retention ratio

SDGs' – Strategic Development Goals

STATA – Statistics and Data

STDR – Short term debt ratio

TDR – Total debt ratio

UNIDO – United Nations Industrial Development Organization

VIF – Variance Inflation Factor

WACC – Weighted average cost of capital

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Financing structure is a crucial subject in corporate finance as it's vital in enhancing firm value and performance in the competitive and turbulent business environment. Financing structure refers to the combination of debt and equity employed by a firm to finance the acquisition of its productive assets to support operations for the company's prosperity (Vo, 2017; Baker & Martin, 2011; Brounen, Jong & Koedijk, 2006). This therefore encompasses short term debt, long term debt, preferred stock and common stock or equity, and retained earnings for financing operations and capital investments. Literature in relation to Financing structure has been growing since the initial work of Modigliani & Miller (1958). Despite of this, there is however no theory that has explained the optimal financing choice exhaustively even though financial economists have discussed it for decades.

Financing structure decisions generally influence performance of firms (Karani, 2015; Cuibing, 2019). The financing choice considering a mix of the various financing options has an influence on the value of the firm and ultimately on shareholders wealth since a chosen option influences financing costs which in turn impact on the risks a firm is subjected to (Baker & Martin, 2011). It is therefore a challenging task for managers to decide on the financing choice that can minimize the costs and risks of financing and hence yield better returns by increasing shareholder wealth and firm value.

The relationship between firm value and providers of funds is well presented by the Pie Model which shows the proportion of debt to equity in relative terms. This proportion well defines the financing structure and further suggests that the choice has many implications on the firm and thus should be a strategic one and managed well to serve the diverse interest of shareholders as well as stakeholders (Ross, Westerfield, Jaffe & Kakani, 2009)

Basically, there are different financing options comprising of short-term and long-term debt, equity and retained earnings financing (Akingunola, Olawale, & Olaniyan, 2018). Short term debt includes the financial obligations with a maturity period of one year or less. Long term debt is made up of the financial obligations with maturity of more than one financial year. On the other hand, retained earnings comprise of reserved profits that are not distributed to the shareholders. Equity is made up of owners invested funds in the firm. All these funds make up the financing structure which can be equity, debt, retained earnings whose contributors can be the shareholders, bond or debenture holders who expect a return on their investment.

Most companies prefer to use more debt in their financing mix with expectations of achieving better financial performance as the proportion of debt increases. This however, subjects the firm to greater risk since increasing debt expands the potential for reduction in gains at a rate higher than the potential for increase in returns. Regardless of this principle of increasing risk as debt expands, some firms apply more debt and also perform better than others who apply minimal debt. To improve the overall market value, firms need to be innovative and diversify financing choices by either adopting lease financing, issuance of convertible bonds, warrants, forward contracts, trade bond swaps and other marketable securities in various proportions to minimize costs of financing and in turn raise the market value of the firm (Abor, 2005).

Deterioration of firm value has adverse effects on both the firm and its stakeholders. A notable case whose effects spread throughout the world occurred on September 15, 2008, in the US when the Lehman Brothers filed for bankruptcy. The bankruptcy was due to a conglomerate of a multiplicity of factors made up of high leverage, adoption of risky investments in its portfolio which subjected the firm into serious liquidity and cashflow problems. To many, Lehman was seen to be “too big to fail” and therefore in the event of any cashflow challenge, the US government could bail it out if no buyer could be interested in purchasing it. However, the company went into bankruptcy and none of the options presented itself to save the company. Borrowing was at its highest with the Leverage ratio having enlarged to 31:1, meaning that a 3–4% decrease in its asset value could water down its capital. Lehman’s clients were obligated to provide collateral which

was in turn being used by Lehman for various purposes until it became a nightmare sorting out who owed what to whom. The result was that clients lost their confidence with the company, liquidity and cashflow strain set in as lenders declined to extend roll over funding and this ultimately forced it to bankruptcy (Hull, 2015).

The manufacturing sector is the foundation of innovation and technical change since most innovations are first introduced and commercialized in this sector, making it the core driver of technical change and economic development hence occupies an extraordinary position in the minds of policy-makers. (UNIDO, 2013). Industrialization is therefore critical to economic growth and development. It is increasingly being recognized and supported that market forces only cannot steer industrialization to the level of Germany, Japan or the United States which begun industrialization early enough. To trounce the challenge, greater focus is being made by Policymakers developing frameworks on industrial policies aimed at establishing resource centers to allocate resources to specific manufacturing sectors in an attempt to promote and revive the sector (UNIDO, 2020).

Globally, the manufacturing sector is instrumental in fostering and sustaining economic growth and development, to create a resilient and robust economy that can create jobs and therefore reduce dependency and alleviate poverty. Generally, very few nations in the world have achieved high levels of economic growth and stability, accompanied with high job creation ability without having a robust manufacturing industry. The sector was found to be the main engine of “fast growth” in UK and Japan and has been essential for those countries whose economies are catching up as it ensures a sustained growth to achieve rapid development and economic stability (The Growth Report, 2008; Felipe, Jesus, Aashish, & Changyong, 2014; Kaldor, 1967). High growth economies have been persistently supported by manufacturing, industrialization and exports. The Four Asian Tiger countries of Singapore, South Korea, Taiwan and Hong Kong have achieved and consistently maintained high levels of economic growth since the 1960s making them join the league of the wealthiest nations in the world. South Korea and Taiwan are the hubs for global manufacturing and information technology while Singapore and Hong Kong are prominent global financial centers.

Further, manufacturing is the core drive of economic success of high – income countries in Europe and North America. Moreover, many countries in East and South East Asia have been able to transform their economies from low to middle income status over the past 50 years thus improving their citizen’s standards of living. A thriving manufacturing sector contributes to not only improved standards of living of the nationals of a country and infrastructural development, but directly and indirectly steers a nation toward the realization of SDG’s, socio – economic and environmental well being through job creation, better working environment fostered by innovation and production and utilization of green and new technologies (Yong, 2020).

Reorientation of the Chinese economy from export to a consumer driven economy is instrumental in shaping the manufacturing sector in Kenya. Financing options relying on Low cost of capital in Asian countries has enabled the manufacturing sector in those countries to access funding cheaply, thereby speeding the sector’s development. This is a component of financing structure which if provided, could enhance productivity of the sector in Kenya and hence profitability (Were, 2016). Historically, Kenya’s economy has benefited little from manufacturing as the sector’s contribution to the gross domestic product (GDP) has been deteriorating. Between 1964-73, it accounted for 10% of GDP and improved to 13.6% from the year 1990 to 2007 but thereafter reduced to below 10%, reaching its lowest in the year 2017 being 8.4%. There is however a renewed effort by the government to revamp the sector through the Big 4 Agenda. Through this, the government expects to achieve 15% contribution to GDP by the year 2022 from the manufacturing sector to realize the expected economic resilience and stability (KAM, 2018).

Past studies on the subject have found divergent results and thus led to divergent conclusions on the same. For instance, studies have established a positive relation, others have come up with negative while others concluded that financing structure and firm performance has both positive and negative correlation while others showed no link between financing structure and firm performance. A study by Pouraghajan, Malekian, Emamgholipour, Lotfollahpour & Bagheri (2012) affirmed a significant relationship between capital structure and firm performance of firms listed on the Tehran Stock

Exchange (TSE). Nirajini & Priya (2013) asserted that financing structure has a significant relationship with firm performance in Sri Lanka. There was a positive correlation between financial structure with performance and an increase in debt will improve on the firm's performance (Margaritis & Psillaki (2007). On the same note, Cheng, Liu and Chien (2010) if the debt is at a moderate level, then financing structure will amplify performance. Aman (2011), Park & Jang (2013) also found a positive relationship between financing structure and firm performance. The authors concluded that debt can be used to decrease free cash flows thus increasing profitability.

Onalapo & Kojala (2010) found that profitability is negatively affected by leverage. Many profitable firms prefer lower leverage, Jang (2011). Soumadi & Hayajneh (2012) studied Jordanian firms and found a negative correlation between firm performance and leverage. This finding also agrees with Mohamad and Abdullah (2012) in the case of companies listed on Bursa Malaysia. Al-Taani (2013) adopted short term debt to total assets, long term debt to total assets and total debt to equity as proxies for capital structure and on performance of firms listed on Amman Stock Exchange (ASE) and established that capital structure and firm performance were insignificant and negatively correlated. Some studies however reveal zero or very poor relationship between leverage and firm performance, (Tang & Jang (2007). Ebaid (2009) studied the relationship between financing structure and performance of Egyptian firms and found that financing structure has poor or no effect on firm performance. The finding also concurs with Saeedi & Mahmoodi (2011), who revealed the existence of insignificant relationship between capital structures performances of firms listed on the Tehran Stock Exchange (TSE).

Additionally, Tailab (2014) found that total debt has a significant negative effect on ROE and ROA while short term debt has a positive effect on ROE while Salim & Yadav (2012) found that TDR had a negative correlation with ROE, EPS and ROA but had a strong positive and significant relationship Tobin Q. Further, Buigut, Soi, Koskei & Kibet (2013) found that equity financing negatively affected performance, while a study by Musila (2015) found that equity financing, proxied by equity ratio influenced ROE positively and a study by Omollo, Muturi & Wanjare (2018) further noted that retention ratio has a significant and positive effect on ROA. Total Equity Ratio has a positive

significant effect on ROA while ROE is insignificantly affected by equity financing. Concerning asset tangibility, their effect on performance is negative (Ansari & Gowd, 2017). This is further supported by Mule & Mukras (2015) found asset tangibility to have a negative but not significant effect on ROA and thus disagreeing with Musah, Kong & Osei (2019) who found ATNG to have a positive relation with ROA. This therefore created an empirical gap for the current study.

A number of theories have been advanced to look at the financial structure; for instance, Modigliani & Miller (1958) financing structure irrelevance, Modigliani & Miller (1963) which modified their earlier model on capital structure irrelevance theory. Trade off Theory which originated from the study of Kraus & Litzenberg (1973), which posits that the financing decision of a firm entails a trade-off between the tax benefit of debts and the costs of financial distress. When firms are adopting the trade-off theory, each firm sets its own targeted debt-to-equity ratio and endeavours to achieve the expected optimum which varies with the characteristics of different firms (Myers, 1984). This theory was later contradicted by Pecking Order Theory. This theory was first proposed by Donaldson in 1961 who posits that managers prefer internal equity financing for growth. If there is no internal equity financing, he recommends asset conversion and debt issuance being the last resort. Stewart Myers & Majluf (1984) later popularized the theory by supporting that firms ought to pursue an order of hierarchical financing. This theory therefore doesn't take an optimal capital structure position as proposed by Trade – Off Theory. Empirically, earlier researchers who applied these theories to explain the financing structure on firm performance focused mostly on a single financing variable and accounting based performance measures, hence the current study seeks to fulfil this gap by incorporating more financing variables and options and focusing on the economic based performance measures.

Various firms in Kenya have been faced with financial distress resulting either from huge debts, declined business operations, lack of cash flow to run operations and payment of their creditors on time (CMA statistical Bulletin, 2015). For instance, firms like Mumias Sugar Co (Annual report, 2013), Kenya Airways (Annual report, 2014) both disclosed their cash flow shortages to settle their debt obligations. A total of nine companies have

previously been suspended from trading, these including Uchumi Supermarket suspended in 2006, A Baumann suspended in 2008, CMC and EAPCC suspended in 2011, BOC and Carbacid suspended in 2005, City trust and Rea Vipingo in 2013 and Hutching Biemer suspended in 2014. Other companies were also delisted including Unilever Tea delisted 2008, Access Kenya 2013 and CMC Holding 2014. These companies were mainly suspended or delisted for various reasons with the major one being financial distress and disclosures (CMA Statistical Bulletin, 2019).

The study found out that some studies adopted measures of firm financial that were mostly of the accounting origin. Researchers mostly used either accounting based measures of profitability for instance ROS, ROS and ROA or stock market-based measures such as Tobin's Q and market return. The current study endeavors to consider economic based measures incorporating Economic Value Added (EVA) and Tobin Q. Most of extant studies on the subject had limited information in modeling the relationship between the studies variables. Majority of the studies made use of regression analysis, other important aspects such as Ordinary Least Square (OLS) mandatory diagnostic tests for example normality, heteroscedasticity, multicollinearity, and autocorrelation tests, stationarity tests, co-integration tests which are crucial in financial panel data modeling were missing. This puts to question the reliability of the models so developed and hence the current study sought to incorporate this.

The decisions regarding financings structure are key to management since it has an effect on return and risk, which also impacts firm's value and market share. This is due to the fact that the mix has cost implications when it comes to sourcing of the funds for the business and hence its value. Therefore, the firm managers should make a critical analysis of the various financing options. Since the manufacturing sector is one of the Big 4 agenda of the government Mid – term Economic Plan, prudent financing options need to be sought if it really has to realize its potential. This therefore necessitated the current study for sustained growth of the Kenya's manufacturing sector and hence economic growth.

1.2 Statement of the problem

The success of the Kenyan Manufacturing is vital to propel the country to realize the Big 4 agenda. The agenda is the country's development blueprint comprising of four key pillars namely; food security, affordable housing, affordable healthcare and manufacturing. Manufacturing being key to propel the nation to be fully industrialized and hence spearhead development depends on its ability to identify appropriate financing structure that will enable it to generate viable returns to shareholders and stay afloat. Globally, the sector was found to be the main engine of fast growth. The sector's contribution to Kenya's GDP has been on a downward trajectory to an average of less than 10%. For instance, its contribution to GDP was at 10% in 2014, declined to 9.4% in 2015, 9.1% in 2016, 8.4% in 2017, 7.7% in 2018 and further declining to 7.61% in 2020 (KAM, 2021). This is an indication of deindustrialization hence, government in collaboration with its trading partners has entrenched the revival of the manufacturing sector to improve its contribution to GDP to 15% by 2022 so that the economy can realize stability and hence become resilient amidst shocks (KAM, 2018). Considering that most developed nations including the Asian tigers have achieved their current status majorly due to a thriving manufacturing sector, the role and financial health of the manufacturing sector is critical for any country to realize sound economic growth and prosperity. Empirical studies have not shown consistent results maybe because of the different economic conditions and different variable combination and measurement. Most of past studies have taken place in USA, Europe and Asian Tiger Nations that have different economic activities, opportunities and comparatively robust and large manufacturing sectors. The current study further sought to estimate both the short run and long run dynamics to test the behavior of the model in both situations.

1.3 Objectives of the study

1.3.1 General objective of the study

This study aimed at analyzing the effect of financing structure and financial performance of manufacturing firms listed on the Nairobi securities exchange, Kenya.

1.3.2 Specific Objectives of the Study

The study was guided by the following objectives:

- i. To establish the effect of debt financing on financial performance of listed manufacturing firms in the Nairobi Securities Exchange, Kenya.
- ii. To determine the effect of equity financing on financial performance of listed manufacturing firms in the Nairobi Securities Exchange, Kenya.
- iii. To examine the effect of retained earnings on financial performance of listed manufacturing firms in the Nairobi Securities Exchange, Kenya.
- iv. To establish the effect of asset tangibility on financial performance of listed manufacturing firms in the Nairobi Securities Exchange, Kenya.
- v. To assess the moderating effects of economic growth rate and earnings volatility on the relationship between financing structure and financial performance of listed manufacturing firms in the Nairobi Securities Exchange, Kenya.

1.4 Research Hypotheses

H₀₁: There is no significant relationship between Debt financing and Financial performance of manufacturing firms listed on the Nairobi Securities Exchange, Kenya.

H₀₂: There is no significant relationship between Equity financing and Financial performance of manufacturing firms listed on the Nairobi Securities Exchange, Kenya.

H₀₃: There is no significant relationship between Retained Earnings financing and Financial performance of manufacturing firms listed on the Nairobi Securities Exchange, Kenya.

H₀₄: There is no significant relationship between Asset Tangibility financing and Financial performance of manufacturing firms listed on the Nairobi Securities Exchange, Kenya.

H₀₅: Economic growth rate and earnings volatility do not have a significant moderating effect on the relationship between financing structure and financial performance of manufacturing firms listed on the Nairobi Securities Exchange, Kenya.

1.5 Significance of the Study

The key aim of this study was to assess the influence of financing structure on financial performance of manufacturing firms listed on NSE, Kenya. The envisioned beneficiaries of the study's outcome are the players in the manufacturing sector, investors, financial advisers, Government, other regulatory bodies and other researchers.

1.5.1 Manufacturing sector

This study's findings will enable the players in the manufacturing sector to make financing choices that don't strain the revenue generating ability of their firms. This will foster wealth creation in the sector and build robust manufacturing enterprises that can support the financial system and avoid systemic failures.

1.5.2 Investors and financial advisers

The findings of this study will enable investors and financial advisers to make informed, rational and sound financing structure mix and decisions striking a balance between cost and financial implications of the sources.

1.5.3 Government and other Regulatory Bodies

This study will assist government and other regulators like Nairobi Securities Exchange (NSE), Central Bank of Kenya (CBK), Capital Markets Authority (CMA) and the Kenya Revenue Authority (KRA) to design policies to stimulate growth and sustainability of the Kenyan manufacturing sector and sound credit and financing options as well as protectionist policies and incentive schemes.

1.5.4 Other Researchers

The findings of this study will form a foundation for future scholars interested in the subject as well as providing a point of reference to research institutions and researchers interested in financing structure and firm performance.

1.6 Scope of Study

This work focused on the variables of financing structure and financial performance of manufacturing firms listed on the NSE over 10 years from 2010 through to 2019. The focus was on debt financing, equity financing, retained earnings and asset tangibility moderated by economic growth rate and earnings volatility on financial performance which was proxied by Tobin's Q and EVA. The study was conducted in Kenya. The researcher used a longitudinal research design as it works with panel data.

1.7 Limitation of the study

The study was limited by the unbalanced panel data due to some firms being delisted from the NSE across the study period hence data for some periods were missing. This was however overcome by the adoption of robust analysis techniques which handled the unbalanced panels.

1.8 Definition of terms

Asset tangibility – This refers to the degree to which non-current assets have been applied in financing the firm.

Debt – Financial resources borrowed by one party from another for use in the normal course of business.

Debt equity ratio – Ratio of total borrowed financial resources (current + non-current liabilities) to shareholder equity.

Debt ratio / Total debt ratio – The portion of the assets of a firm that have been funded by use of borrowed financial resources (Nirajini & Priya, 2013).

Earnings volatility – This represents the cost of financial distress. It shows the variability of income.

Economic growth rate – Annual growth rate of real GDP

Economic value added – This is a return on capital in excess of the cost sacrificed to acquire the capital.

Equity – Financial resources raised by the owner(s) of the firm for use in trading.

Equity assets ratio – Proportion of financial resources raised by owners to firm's total assets.

Financing structure – This is the way a firm's assets are funded

Long Term Debt – Obligations with maturity period greater than one year.

Retained earnings – Portion of net income not distributed to the owners of an entity as dividends.

Retention ratio – Portion of undistributed net profit and is used for expansion of business operations rather than being shared with the shareholders as dividends.

Return on assets (ROA) - Profitability of a firm relative to the total assets

Return on equity (ROE) - Profitability of a firm relative to its total stockholders equity.

Short Term Debt Ratio - Financial obligations expected to be paid off within a period of one year or less.

Tobin's Q – It is a ratio of the market value of a firm's shares to the cost of replacing the physical assets of the firm.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the concept of the manufacturing sector, financing structure, the empirical literature with regard to the study variables together with the identified research gaps, relevant theoretical literature on financing structure and financial performance of manufacturing firms listed on NSE, the conceptual framework, the model guiding the study and variables description and measurement together with the expected effect after interaction.

2.2 The Manufacturing sector in Kenya

The Manufacturing sector is critical to the country's economy through fostering a reliable and resilient production mechanism to enhance competitiveness in the region and globally to realize economic growth. The sector has been playing a critical role in supporting the country's economy through its contribution to national output, exports and employment creation. In relation to vision 2030, the manufacturing sector is expected to assist transform the economy to be more vibrant by creating more job opportunities for the burgeoning youth population and hence create wealth for the country.

Historically, Kenya's economy has benefited little from manufacturing as the sector's contribution to the gross domestic product (GDP) has been deteriorating. Between 1964-73, it accounted for 10% of GDP and improved to 13.6% from the year 1990 to 2007 but thereafter reduced to below 10%, reaching its lowest in the year 2017 being 8.4%. There is however a renewed effort by the government to revamp the sector through the Big 4 Agenda. Through this, the government expects to achieve 15% contribution to GDP by the year 2022 from the manufacturing sector to realize the expected economic resilience and stability (KAM, 2018).

The Kenyan government together with the private sector through the public private partnership have taken actions that will steer the sector's development. This has led to a positive growth in the sector's real value added by 3.2 per cent in 2019. This was accompanied by an expanded volume of output by 2.0 per cent in the same year. This

growth is attributed to an increase in the manufacturing activity related to motor vehicle production, production of trailers and semi-trailers, plastic manufacture, production of animal and vegetable fats and oils as well as the activities in the pharmaceuticals sub sector. There was however a decrease in production of sugar, wood and wood products, electrical equipment and non-metallic mineral products. In terms of financing, the sector witnessed a growth of credit from the commercial banks and industrial financial institutions from ksh 335.7 billion to ksh 366.9 billion in 2019 to finance its operations (KNBS, 2020).

Reorientation of the Chinese economy from export to a consumer driven economy is key in shaping the manufacturing sector in Kenya. Financing options relying on Low cost of capital in Asian countries has enabled the manufacturing sector in those countries to access funding cheaply, thereby speeding the sector's development. This as a component of financing structure could enhance productivity of the sector in Kenya and hence improve its financial health (Were, 2016).

2.3 Financing structure variables

This refers to the financing options as displayed on the financed by section of the statement of financial position. Optimal financing structure implies that at a certain ratio of the financing options of debt, equity, retained earnings and asset tangibility. Firms need to choose an appropriate financing structure that minimizes financing cost while on the other hand reap maximum benefits to gain more hence improve profitability hence maximize the value of the firm.

2.3.1 Debt financing

This comprises financial resources borrowed for use to finance operations and is therefore referred as capital provided by outsiders. This money has to be paid back to the providers in future periods together with interest thereon. These obligations could be secured or unsecured. They are applied to finance either asset acquisitions or managing the working capital (economic times, 2020). This financing choice comes in handy for filling budget deficits in both public and private sector entities (Ochong'a, Muturi & Atambo, 2016). For growing firms, financing through debt is more viable because they have more opportunities for growth and investment and hence could deplete their retained earnings

since they retain very little to adequately fulfill the investment and financing needs (Githaigo & Kabiru, 2015).

Financing by use of debt is comprises of both short-term and long-term sources which could be measured in aggregate and also in relation an organization's assets and equity. Short term debt includes liabilities which fall due for a period of one year or less and are normally needed to fulfil short-term financing needs and working capital. These comprises of debtors, short term borrowings from financial institutions, payments for employee benefits, payment for leases and tax payable on income. Further, long term debt comprises obligations which fall due for a period more than one year. Normally, these components are expressed as relative values which are computed as follows for the purpose of this study;

$$\text{Short term debt ratio} = \frac{\text{Short term debt}}{\text{Total assets}}$$

The short-term debt ratio shows the prospect of a company discharging the outstanding liabilities whose maturity is one year or less.

$$\text{Long term debt ratio} = \frac{\text{Long term debt}}{\text{Total assets}}$$

The lesser the long-term debt ratio is, the better standing a company is in. Long-term debt ratio of 0.5 or less is considered healthy.

$$\text{Total debt ratio} = \frac{\text{Long term debt} + \text{Short term debt}}{\text{Total assets}}$$

$$\text{Debt equity ratio} = \frac{\text{Total debt}}{\text{Equity}}$$

2.3.2 Equity financing

This entails corporations raising finances through floating their shares to outsiders who own a part of the company by buying the shares offered (Floegel, 1990). Equity issuance can be done two ways; this can be through an initial public offer where a new company goes public by selling its shares to the public for the first time. The other option is through

a seasoned issue for established companies who sell their authorized but unissued shares to raise more funds (Abraham & Harrington 2011). The equity holders are compensated by way of dividends when the company makes profit and shares a portion of it with them. However, finance theory recommends that application of equity in financing is the most expensive option of raising capital. Therefore, organisations opt for equity financing if there is no other option or when the share is overvalued by the market where in such a case, the benefits of issuing the share outweighs the cost (Frijns, Rad & Tsai, 2006).

Equity financing comprises of both ordinary shares and preference shares. This variable could be measures as a ratio i.e. the equity ratio. This ratio uses the total equity and total assets from the statement of financial position to indicate how effectively assets have been financed without using debt. An equity ratio of 0.50 or under indicates that the firm is leveraged while a ratio of 0.50 and above indicates that the firm is conservative and cautious in applying debt. The conservative firm therefore use more equity than debt in their financing plan.

$$\text{Equity ratio} = \frac{\text{Total equity}}{\text{Total assets}}$$

2.3.3 Retained Earnings

This is the residual net income for the business after paying the shareholders their dividends. Normally, they are used for financing of working capital and fixed asset purchases (capital expenditure) or assigned for paying off debt obligations. Earnings of a business can be positive (profits) or negative in the case of losses. These revenue retentions could also be retained for reinvestment or debt repayments (Chasan, 2012). Some firms retain more of their profits so that they can reinvest them when they identify viable opportunities, they can invest in mostly for growth firms which have more opportunities as they are penetrating the market (Campbell, 2012). Despite of this, firms need to conduct proper feasibility studies and a cost benefit analysis to avoid misapplying these retained funds in non-viable investments which could result in value destruction Burgstahler & Dichev (1997).

Retained earnings is calculated by the formula:

$$RE = BT + Net\ income\ (or\ loss) - C - S$$

Where;

RE = retained earnings

BT = Retained earnings brought down from the previous period

C = Cash dividends

S = Stock dividends

The retained earnings can further be expressed in form of a ratio; termed as retention rate (Orwel, 2010). A conflict of interest often arises when determining the retention ratio since the managers want to retain more than what they distribute as dividends while the shareholders need a higher payout ratio since ploughing back raises uncertainty on ownership level and control over decisions. High retention also means a foregone dividend by the shareholders which subjects them to high opportunity cost (Chasan, 2012).

Retention ratio is given by;

$$Retention\ ratio = \frac{Retained\ earnings}{Net\ income}$$

If a company pays all of its retained earnings out as dividends or does not reinvest back into the business, earnings growth might suffer. Also, a company that is not using its retained earnings effectively have an increased likelihood of taking on additional debt or issuing new equity shares to finance growth.

2.3.4 Asset tangibility

Tangibility denotes the extent of financing by use of non-current assets. Fixed assets value is therefore used as a proxy for a firm's tangibility (Baloch, Ihsan, Kakakhel & Sonia, 2015). Firms use non-current assets in production to generate revenue and therefore they are intended to be retained by an organization for longer periods and are not to be sold to customers (Kenton, 2017). These assets appear as property, plant and

equipment (PPE) on the statement of financial position. Included are assets like machinery used in production, trucks, plant, property, office furniture, equipment and buildings among others since they can vary depending on the nature of the organization (Kenton, 2017; Birch, 2016 and Downes & Goodman, 2003).

It has been established that Asset tangibility significantly determines the ability of an organization to raise funds externally for investment purposes as they strengthen the balance sheet and assure of the reality of going concept of accounting (Almeida & Campbello, 2007). Basically, the reasoning to this is that asset tangibility is a significant determinant of how counterparties and external financiers value a firm by virtue of the transferrable assets in case the firm defaults on its obligations (Diemo, 2007). The asset tangibility ratio is given by;

$$\text{Asset tangibility} = \frac{\text{Non – current tangible assets}}{\text{Total assets}}$$

Past studies have been carried out on asset tangibility and performance. Findings from these studies are however divergent. For instance, a study by Pouraghajan, Malekian, Emamgholipour, Lotfollahpour & Bagheri (2012) found that asset tangibility ratio significantly and positively influenced ROA and ROE of listed firms on Tehran stock exchange. On the other hand, Ansari & Gowd (2017) studied Indian firms and found that asset tangibility had a negative and significant effect on financial performance since the assets tie financial resources which could have an alternative use.

Further, Musah, Kong & Osei (2019) in the case of non-financial firms which were listed on the Ghana Stock Exchange found existence of a positive but not significant relationship between asset tangibility and ROA, while the relationship with ROE and ROCE was negative and significant. The findings by past researchers therefore reveal mixed and incongruent findings. Further, the studies adopted accounting-based performance proxies. The current study therefore focused on economic based performance proxies as well as a different time scope to study and hence narrow the research gap in the manufacturing sector in Kenya.

2.3.5 Economic growth

Economic growth was used to manage and control for the macroeconomic performance which is linked to market conditions as an exogenous variable specified by Myers (2001) as anchored in the trade-off model of financing structure. This was measured by annual growth of real gross domestic product (GDP). Pecking order theory posits that leverage should decline when the economy is growing as firms can easily generate revenue from their normal operations and hence internal sources can provide sufficient funds.

According to (Saif – Alyousfi, Md – Rus, Taufil – Mohd, Taib & Shadar, 2020), GDP has no significant effect on financing options and therefore the choice is purely by considering the costs and benefits of either source. In the case of the Kenyan context, real GDP growth rate has been found to impact leverage positively (Ngugi, 2008). This shows that a strong economy can support operations which is a trajectory of investor confidence in a growing economy to stimulate demand hence the possibility upside profits. This was pursued further in this study to check if the relations hold in the manufacturing sector in the current time.

2.3.6 Earnings volatility

This represents the cost of financial distress. It shows the variability of income. Booth, Aivazian, Hunt, & Maksimovic, (2001) used the standard deviation of the ratio of earnings before tax to the TA to measure earnings volatility. Further, Standard deviation of earnings before interest and taxes has also been suggested as a good measure of volatility (De Miguel & Pinadado, 2001). This study therefore adopted the standard deviation of the EBIT deflated by total assets since it is an appropriate measure for observing firm's ability to meet fixed charges. The past five years standard deviation can be measured and also used as a proxy for earnings volatility (Koksai & Orman, 2015; Harris & Roark, 2019).

When volatility is high, firms are fairly unable to raise debt or equity as lenders and investors are not willing to give their resources to a firm with a high risk of default or bankruptcy and this could make the financier forfeit the extended facility or incur more cost of recovery (Moradi & Paulet, 2019). This is because increase in earnings volatility

subjects a firm to a high rate of unpredictability and therefore exposes the firm to the risk of inability to pay dividends, interest and debt repayment.

Past studies suggest that debt level of a firm cannot directly affect earnings volatility, because the optimal level of debt decreases the earnings volatility (Khemiri & Noubbigh, 2018). Another study suggests that earnings volatility has a positive and significant effect on leverage (Saif-Alyousfi, Md-Rus, Taufil-Mohd, Taib, & Shadar, 2020). Fama & French (2002) identify a direct relationship consistent with the agency cost of debt, resulting in risky firms borrowing more. These past findings and recommendations suggest that earning volatility being a significant endogenous variable in financing structure could influence the financing option chosen and ability to raise financing by either options hence influencing performance depending on the direction of the influence.

2.4 Financial performance indicators

Financial performance is based on accounting-based indicators and economic based measures of performance. The following measures are applicable for performance measurement however, the current study focused on economic based indicators of firm performance.

2.4.1 Return on assets (ROA)

Return on assets (ROA) shows an organization's profitability relative to its total assets. It is a ratio that depicts the soundness observed by managers in discharging their stewardship responsibilities by efficiently applying the firm's assets to generate income thereon. This ratio is also referred to as return on investment (ROI). The computation for the ratio is as under;

$$\text{Return on assets} = \frac{\text{Net income after tax}}{\text{Average assets}}$$

A higher ratio is an indicator that the firm performed well and vice versa.

2.4.2 Return on equity (ROE)

This performance metric measures profitability in relation to owner's equity. This ratio is necessary after conducting a ROA to ascertain if the organization is creating value by transforming borrowed funds to generate greater return and moreover create wealth for the shareholders (Hadlock & James, 2002). ROE is computed as the amount of net income after tax returned in relation to stockholders' equity.

$$\text{Return on equity} = \frac{\text{Net income after tax}}{\text{Average shareholders equity}}$$

2.4.3 Tobin's Q (Q ratio)

It was proposed by James Tobin (1918). It is a ratio of the market value of a firm's shares to the cost of replacing the physical assets of the firm. The ratio signifies growth opportunities available to a firm. It states that if $q > 1$, the firm could earn more profit by investing extra resources because at that level, profits generated would surpass the cost sacrificed on the assets. On the other hand, for $q < 1$, it means that a firm would lose if it invests in extra resources and therefore, it performs better by selling its assets instead of using them in production. The perfect condition is where q is tending toward or equal to 1 as this implies that the firm is in an equilibrium state. Tobin's Q as a performance proxy shows the level at which outside investors regard the company (Ramli, Latan & Solovida, 2019; Rajan & Zingales, 1995).

$$\text{Tobin's } Q = \frac{\text{Total market value of the firm}}{\text{Total asset value of the firm}}$$

Since the cost of replacing the total assets cannot be estimated with ease, a different version of determining the Q ratio follows;

$$\text{Tobin's } Q = \frac{\text{Equity market value} + \text{Liabilities market value}}{\text{Equity book value} + \text{liabilities book value}}$$

For calculation purposes, it is assumed that the book and market value of liabilities is similar and hence, the liabilities cancel out each other and disappear from the equation. Considering this assumption, the formula reduces to;

$$\text{Tobin's } Q = \frac{\text{Equity market value}}{\text{Equity book value}}$$

2.4.4 Economic value added (EVA)

EVA is also called economic profit. It is based on the notion that real profitability is realized when projects generate returns in excess of their financing cost and hence create additional wealth to the shareholders. This performance proxy and a measure of the firm's ability to create wealth since is superior by 50 % to other accounting-based measures (including EPS, ROE and ROA) and it better explains changes in the stockholders wealth (Stewart 1994).

Managers can use EVA to better assess the adequacy of earnings their firms generate. When generated returns are less than the financing cost, EVA is negative implying wealth destruction. The firm is therefore undervalued as its share price will be lower triggering capital flight which could depress the share price further. EVA explains the tradeoff between the income statement and statement of financial position involved in value creation. Jensen (1993), Professor Emeritus, Harvard Business School proposed a rule in relation to performance measures and held the view that if it is a ratio, then it is wrong. EVA, being an absolute value applies well to investors since they are normally interested in absolute gains and not ratios.

Finance managers applying EVA as an evaluation measure recognize that, capital applied need to be compensated as is the case of wages (Shil, 2009). Following this approach on capital employed, the managers have a changed view of the organization as they also become entrepreneurs and hence they become more concerned and responsible as regards the investment. Proponents of EVA opine that its adoption enables organizations to better assess the value a firm creates across time. It should therefore form the foundation of evaluating investments in relation to the financing choices and options available (Ray, 2012).

It is calculated as follows;

$$EVA = NOPAT - (WACC \times Capital\ invested)$$

EVA – Economic value added

NOPAT – Net operating profit after tax

WACC – Weighted average cost of capital

$$WACC = Kd (1 - t) \frac{D}{D + E} + Ke \frac{E}{E + D}$$

$$Capital\ Invested = Total\ Assets - Current\ liabilities$$

2.5 Empirical Literature

2.5.1 Debt financing and financial performance

Tailab (2014) investigated capital structure and how it affects financial performance. The study focused on the variables of Short-term debt, long-term debt, total debt, debt to equity ratio, and size of the firms which comprised of sales made by the firms. A total of 30 American firms which were operating in the energy sector were sampled. Secondary data was gathered and extracted from the published accounts covering nine years from 2005 through to 2013. Financial performance proxies adopted were ROA and ROE. The data was analyzed using (Partial Least Square) PLS. The study findings revealed existence of a negative effect on ROA and ROE due to total debt which was significant. Debt therefore adversely affects profits due to interest costs, agency problems. Further, organizations applying more debt are faced with higher financing costs as high gearing implies high cost of a borrower and this minimizes profit and hence returns to shareholders shrink. The size of the firm which was measured in terms of sales affected ROE negatively and in a significant manner. On the other hand, short term debt revealed a positive and significant influence on ROE. The study however omitted stationarity tests and diagnostics relevant for financial time series. Further, inclusion of moderating variables as well as other performance proxies based on economic performance could have broadened the focus of results generated.

Wu & Josh (2019) studied the relationship between capital structure and profitability of Manufacturing companies based in the U.S. A total of 15 manufacturing companies were used in the study and secondary data was collected from their annual financial statements for 10 years. Panel analysis approach was used and TDR had a negative and significant effect on performance of the firms. Likewise, DER had a significant negative impact on ROA implying that employing low levels of debt in the financing structure could improve the fortunes of a company. This could be due to the fact that low costs by a firm do not adversely affect the revenues since the firm can absorb them in the normal course of business instead of passing them to consumers in form of increased prices. The current study focused on introducing more variables of financing structure and performance measures as well as an extended time scope, following an unbalanced panel analysis focusing on a developing economy to find out if the effect changes.

Javed, Younas & Imran (2014) examined the impact of capital Structure on performance of 63 non – financial firms listed on Karachi Stock Exchange in Pakistan. Secondary data for five years was used from 2007 – 2011. The study findings showed a mixed relationship between capital structure and performance of the Listed non – financial firms in Pakistan. For instance, ROE was negatively affected by debt to assets ratio while the same affected ROA positively. The negative effect on ROE could be attributed to the fact that owners of debt must be compensated before stockholders while the positive effect on ROA is attributed to the savings in terms of interest tax shield which improve profitability. The study concluded that capital structure choices impact firm performance and recommended that finance managers should be careful while deciding on the financing structure. The current study therefore focused on the variables of financing structure and considered moderating variables like earnings volatility and economic growth rate to find out if the effect still holds amidst the inclusion of these variables.

Pouraghajan, Malekian, Emamgholipour, Lotfollahpour & Bagheri (2012) studied on the relationship between Capital Structure and Performance of firms listed on the Tehran Stock Exchange. A total of 12 industrial groups formed the study whose secondary data was extracted for the years 2006 to 2010. The study found that total debt ratio had a significant negative effect on financial performance and recommended that for firms to

improve their performance and hence generate better wealth for their shareholders, they needed to reduce debt in their financing structure. This is due to the fact that debt exposes firms to additional costs and if the costs and benefits are not properly evaluated, the costs could outweigh the savings and hence destroy wealth. Firms with huge appetite for debt can easily become insolvent if the debt is not applied to generate returns at a rate higher than its cost. Based on this study, the current study introduced other financing structure proxies and performance measures and focused on a longer period of study.

Pratheepan (2014) studied on determinants of profitability for the 55 manufacturing firms that were listed on the Colombo Stock Exchange in Sri Lanka over a 10-year period through 2003 to 2012. The panel data was analyzed using static panel analysis models. ROA was used as a proxy for profitability while leverage, size of the firm, liquidity and tangibility of assets were used as proxies for explanatory variables. The study found existence of a negative but not significant relationship between leverage and ROA indicating that higher debt lowers profitability by eroding the gains made by the firms. The study however adopted a static panel model while research has found that performance is naturally dynamic and hence, the dynamic panel data model could be more suitable for a study of this nature hence the current study used the dynamic model to find out if the results change.

Salim & Yadav (2012) study on Capital Structure and Financial Performance of Malaysian Listed Companies, adopting a panel data approach for a sample of 237 companies adopted TDR, STD and LTD as explanatory variables. ROA, ROE, EPS and Tobin Q were the output variables. The sample was constituted by firms in six sectors; construction, industrial product, consumer product, plantation, property, trading and service whose data was extracted for the period 1995 – 2011. The findings indicated existence of a negative relationship between TDR, STD and LTD with ROA, ROE and EPS. This could be attributed to the higher cost of debt that highly leveraged companies face as they are considered to be riskier compared to firms with low leverage this in turn shrinks the return to shareholders and hence a depressed EPS. On the contrary, the explanatory variables were found to have a strong, positive and significant effect on Tobin

Q and recommended for further research to examine firm performance by inclusion of more variables of financing.

Yasin & Pramita (2021) investigated the influence of profitability and capital structure on the value of mining companies on Indonesian Stock Exchange. The study used secondary data for four years from 2014 to 2017. Purposive sampling was used to select 8 out of the 21 listed companies. Capital structure was proxied by leverage while firm value was proxied by Tobin Q. The study found that leverage improved Tobin Q. This is due to the increasing interest cost which could increase the share price of a company and hence its market capitalization relative to book value and thus amplify Tobin Q. The current study expanded the scope of proxies for leverage and adopted a census to overcome research bias which could arise from purposive sampling.

Dang, Bui, Dao and Nguyen, (2019) investigated capital structure and its relationship with firm financial performance. Their study focused on Food and Beverage firms in Vietnam. Short term debt ratio, debt ratio and long-term debt ratio as financing structure proxies. An unbalanced panel approach was followed considering a sample of 61 listed firms. Leverage was found to have a strong effect on performance with debt ratio affecting ROE positively and significantly but affecting ROA negatively. More debt impacts negatively on ROA and positively on ROE due to the trade off between equity and debt. Therefore, more debt shrinks the proportion of equity and thus minimizing dilution of EPS thus improving ROE. The current study focused on a different sector, different economy and more robust performance measures.

Cheng Liu & Chien (2010) applied a threshold regression model on 650 Chinese firms covering the years 2001 – 2006. Debt ratio influenced performance positively when the debt ratio was between (53.97%- 70.48%), but the relationship became negative when the debt ratio used was above 70.48% implying that an increase in debt financing deteriorates the value of a firm. The study concluded that the relationship between leverage and firm value represents an inverted U-shape and therefore financing should not be used unlimitedly but up to an optimal point. The current study recognizes that debt ratio threshold values vary across different sectors and the operational environment of a firm. The target level of debt financing could vary also depending on its cost and availability

as well as the debt structure applied by its peers hence the current study focusing on firms in the same industry.

Tufa (2016) conducted a study on corporate capital structure and its effect on profitability of Manufacturing firms in Ethiopia utilizing a quantitative research design. The study used secondary data through the period 2010 – 2014 for which large tax payer manufacturing organizations formed the unit of analysis. Random sampling technique was applied in selecting a sample of 34 firms. Financing structure variables of interest coverage ratio (ICR), debt ratio (DR), debt equity ratio (DER), long term debt to capitalization ratio (LTDCR), short term debt to total liability (SDTL) and long-term debt to total liability (LDTL). The study controlled for size (SZ), sales growth rate (SG) and tangibility (TN). Profitability was measured by return on capital employed (ROCE). The study found a significant positive relationship between financing structure variables (short-term liabilities to total liabilities ratio, long-term debt capitalization ratio and interest coverage ratio) and ROCE. Short-term debt rather than long term ones is positively correlated with financial performance. The study therefore recommended firms need to identify a suitable mix of financing structure variables to boost performance of manufacturing firms. The study used only financing variables relating to debt though it exhaustively examined most aspects of the debt component. ROCE is based on accounting profit which is a reporting concept; EVA is more robust as it considers the economic and resource allocation decision and hence, the current study incorporated other components of financing as well as performance.

Nyamoma & Sporta (2020), studied the effect of financing decisions on shareholder value creation of Manufacturing firms listed at NSE. The study adopted Panel Least Square (PLS) regression techniques utilizing secondary. The variables used were debt financing, equity financing, working capital financing and dividend financing on value creation. The study found that debt financing had a positive and significant effect on EVA and recommended that firm managers needed to conduct an analysis of stock holder value creation periodically. The current study proposes to include other financing structure variables, more performance proxies and adopt a dynamic model to capture the persistence of firm value across time. The current study sought to estimate the financing

structure dynamics by generating both the short run and long run models to observe the behavior of the coefficients.

Kajirwa (2015) examined the use of debt financing in a firms' capital composition focusing on 11 commercial banks listed on NSE. The study adopted a longitudinal research design applying secondary quantitative data for 5 years through 2010-2014. It was found that performance of the commercial banks was negatively affected by debt financing though the effect was not statistically significant. The study therefore concluded that leverage curtails ROA though not significantly. The study focused only on ROA as a proxy for performance while Tobin Q has been advocated for as a superior performance proxy since it shows the intrinsic value of a firm's assets as well as the market value. The study also focused on the banking sector whose financing structure is different compared to the manufacturing sector since their operations are not homogenous hence, the current study focused on a different sector to find out if the relations hold.

Githire & Muturi (2015) conducted a study focusing on the impact of capital structure on performance of non-financial firms listed on NSE. The study applied the variables of current liabilities to total assets ratio, long-term liabilities to total assets ratio, total debt to assets ratio and equity on performance which was measured by ROA. Liquidity ratio, age of the firm and segment were the control variables. Explanatory descriptive research design was adopted. The secondary data used for the study covered the period 2008-2013. Multiple regression analysis technique was applied to test the hypothesis. The results revealed that financial performance was positively affected by long term debt and equity. On the contrary, short-term debt was found to affect performance negatively in a significant way. The study conclusion was that use of long term to finance a business helps to improve firm's financial performance due to the spread of the repayment over a long period relieving the firm unnecessary pressure and hence according them an opportunity to reorganize their operations. The study used one performance measure variable whereby the current study incorporated more variables to measure performance of a firm to the various stakeholders and a more robust research design and advanced econometric analysis techniques.

Kodongo, Mokoteli & Maina (2015) studied on the capital structure, Profitability and Firm value focusing on listed firms in Kenya. Leverage, Firm size, Asset tangibility, Sales growth were studied and their effect was being measured on return on assets, return on equity and Tobin's Q. Annual data for the period 2002 – 2011 was used and static panel data models (random and fixed effects models) were used for analysis. The study found that the use of leverage had a significant and negative effect on profitability while having a negative but not significant effect on firm value. This is also a trajectory that more debt is detrimental to firm performance and could cast doubt on the going concern ability. The study further concluded that the debate on capital structure is unlikely to be settled soon since there has been no agreement concerning the appropriate debt to apply in a firm to maximize returns hence create wealth for the shareholders. The study adopted a static panel analysis approach. Research has found that performance is naturally dynamic and hence the dynamic panel data model could be more suitable for a study of this nature hence the current study used the dynamic model and included more proxies of independent variable and an economic performance measure.

Kirmi, (2018) studied on capital structure and performance of Listed Petroleum and Energy firms in Kenya. Descriptive and causal research design techniques were adopted in assessing the impact of short and long-term debt on ROA. The study comprised of all the 4 energy and petroleum companies listed in the NSE. Secondary data for 5 years from 2012 – 2016 was used for analysis. The study found the existence of a strong positive but not significant relationship between short term debt and ROA, an average negative but not significant relationship between long term debt and ROA and a weak positive relationship between total debt and ROA implying that an increase in debt lead to an increase in performance. The study therefore resolved that debt has a dichotomous effect on profitability with long term debt affecting it negatively while short term debt affecting it positively. This resulted in mixed results and hence the current study to narrow these findings in the manufacturing sector.

Karuma, Ndambiri & Oluoch (2018) investigated the effect of debt financing on financial performance of manufacturing firms in NSE. The study used secondary data for the periods 2013 – 2017 and applied correlational research design. Short term debt was found

to have a negative but not significant effect on performance while long term debt had positive but not significant effect on performance which was proxied by ROA. The study therefore recommended that manufacturing companies should issue more debentures as a long-term source of financing since it is a low-cost financing option since the interest to be paid to the debenture holders is generally less than the dividend that could be paid to shareholders. This study focused on a shorter time frame hence the current study.

Banafa & Ngugi (2015) studied the determinants of capital structure on profitability of firms in manufacturing segment in Kenya. Descriptive survey design was used and the independent variables used were leverage, equity, assets tangibility and size of the firm while the dependent variables were return on assets (ROA) and return on investment (ROI). All the independent variables were found to influence performance in a positive manner. Leverage improved performance and therefore firms should prefer use of debt to achieve superior performance, create more wealth and maximize value for the shareholders. This finding is not consistent with other findings on the subject and therefore, the current study adopted a different research design to further assess if the relations hold by conducting both the short run and long run analysis; incorporating financial performance measures of economic origin.

Karen (2017) Study on the relationship between capital structure and financial performance of listed firms in the manufacturing, construction and allied sector utilized Secondary data for 5-year period from 2012 – 2016. Descriptive research design was adopted. The study findings showed a negative but not significant relationship between DER and ROA and concluded that capital structure has no significant effect on financial performance of manufacturing, construction and allied firms and recommended that management should hold optimal levels of debt as it may affect other goals of the firm. The study however focused on a single performance proxy hence which majorly serves internal stakeholders. The current study therefore introduced performance proxies which consider the stakeholders of a firm holistically.

2.5.2 Equity financing and financial performance

Javed, Younas & Imran (2014) examined the impact of capital Structure on performance of 63 non – financial firms listed on Karachi Stock Exchange in Pakistan. Secondary data for five years was used from 2007 – 2011. The study findings showed a mixed relationship between capital structure and performance of the Listed non – financial firms in Pakistan. The study found existence of a negative relationship between equity over assets ratio and performance. Managers applying equity in financing tend to be conservative and less innovative in crafting ways that could enable the entity minimize cost. The study therefore concluded that capital structure impacted firm performance and recommended that managers should adopt necessary carefulness while taking decisions regarding capital structure. The study however did not emphasize on either more debt or more equity was desirable. The current study therefore focused on the variables of financing structure and considerer moderating variables like earnings volatility and economic growth rate to find out if the effect still holds amidst the inclusion of these variables.

Ibrahim, Sabo, Kabiru & Abubakar (2020) studied on equity financing and firm value in Nigeria. The study used panel analysis technique for 12 listed industrial goods enterprises from 2006 to 2016. Tobin Q was used as a proxy for firm value and ex post facto research design was adopted. It was found that equity finance reduces the capacity of firm value in Nigeria and therefore the study recommended that firms should design appropriate management skills to come up with the efficient capital mix in financing their business. The negative relationship could be due to the investors discounting the share price of a firm issuing equity. The study however used a single proxy for firm performance and hence the current study sought to include an economic based performance proxy.

Nyamoma & Sporta (2020), studied the effect of financing decisions on shareholder value creation of manufacturing firms listed at NSE. The study adopted Panel Least Square (PLS) regression techniques utilizing secondary. The variables used were debt financing, equity financing, working capital financing and dividend financing on value creation. Equity financing had a positive and significant effect on EVA. The study recommended

that management need to conduct continuous shareholder value creation analysis to improve firm value. The current study sought to include other financing structure variables, more performance proxies and adopt a dynamic model to capture the persistence of firm value across time.

Buigut, Soi, Koskei & Kibet (2013) conducted a study on the relationship between capital structure and share prices of Listed Energy firms listed. Causal research design was adopted applying multiple regression analysis. Panel data for the energy sector over the period 2006-2011 was used. The study established existence of a negative effect on share prices by equity. This implies that firms who issue more equity experience a depressed share price which could ultimately deplete the value of the company. The current study sought to assess the effect on Tobin Q and EVA adopting a dynamic panel data approach to capture the effect of the lagged dependent variables in the analysis.

Omollo, Muturi & Wanjare (2018) examined the effect of equity Financing Options on financial performance of Non-Financial Firms Listed at the Nairobi Securities Exchange, Kenya. Panel econometric techniques were applied and a sample of 40 non-financial firms listed at the Nairobi Securities Exchange between 2009 and 2015. The study adopted the variables of Common stock, retained earnings and total equity as ratios of total assets on the financial performance proxied by ROA and ROE while firm size was used as the control variable. The results revealed that Common stock ratio significantly and negatively affects ROA and recommended that corporate finance managers should use less common stock to boost performance. Overall, total equity ratio positively and significantly affects ROA. ROE was not significantly affected by the equity variables in the sample. The study however did not consider the preference stock component of equity and did not conduct panel data stationarity tests to ensure the regressions were not spurious.

Musila (2015) studied the relationship between equity financing and financial performance of the energy and petroleum companies listed at the NSE. The study comprised of 5 firms in the energy and petroleum sector and used secondary data over 2005 to 2014 using a descriptive research design. The study found that equity financing, proxied by equity ratio influenced ROE positively. The study recommended that firms to

use equity financing to increase asset base and growth as this translates to improved financial performance. To encourage firms to participate in equity issues, policies should be made more flexible. The current study focused on a different sector, applied more variables and different research design and panel analysis techniques.

Mwende, Muturi & Njeru (2019) examined the Effect of Equity Finance on Financial Performance of Small and Medium Enterprises in Kenya. The study used primary data collected using a questionnaire on 384 respondents and descriptive research design was used. The study found that equity financing has a positive statistically significant relationship with the performance of the SMEs and recommended that most of the SMEs had used personal savings to finance their businesses take long for it to raise adequate and therefore SMEs should be encouraged to take loans or trade credit. The study utilized a data collection tool which could be biased to measure the explanatory variables and performance. Performance is a historical variable which could more reliably be measured using secondary data from audited financial statements. The current study sought to follow this trajectory and focus on a different sector to corroborate the results as well as include more performance indicators and an extended period of study.

Banafa & Ngugi (2015) studied the determinants of capital structure on profitability of firms in manufacturing segment in Kenya. Descriptive survey design was used and the independent variables used were leverage, equity, assets tangibility and size of the firm while the dependent variables were return on assets (ROA) and return on investment (ROI). All the independent variables were found to influence performance in a positive manner. It is concluded from analysis that all variables have a positive relation with profitability of the manufacturing entities. Equity financing improved performance and therefore firms should prefer it in financing their operations and expansion. This finding however differs with the Pecking Order Theory which discourages equity by allowing it as a last resort and instead recommends internal equity financing. The current study sought to test the Pecking Order theory in the light of this finding.

2.5.3 Retained earnings and financial performance

Diantimala, Syahnur, Mulyany & Faisal (2021) examined firm size sensitivity on the correlation between financing choice and firm value in Indonesia. Annual reports and market value of 1,638 listed non-financial companies were randomly sampled for the study. Secondary data for 7 years was collected through the years, 2012 until 2018. The study found that reducing retained earnings affected by lower profitability level increase corporate long-term debt. It was therefore concluded that relationship between retained earnings and firm value is positive and significant. The current study proposes to include other financing structure variables, more performance proxies and adopt a dynamic model to capture the persistence of firm value across time.

Okeke & Okeke (2018) studied dividend policy and performance of selected quoted firms in Nigeria using Ex – post facto research design for the period 2010 - 2016. The study adopted dividend payout ratio (DPR), retained earnings (RE), and cash dividend (CD) as explanatory variables on performance and found that DPR and RE had positive and significant effect on performance while CD had negative and insignificant effect on performance. The design used suffers a weakness that a particular situation is or is not a case of reverse causation hence, a different research design was adopted by the current study to overcome this limitation as well as extend the time scope.

Yemi & Seriki (2018) investigated the retained earnings and firms' Market Value for Nigerian firms. A sample size of 75 non-financial firms which are listed on the Nigeria stock Market was used. Secondary data for the firms was collected through the period 2003 to 2014. The panel data was analyzed using the random and fixed effects model. The results indicated existence of a positive and significant relationship between retained earnings, dividend payout and earnings per share on Tobin Q while financial leverage had a positive but not significant relationship with Tobin Q. The current study considered the dynamic nature of performance by adopting a two-step system GMM to model the estimation.

Akani & Sweneme (2016) Study on Dividend Policy and the Profitability of Selected Quoted Manufacturing Firms in Nigeria used secondary data through the period 1981 –

2014 and multiple regression was used for analysis. Retention ratio has positive effect on return on investment and net profit margin and recommended that there should be a consistent dividend policy that will maximize shareholders wealth without mortgaging the profitability objectives of the firms. The current study introduced other performance measures to test if the findings would change given a different economic and operating environment.

Thuranira (2014) studied the effect of retained earnings on the returns of firms listed at the N.S.E. Descriptive research design was used and secondary data for 5 years from 2009 – 2013 was used. The study variables were retained earnings, net asset value per share, price to book value, dividend yield and stock returns. The regression results revealed existence of a very weak, negative insignificant relationship between retained earnings and stock returns and recommended firms should not retain huge amounts of earnings and organizations should adopt dividend policies that have a positive contribution to the shareholders. The recommendation should be in relation to the stage of growth of the firm. For growth firms, the opportunities for investment are there and finance theory suggests that the retained earnings for this firm could generate returns higher than the firms cost of capital unlike firms at maturity stage.

Omollo, Muturi & Wanjare (2018) examined the effect of equity Financing Options on financial performance of Non-Financial Firms Listed at the Nairobi Securities Exchange, Kenya. Panel econometric techniques were applied and a sample of 40 non-financial firms listed at the Nairobi Securities Exchange between 2009 and 2015. The study adopted the variables of Common stock, retained earnings and total equity as ratios of total assets on the financial performance proxied by ROA and ROE while firm size was used as the control variable. The results revealed that retention ratio has a statistically significant and positive effect on ROA and recommended that corporate finance managers should consider focus on more use of retained earnings and less common stock to boost performance. ROE was not significantly affected by the retention ratio. The study however did not conduct panel data stationarity tests to ensure the regressions were not spurious.

2.5.4 Asset tangibility and financial performance

Pouraghajan, Malekian, Emamgholipour, Lotfollahpour & Bagheri (2012) studied the relationship between Capital Structure and Firm Performance evaluation Measures on 12 industrial groups listed on the Tehran stock exchange. The study used secondary data covering the periods 2006 to 2010. Asset tangibility ratio was found to have a positive and significant effect on the firms' financial performance that was measured by ROA and ROE and hence firms need to invest in more tangible assets to realize higher profitability since the assets could be securitized to raise funds through leverage. This however, could deny firm's liquidity for trading since the assets could face a risk of market illiquidity. Previous studies have justified other performance measures such as Tobin's Q as a superior measure of performance and hence the current study focuses to fulfill this. Model diagnostic tests and panel data stationarity tests are necessary before analyzing this kind of data and therefore, these were considered in the current study.

In Sri Lanka, Pratheepan (2014) studied the determinants of profitability for the 55 manufacturing companies listed on the Colombo Stock Exchange for a 10-year period through 2003 to 2012. The panel data was analyzed using static panel models. ROA was used as a proxy for profitability while leverage, firm size, liquidity and tangibility were used as proxies for the explanatory variables. The study found that tangibility had a statistically significant negative relationship with ROA and recommended that firms should innovate and invest more in research and development activities for them to realize profitability. The study however adopted a static panel model while research has found that performance is naturally dynamic and hence the dynamic panel data model could be more suitable for a study of this nature hence the current study used a dynamic model and different performance proxies to find out if the results change.

Ansari & Gowd (2017) investigated the impact of asset tangibility and capital structure on financial performance of listed oil and gas companies in India. The study employed a descriptive research design on a sample size of 11 oil and gas companies whose secondary data over the period 2007-2016 was used. The research findings revealed the existence of a positive and significant relationship between capital structure and financial performance and a negative and significant relationship between asset tangibility and financial

performance and concluded that profitability decreases as asset tangibility increases hence companies with less asset tangibility enjoy higher EPS. The study however did not incorporate the effect of moderator variables and did not conduct appropriate panel data analysis tests hence the current study incorporated these and used more robust firm performance measures.

Musah, Kong & Osei (2019) examined the nexus between Asset Tangibility and Financial performance of Non – Financial firms listed on the Ghana Stock Exchange (GSE). ROA, ROE and ROCE were used as performance proxies while asset tangibility was proxied by ratio of total tangible assets to total assets of the firm. Correlational research design was adopted and secondary data of 15 firms through the period 2008 to 2017 was collected. The study found that asset tangibility had a positive but insignificant relationship with ROA, and a negative and significant relationship with both ROE and ROCE. The study recommended that firms should invest more in intangible assets to realize an improved performance. The study however did not focus on other financing variables, did not consider the effect of a moderating variable and did not conduct relevant panel data stationarity and diagnostic tests, hence the current study sought to incorporate them.

Mule & Mukras (2015) investigated the financial leverage and performance of listed firms in a frontier market: panel evidence from Kenya using annual data for the period 2007 – 2011. The study variables included leverage, ownership, asset tangibility on ROA, ROE and Tobin's Q. Asset tangibility had a positive and significant effect on ROE and Tobin's Q while having a negative but not significant effect on ROA. The study concluded that asset tangibility is a significant predictor of firm performance. The current study introduced an additional performance measure and more variables to test if the relationship changes over an extended study period focusing on the manufacturing sector.

Kodongo, Mokoteli & Maina (2015) studied on the capital structure, Profitability and Firm value: Panel evidence of listed firms in Kenya. Leverage, Firm size, Asset tangibility, Sales growth on ROA, ROE and Tobin's Q were used as variables of the study. Annual data for the period 2002 – 2011 was used and static panel data models were used for analysis. The study found that Asset tangibility also affects profitability

negatively. The study adopted a static panel model while research has found that performance is naturally dynamic and hence the dynamic panel data model could be more suitable for a study of this nature hence the current study deviated and used a dynamic model and included more proxies of independent variable and an economic performance measure.

2.6 Theoretical Framework

A theory is a combination of concepts, descriptions and suggestions which are related in a systematic manner that have been proposed to describe and forecast an occurrence Cooper and Schindler (2008).

2.6.1 Modigliani and Miller Theorem

It was advanced by Franco Modigliani & Merton Miller in 1958 who advanced their propositions in a fictional world without taxes, in the absence of transaction costs, nil bankruptcy costs, non-existence of opportunities for growth, presence of symmetry of information between inside and outside investors and hence investors will behave rationally. They proved that under these perfect conditions, financing structure is irrelevant for shareholders wealth and an ideal balance between debt and equity ratio does not exist. However, in the world of reality and practically, financing structure determines profitability and hence the value of an organization hence it is therefore relevant. For instance, a firm intending to maximize its value needs to identify the optimum financing structure that will enable it raise new capital as and when needed in a way that will keep the real financing structure within an acceptable range over time (Brigham & Ehrhardt, 2008).

Due to non-applicability of the earlier irrelevance model, Modigliani & Miller modified their earlier model in 1963, and incorporated the effect of tax in the model. The inclusion of the tax component brought the proposition closer to reality. The revision of the earlier model incorporated corporate taxes and the tax shield emanating from the allowance of interest expense payments to be offset against income which they accepted (Watson & Head, 2010). In relation to this Based on this declaration, firms could therefore replace equity with debt to take advantage of the tax savings. Based on M & M (1958, 1961 &

1963) publications, three propositions can be deduced which form the foundation of the theory (Breuer & Gurtler, 2008);

First Proposition– Irrelevance of the capital Structure

It posits that the market value of an organization is not determined by the financing structure. This proposition is based on the assumption that considering some circumstances, DER does not influence the market value. This approach holds if the following assumptions are met;

A perfect capital market – All markets for securities trading are faultless and investors can trade in securities freely. The investors have complete information concerning the trade and can access any new information when available without extra cost. Further, transaction costs (brokerage commissions, transfer fee, etc.) are non-existent and both firms and individual investors are treated equally when they borrow (Bose, 2010).

Proposition I without the Effect of Taxes – M & M considered two separate companies whose financing structure was different. One of the firms had debt while the other was financed without debt. They resolved that the financing choice by a firm does not affect the value of the firm in the market, given that the firms access equivalent cash flow (Brigham & Ehrhardt, 2010). M&M hypothesize anticipated cash flow is shared uniformly between the firm's investors according to the financing structure, and the company is not distressed by the partition (Popescu & Sorin, 2011).

MM equation can be derived by the following equation;

$$VL = VU$$

VL denote the worth of levered firm and VU represent the value of unlevered firm. Therefore, profitability of the assets and risk are the determinants of firm value instead of the financing structure (Modigliani & Miller, 1958).

Proposition I considering the Effect of Taxes – Firms applying more debt are more valuable than those that do not use debt in their financing structure. This is because interest paid on debt is an allowable expense by the revenue authority from taxes payable

hence increases net income after tax. The tax amount paid on taxable income is lesser for leveraged firms and bigger for unlevered firms. This effect of tax savings directly impacts the market value of the firm (Alifani & Nugroho, 2013).

M&M equation for the theory considering the effect of taxes can be restated as follows;

$$VL = VU + TCD \dots\dots\dots (Pan, 2012).$$

VL represents the value of the geared firm while VU denotes the value of the ungeared firm. TCD denotes the ratio of tax (TC) \times Value of debt (D).

The benefit of having more debt cannot be underscored and hence firms prefer debt so that their income is shielded and they don't end up paying more taxes (pay less taxes since interest on debt is tax deductible) thus enhancing the financial profitability and hence improving market value of the firm (Alifani & Nugroho, 2013).

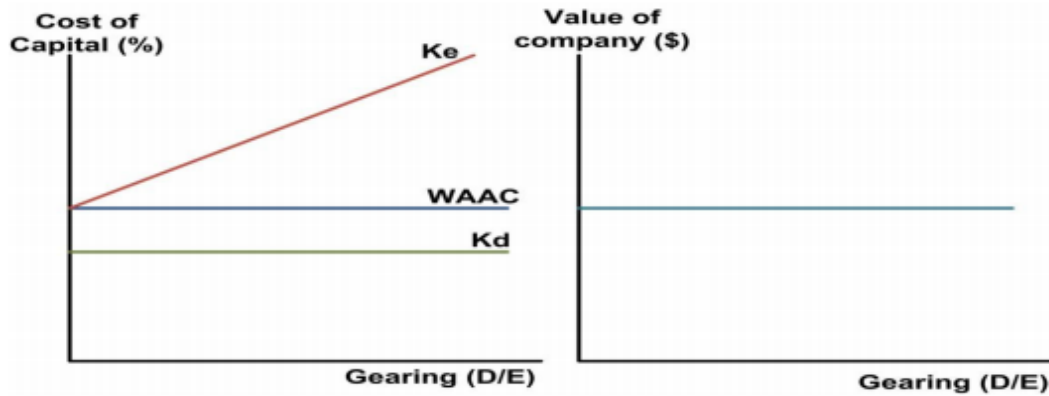
Proposition II – Increase in Debt – Equity ratio increases the cost of equity

Modigliani & Miller proposition II postulates that with an increase in debt equity ratio, the cost of equity increases in a linear manner.

MM proposition II without the effect of taxes.

Modigliani & Miller (1958) claim that, investors expect a return on equity (Ke) that is directly proportional to the growth in debt (D/E) as they are rational and expect a premium for undertaking more risk accompanying debt. The anticipated return on equity is offset by the expected return on equity (Ke) is compensated by the advantage of benefit of inexpensive debt financing thus the Weighted Average Cost of Capital ($WACC$) is unchanged (Alifani & Nugroho, 2013).

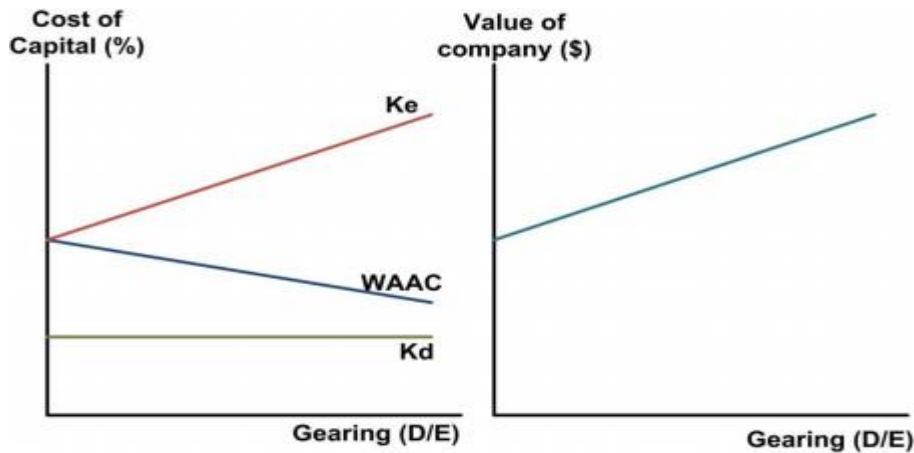
Weighted average cost of capital is not therefore affected by the financing choice adopted and thus the value of a firm is unaffected in the absence of corporate taxes in the model. In such a scenario, decisions regarding the financing choice are not imperative for the value of the firm and hence stockholders' equity. Basing on this model, a company can adopt and combination of financing choice without affecting its value. This could be depicted as;



Source: Kaplan Financial Knowledge Bank (2012)

M & M proposition II with the effect of taxes.

MM later incorporated the effect of taxes in their model in 1963. The argument was that the corporate tax ratio is equivalent to the present value of tax savings. The firm can hence decrease WACC by increasing the proportion of debt in the financing mix, resulting to the tax shield advantage (Brigham & Ehrhardt, 2010). This shield due to incremental debt lowers the WACC which in turn improves the value of the firm (Pan, 2012). This is indicated below;



Source: Kaplan Financial Knowledge Bank, (2012).

Studies have agreed as well as disagreed with the MM theory. For instance, Brigham & Gapenski (1996) contradicted MM model basing their departure that it does not work in real world since costs of insolvency will increase due to the adjustment between equity

and debt. The result is an improvement in firm value due to lower financing costs emanating from tax deductibility of interest on debt. However, the findings by Kubai (2015) and Amenya (2015) concluded that the relationship between debt and performance is inverse which is also disapproves MM theory. They found that the higher levels of debt erode profitability which ultimately decreases ROE and shareholders wealth. This implies that more capital is necessary rather than borrowing. They found out that debt finance exposes firms to high interest expense hence lowering the profitability of the firm. To avoid this, firms should therefore fund investments from internal sources in order to enhance their performance. On the contrary, the theory is however affirmed by Muhoro (2013) and Banafa (2015) whose studies found existence of a positive relationship between DER and performance which was also significant.

This theory's relevance to this study was derived from its postulate that leverage has no influence on firm value in a perfect market. The Kenyan market is however an imperfect market and hence its effect was explored in this study. Additionally, due to the presence of interest tax shield, this study sought to find out if a firm will take this advantage to shield its profit from taxes by increasing leverage in relation to equity in its financing structure and then observe how this translates to financial performance.

2.6.2 Trade-off Theory

This theory originated from the study of Kraus & Litzenberg (1973), it is based on the premise that financing decision encompasses a trade-off between the tax benefit due to debt financing and the financial distress costs which are incremental expenses that highly geared firms face above the normal cost of financing. Firms adopting the theory normally establish a target DER and works toward achieving it. The set target varies across firms based on different firm characteristics (Myers 1984). The theory was later proposed by Miller (1977) due to the discussion concerning the MM theorem. Inclusion of income tax to the initial irrelevance proposition brought about the debt benefit of shielding earnings from taxes.

Due to the fact that firms have a linear objective function and the absence of offsetting cost of debt, this gave the indication of 100% leverage. Considering this, firms determine the amount of debt and equity to utilize by trading off between the costs and benefits of

each financing source. Firms therefore have optimal financing structure where they maximize value through tax shields on debt, distress and agency costs that accompany borrowing. Finance managers endeavor to achieve and sustain the target gearing ratio to avoid deterioration of value. Highly profitable companies would therefore opt to raise their financing through debt as this would increase shareholder wealth due to higher savings through the tax benefits.

Firms which utilize more debt but have minimal profits run the risk of becoming insolvent. Considering that an optimal target level of debt for a firm is not observable, it is thus problematic to frame a perfect model to test this theory. Additionally, whereas debt minimizes tax liability, the extra cost of leverage exposes the firm to slight financial distress (Akingunola et al). According to the theory, tax credits could be utilized by profitable firms and this helps alleviate the chance of bankruptcy (Khemiri & Noubbigh, 2018; Vo, 2017) and therefore improving firm profitability.

Studies in support of this theory include; Nirajini & Priya (2013) and Park & Jang (2013) whose findings reveal positive association between debt to assets ratio and ROA. LTDR was found to affect ROA and ROE positively with the gradients indicating the ideal level of debt to maximize value and wealth creation. It is however problematic to reach a consensus on the ideal leverage level since managers can make myopic choices which are detrimental to the firm in the long run. Omollo, Muturi & Wanjare (2018) study on the effect of Equity Financing Options on Financial Performance is in support with this theory based on their finding that common stock ratio has negative effect ROA. The negative effect on performance could imply that debt should be used to improve performance as suggested by tradeoff theory.

The theory has however been criticized on the basis of lack of ideal gearing level. Therefore, application of more and more debt amplifies the debt related costs and thus outweighs the tax benefits of debt and therefore eroding the positive influence of leverage on the value of a firm (Cuong & Canh, 2012). Javed, Younas & Imran (2014) found debt to assets ratio have a negative effect when financial performance was ROE, Wu & Josh (2019) in the case of U.S. manufacturing companies. TDR was found to have a significant negative effect ROA which affirms the notion of debt related cost outweighing the tax

benefits and therefore an optimal point is necessary. The theory was relevant to this study since debt is a significant component in the financing structure and is a variable under study to assess the effect of the balance between interest tax shield and distress costs on performance to assess whether the relations hold in the Kenyan context by applying economic based performance proxies.

2.6.3 Pecking Order Theory

This theory gives the main challenge to trade off theory. It was initially proposed by Donaldson (1961) who advanced that managers desire to raise finances internally for growing the company. In the absence of the internal sources, the theory endorses conversion of assets then issueing debt and lastly through external equity as the last option. Stewart, Myers & Majluf (1984) later popularized the theory by affirming the notion of hierarchical financing choice by firms; first, use internal sources comprising of retained earnings and reserves, then go for debt and then consider preferred stock and issue common stock as the last option. The theory does not therefore recommend an optimal financing structure as the point of reference and instead propose the preference of firms to choose internal financing options over external sources. In the event that internal finances fall short of financing the investments to be undertaken, firms have an option to either raise finances externally or defer the investment. If they choose to acquire funds externally, they will carefully select the option that will subject the firm to minimal incremental cost of asymmetric information. External funds are expensive to raise since the external investors consider the moral hazard and failure risk of the normal firm (Akerlof, 1970).

External investors discount the share price judiciously when firms issue equity rather than debt and therefore, managers avoid raising finances through equity issuance if possible (Myers & Majluf, 1984). The Myers & Majluf model envisages a pecking order approach in financing. The internal source is a resultant of accumulated profits retained due to unavailability of sound opportunities to invest in and this gives rise to financial slack to shield firms from raising future funds externally. Firms with high profits can manage to create reserves and this builds up more retained earnings which prevents them from being highly leveraged (Khemiri & Noubbig, 2018). Further, profit making firms tend to

finance their needs through retained earnings since they do not impose any cost to the firm (Fama & French, 2002; Moradi & Paulet, 2019). On the contrary, loss-making firms are normally linked with high leverage level which further exacerbates the losses causing a negative relationship between leverage and profitability. The theory can thus be termed to imply that debt and profitability have an inverse relationship.

Omollo, Muturi & Wanjare (2018) study on the effect of Equity Financing Options on Financial Performance is in support with this theory based on their finding that retention ratio has positive effect on ROA while common stock ratio has negative effect on ROA. The positive effect of retained earnings concur with the proposition that corporate managers should first consider retained earnings financing before any other source. The theory ranks common stock lastly as a financing option and this also concurs with the finding of negative effect of common stock on performance and agrees with the reasoning by Myers and Majluf model (1984) of external investors discounting share price of a firm and managers can avoid this by not raising finances through equity issuance. Further, Al – Najjar & Belghitar (2011) acknowledged that leverage and profitability influence retentions of cash considering Pecking Order Theory.

The theory however is subject to some shortcomings as it ignores the effect of taxes, costs of financial distress, costs of floating securities, agency costs or the bundle of investments within the reach of the organization basing on the real financing structure. The theory further fails to consider the lost opportunities for a firm when it accumulates huge retentions as well as the immunity a firm gains due to so much financial slack. Due to these shortcomings, the theory therefore complements the tradeoff theory and cannot replace it. This theory was relevant to this study as it captured all the financing proxies under the current study. Therefore, this aspect made this theory to be the main theory for this study.

2.6.4 Agency theory

The theory was developed by Jensen & Meckling (1976). It posits that governance of a firm is based on conflicts of interest between shareholders who are the owners, its managers and providers of debt finance. The conflict is due to the diverse interests and objectives of the various groups. The managers act as agents and may have incentives to

undertake actions that reduce their employment risk or enlarge the size of the firm and hence increase their rewards (Amihud & Lev, 1981; Baker, Jensen, & Murphy, 1988; Donaldson, 1984). The managers may as well undertake non profitable investments leading to losses to the shareholders.

Debt financing acts as a governance device for reducing the conflict by reducing the amount of resources available to the managers hence reduced agency cost of free cashflow (Jensen, 1986). This is made possible due to the binding contract to repay interest cost on debt by the managers. The debt servicing cost puts pressure on managers to avoid waste which may reduce the firms ability to repay debt leading to conflict with financiers which could lead to court cases and eventual bankruptcy culminating in managers losing their decision rights and possibly their employment. This threat therefore prevents managers from undertaking wasteful actions and they aim to utilize assets efficiently, increasing firm value. Therefore, debt controls the agency problem by reducing free cashflow available to managers by making them distribute it to investors (Jensen, 1986).

Weak corporate governance mechanism may lead to suboptimal transparency in the firm and disclosure problems leading to high transaction costs and high debt issuing costs. Independent directors on the corporate board and institutional investors may improve disclosure practices by strengthening controls hence reduce asymmetry of information to solve agency conflicts (Khlif et al., 2017). Supporters of this theory base on mechanisms of reducing information asymmetry to reduce capital cost hence improve performance. Healy et al. (1999), Botosan (1997) and Botosan & Plumlee (2002) examined corporate governance disclosure dimension and its impact on the cost of debt and equity financing. The studies found that by reducing the level of information asymmetry between insiders and outsiders of the firms, financing cost is reduced and hence financial performance enhanced.

This theory was relevant to this study since it focuses on resolving challenges that arise in agency relations due to incongruent goals and different risk aversion levels. The Manufacturing sector in Kenya has been experiencing a gradual decline in performance. Shareholders (principals) invest their resources, which form part of the financing

structure which could be debt or equity while the firms design the operating strategies to maximize return on the invested funds. This therefore improves financial performance by instituting sound credit risk management strategies.

2.7 Conceptual Framework

The conceptual framework reveals the relationship between financing structure and financial performance of MAFs listed on NSE. Financing structure was conceptualized in terms of debt financing {short term debt, long term debt ratios}, equity, retained earnings and asset tangibility. Financial performance was based on economic performance proxies indicated by Tobin q and EVA. This was moderated by economic growth and earnings as was borrowed from the trade – off model of financing structure. Financial performance of manufacturing entities could be influenced by other factors but this study focused only on financing structure variables. The interplay between the study variables is portrayed in the figure 2.1.

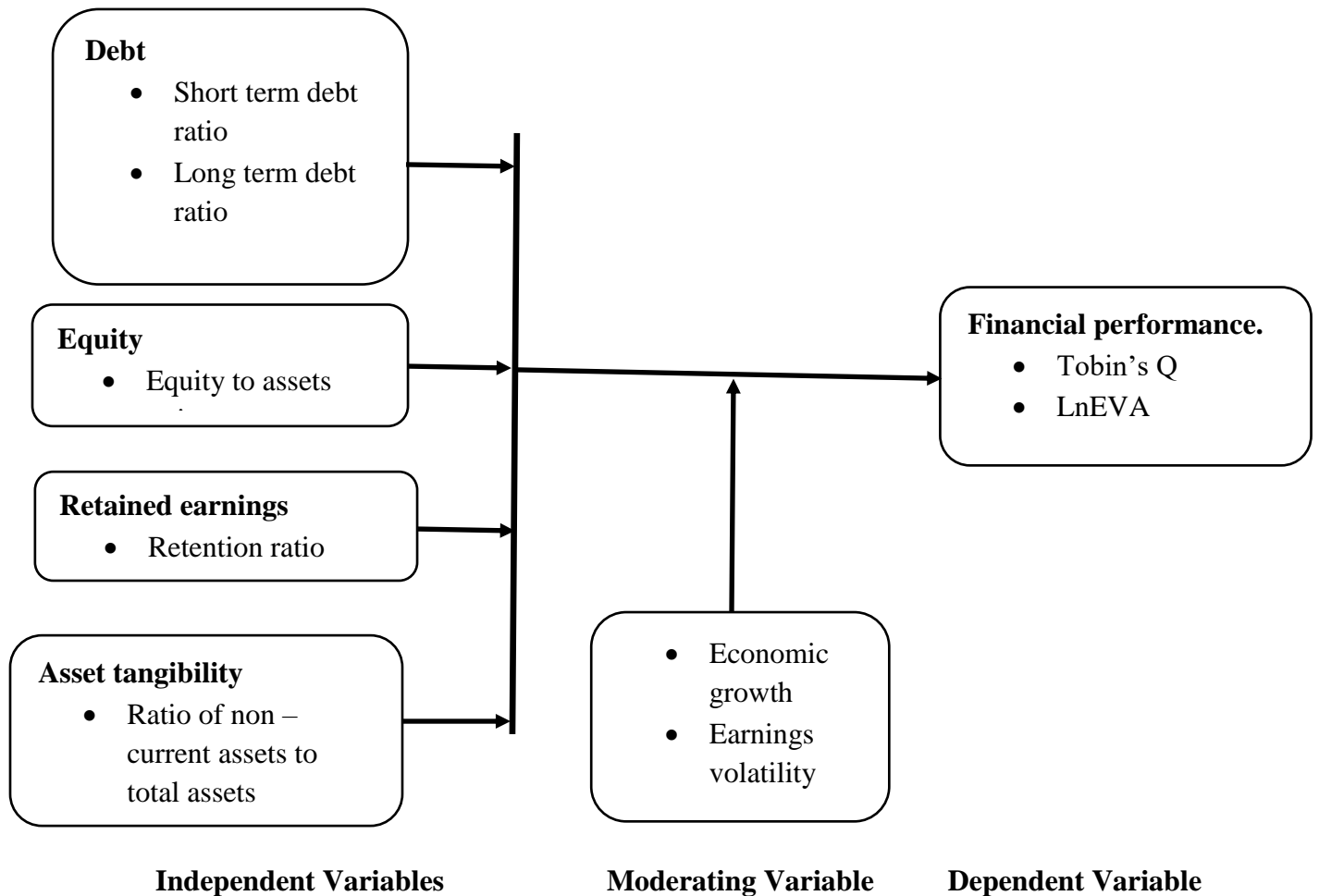


Figure 2.1: Conceptual framework

(Source: Researcher, 2021)

2.8 Variable description

This gives a list of the variables that were used in this study. The proxy measure of the variables is given and the expected relationship after the variables interact. This is shown in table 2.1.

Table 2. 1: Study Variable Description

Variable	Description	Proxy measure	Expected relationship
Independent variables			
Debt	Financial resources borrowed by one party from another for use in the normal course of business.	$STDR = \frac{STD}{TA}$ $LTDR = \frac{LTD}{TA}$	Positive, negative or no relationship
Equity	Financial resources raised by the owner(s) of the firm for use in trading.	$ER = \frac{E}{TA}$	Positive, negative or no relationship
Retained earnings	Portion of net income not distributed to the owners of an entity as dividends.	$RR = \frac{RE}{NI}$	Positive, negative or no relationship

Asset tangibility	The extent to which the firm is financed by non-current assets	$ATNG = \frac{NCTA}{TA}$	Positive, negative or no relationship
Dependent Variables			
Tobin's Q	Ratio of the market value of a firm's shares to the cost of replacing the physical assets of the firm.	$Tobin's\ Q = \frac{EMV + LMV}{EBV + LBV}$	Positive, negative or no relationship
Economic Value Added	This is a return on capital in excess of the cost sacrificed to acquire the capital.	$EVA = NOPAT - (WACC \times CI)$	Positive, negative or no relationship
Moderating variables			
Economic Growth rate	Annual growth rate of real gross domestic product (GDP)	$EGR = \frac{GDPT - GDPT - 1}{GDPT - 1}$	Positive, negative or no relationship
Earning Volatility	variability of expected income	$EVOL = \frac{\sigma EBIT}{TA}$	Positive, negative or no relationship

2.9 Empirical Gap Analysis

This gives a summary of literature that was reviewed in the text and it is broken down to show the topic of study, variables, scope, findings from the empirical studies and lastly the gap that the current study sought to address. This is displayed in table 2.2 below;

Table 2. 2: Empirical Gap Analysis

Author	Variables	Findings, Scope	Gap
Tailab (2014) Effect of capital structure on performance of firms in the USA	Total debt, Short term debt, Debt to equity ratio, ROA and ROE	30 Energy American firms and secondary data for nine years from 2005 – 2013 were included. ROE and ROA were negatively affected by total debt in a significant manner; Short term debt however, affected ROE positively	Did not conduct stationarity diagnostics.
Yemi & Seriki (2018); Retained Earnings and Firms' Market Value: Nigeria Experience	Retained earnings, dividend payout, earnings per share financial leverage and Tobin Q	A sample size of 75 listed non-financial firms which are on the Nigeria stock Market were used. Fixed and random effects model used in analysis. Retained earnings, dividend payout and earnings per share had a significant relationship with Tobin Q while financial	Study ignored the dynamic nature of firm performance by adopting the static panel approach.

		leverage had a positive but not significant relationship with Tobin Q.	
Okeke. & Okeke. (2018); Dividend policy and performance of selected quoted firms in Nigeria	Dividend payout ratio (DPR), retained earnings (RE), and cash dividend (CD)	Ex-post facto research design used. Selected quoted firms in Nigeria over the period 2010 and 2016 were studied. DPR and RE affected ROI positively while CD had a negative but not significant effect on ROI.	Used only accounting based performance proxies.
Wu & Josh (2019) The relationship between capital structure and profitability of U.S. manufacturing companies	Coverage Ratio (CR), Total Debt to Equity (TDE), Total Debt to Tangible Assets (TDTA)	Panel analysis technique was used over the period 2009 – 2018 for 15 firms. CR was significantly and positively related to ROA & ROIC. TDE & TDTA ratios had a negative and significant relationship with profitability.	Limited variables on financing structure and performance measures. The current study has wider parameters for both DV and IV. The study was conducted in an advanced market whereas Kenya is an emerging market.

<p>Javed, Younas & Imran (2014), Impact of Capital Structure on Firm Performance: Evidence from Pakistani Firms</p>	<p>DTA, LTDA and ETA) on ROA, ROE and ROS</p>	<p>Data for 5 years from 2007- 2011 was analyzed using pooled regression analysis; long term debts over assets ratio (LTDA) has negative impact on ROA, DTA and ETA showed negative link to ROS but LTDA revealed positive impact over ROS.</p>	<p>Extended period of study and inclusion of more variables and an appropriate econometric panel data model. Research was carried out in an Asian country that has different market structure compared to the Kenyan market.</p>
<p>Pouraghajan, Malekian, Emamgholipour, Lotfollahpour & Bagheri (2012); Relationship between Capital Structure and Firm Performance Evaluation Measures on Firms listed on Tehran stock exchange</p>	<p>debt ratio, asset turnover, firm size, firm age, asset tangibility on ROA and ROE</p>	<p>Data on 12 industrial groups during the years 2006 to 2010. Regression analysis was used and found a significant negative effect of debt ratio (DR) on firm performance evaluation (ROA and ROE) while firm size (SIZE) had a positive and significant ROA and ROE measures.</p>	<p>The study focused more on other variables as opposed to the conventional financing structure variables as expressed in finance theory.</p>

		Asset tangibility had positive effect on performance.	
Salim & Yadav (2012); Capital Structure and Firm Performance of Malaysian Listed Companies	TDR, LTD, and STD on ROA, ROE, EPS and Tobin's Q.	Panel data for 237 companies was collected for the years 1995-2011 TDR adversely affected ROA, ROE and EPS but strongly and significantly amplified Tobin Q.	Study focused on debt component of financing ignoring equity and retained earnings.
Dang, Bui, Dao & Nguyen, (2019), capital structure and its relationship with firm financial performance concentrating on Food and Beverage firms in Vietnam	short term debt ratio, debt ratio and long-term debt ratio on ROA & ROE	Unbalanced panel data of 605 observations from 61 listed firms in the industrial sub-sector was used. It was found that debt ratios positively and significantly influenced ROE but influenced ROA negatively.	Ignored retained earnings and equity as component of financing structure.
Cheng, Liu & Chien (2010); Capital structure and firm value in China: A panel	Debt ratio and ROE	The relationship between leverage and firm value represents an inverted U-shape and therefore financing	Moderating variable was not incorporated. Used only a single indicator of financing

threshold regression analysis		should not be used unlimitedly but up to an optimal point.	structure and single performance measure i.e. debt ratio and ROE
Kajirwa (2015); Effects of debt on firm performance: A survey of commercial banks listed on Nairobi securities exchange	Debt and ROA	Leverage reduced performance but the result was not statistically significant.	Regression analysis was employed despite the data being panel data and hence did not perform the required tests for panel data to ensure the regressions are not spurious.
Githire & Muturi (2015) ; Impact of capital structure on financial performance of non-financial firms listed on NSE	CLTA, LTLTA, TDTA and Equity on performance measured by ROA	Explanatory descriptive research design was adopted. Secondary data through 2008-2013 was used. Long term debt and equity improved performance while short term debt adversely affected performance significantly.	Research design used handles qualitative (explanatory) and descriptives (descriptive). The current study adopted a longitudinal research design.
Tufa (2016); Impact of corporate capital structure on	Interest coverage ratio (ICR), debt ratio (DR),	Quantitative research design, secondary data through the period 2010 – 2014.	Used only financing variables relating to debt.

<p>profitability of manufacturing firms in Ethiopia.</p>	<p>debt to equity ratio (DE), long term debt to capitalization ratio (LDCR), short term debt to total liability (SDTL) and long-term debt to total liability (LDTL) and control variables were size (SZ), sales growth rate (SG) and tangibility (TN) and profitability was measured by return on capital employed (ROCE).</p>	<p>Short term liabilities to total liabilities ratio, long term debt capitalization ratio and interest coverage ratio influenced ROCE positively and significantly.</p>	<p>ROCE is based on accounting profit which is a reporting concept; EVA is more robust as it considers the economic and resource allocation decision.</p>
<p>Kirmi, (2018); Relationship</p>	<p>Short-term debt to total</p>	<p>Descriptive and causal research design were</p>	<p>The study focused on debt as the only</p>

<p>between capital Structure and profitability of listed petroleum and energy firms in Kenya.</p>	<p>assets, Long-term debt to total assets, Short-term debt, long term debt and ROA</p>	<p>used. The study comprised of all the 4 energy and petroleum companies listed in the NSE. Secondary data for 5 years from 2012 – 2016 was used for analysis.</p> <p>The study found the existence of a strong positive but not significant relationship between short term debt and ROA, an average negative but not significant relationship between Long term debts and ROA and a weak positive relationship between total debt and ROA implying that an increase in debt lead to an increase in performance.</p>	<p>financing structure variable.</p>
<p>Karuma, Ndambiri & Oluoch (2018); The effect of debt financing on financial</p>	<p>Short term debt, Long term debt, interest rates, and</p>	<p>Correlational research design was used and secondary data for the periods 2013 – 2017.</p>	<p>OLS diagnostic tests were not done and ignored the effect of moderating variables</p>

performance of manufacturing firms in NSE	corporation tax rate on performance (ROA)	Short term debt has a negative but not significant effect on ROA while long term debt had positive but not significant effect on ROA	
Banafa & Ngugi (2015); The determinants of capital structure on profitability of firms in manufacturing sector in Kenya	leverage, equity financing, assets tangibility and firm size on ROA and ROI	Descriptive survey design was used and found that all variables have a positive relation with firm profitability.	Ignored retained earnings. ROA, ROI were used as the proxies for performance whereas research justifies Tobin's Q as a superior indicator
Karen (2017); The relationship between capital structure and financial performance of firms listed under manufacturing, construction and allied sector at NSE.	Capital structure proxied by DER was used as IV, Liquidity, firm size and growth opportunities were control variables and ROA was the	Secondary data for 5-year period from 2012 – 2016 was used. Descriptive research design was used and the study findings showed a negative but not significant relationship between DER and ROA.	OLS diagnostic tests not done. Other variables of financing structure were not considered under the study

	dependent variable.		
Javed, Younas & Imran (2014); Impact of capital Structure on performance: Evidence from Pakistan firms.	Debt to assets, Long term debt to assets and Equity to assets ratios on ROA, ROE and Return on sales (ROS)	Secondary data for 5 years was used from 2007 – 2011. EAR revealed a positive relationship with ROA but a negative relationship with both ROE and ROS	The study did not conduct stationarity tests that are necessary to ensure panel data does not yield spurious regressions.
Omollo, Muturi & Wanjare (2018). Effect of Equity Financing Options on Financial Performance of Non-Financial Firms Listed at the Nairobi Securities Exchange, Kenya	Common stock, retained earnings and total equity as ratios of total assets on the financial performance proxied by ROA and ROE while firm size was used as the control variable.	Panel econometric techniques were applied and a sample of 40 non-financial firms listed at the Nairobi Securities Exchange between 2009 and 2015. Findings; Common stock ratio adversely affected ROA significantly. Retention ratio improved ROA significantly	The study did not consider the preference stock component of equity. Panel data stationarity tests were not conducted.

		Total equity ratio affected ROA positively and significantly. ROE was not significantly affected by the equity variables in the sample.	
Buigut, Soi, Koskei & Kibet (2013); The relationship between capital structure and share prices of Energy firms listed at the NSE.	Debt, equity, and gearing ratio on share price	Causal research design was adopted applying multiple regression analysis. Panel data for the energy sector over the period 2006-2011 was used. The study established that equity negatively affected share prices.	OLS diagnostic tests were not done, share price as a performance proxy ignores the wealth maximization objective of firms, ignored the effect of moderating variables
Musila (2015); Relationship between equity financing and financial performance of the energy and petroleum companies listed at the NSE.	Equity financing was independent variable, growth opportunities, liquidity ratio, and firm size were used as control variables and ROE was	The study comprised of 5 firms in the energy and petroleum sector and used secondary data over 2005 to 2014 using a descriptive research design. The study found that equity financing, proxied by equity ratio	Firm's heterogeneity was not considered and used more control variables than the explanatory variables.

	dependent variable.	influenced ROE positively.	
Pouraghajan, Malekian, Emamgholipour, Lotfollahpour & Bagheri (2012); The Relationship between Capital Structure and Firm Performance evaluation Measures on 12 industrial groups listed on the Tehran stock exchange	Asset tangibility ratio, ROA and ROE	Asset tangibility ratio had a significant positive effect on ROA and ROE	Did not analyse the longrun relationship for the shortrun significant coefficients.
Pratheepan (2014); Profitability determinants of manufacturing companies listed on the Colombo Stock Exchange	ROA leverage, firm size, liquidity and tangibility	55 manufacturing companies listed on the Colombo Stock Exchange for a 10-year period through 2003 to 2012. The panel data was analyzed using static panel models. Tangibility had a statistically significant	The study however adopted a static panel model while research has found that performance is naturally dynamic and hence the dynamic panel data model could be more suitable for a study of this nature hence the

		negative relationship with ROA	current study used the dynamic model and different performance proxies to find out if the results change.
Ansari & Gowd (2017); Impact of asset tangibility and capital structure on financial performance of listed oil and gas companies in India	Asset tangibility, capital structure and financial performance.	The study employed a descriptive research design on a sample size of 11 oil and gas companies whose secondary data over the period 2007-2016 was used. capital structure has a significant positive effect on performance while asset tangibility has a negative and significant effect on performance	The study however did not incorporate the effect of moderator variable and did not conduct appropriate panel data analysis tests hence the current study intends to incorporate these and use more robust firm performance parameters.
Musah, Kong & Osei (2019); The nexus between Asset Tangibility and Firms' Financial Performance: A Panel Study of	Asset tangibility, ROA, ROE and ROCE	Correlational research design was adopted and secondary data of 15 firms through the period 2008 to 2017. Asset tangibility had a positive but insignificant	The study however did not focus on other financing variables, did not consider the effect of a moderating variable and did not conduct relevant panel data

Non-Financial Firms Listed on the Ghana Stock Exchange (GSE)		relationship with ROA, and a negative and significant relationship with both ROE and ROCE.	stationarity and diagnostic tests.
Mule & Mukras (2015). Financial leverage and performance of listed firms in a frontier market: panel evidence from Kenya	leverage, ownership, asset tangibility on ROA, ROE and Tobin's	Annual data for the period 2007 – 2011 was used. Asset tangibility had a positive and significant effect on ROE and Tobin's Q while having a negative but not significant effect on ROA	The current study focuses on introducing an additional performance measure and more variables to test if the relationship changes over an extended study period focusing on the manufacturing sector.
Kodongo, Mokoteli & Maina (2015). Capital structure, Profitability and Firm value: Panel evidence of listed firms in Kenya.	Leverage, Firm size, Asset tangibility, Sales growth on ROA, ROE and Tobin's Q.	Annual data for the period 2002 – 2011 was used. Leverage had a significant and negative effect on profitability while having a negative but not significant effect on firm value. Asset	Did not consider retained earnings and equity as financing structure components.

		tangibility also affects profitability negatively	
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2.10 Financing structure model

2.10.1 The trade-off model

Let the market value of a firm (V) which can be defined as a combination of debt (D) and equity (E) (Myers, 2001) as specified in equation i below;

$$V = D + E \dots\dots\dots (i)$$

Where $E = E_1 + E_2$; given that E_1 is internal equity (retained earnings) and E_2 being stockholders equity i.e external. The incremental value of a firm firm value depicts adjustments in the components of firm value comprising of debt and equity financing which could be expressed as; $\Delta V = \Delta D + \Delta E$. The unpaid ratio of debt can therefore be stated as:

$$\omega = \frac{D}{D+E} \dots\dots\dots (ii)$$

Supposing that the outstanding debt ratio (ω) is greater than the firm's targeted debt ratio (ω^*), the firms ought to cut down the ratio of debt through raising finance by other means. Equity for instance will be increased at a higher rate than debt through either external or internal means based on feasibility of either source. If external equity is not feasible, the firm could reduce the debt ratio through internal financing thus achieving an inverse relationship between internal financing and debt ratio.

Conversely, if the firm's outstanding debt ratio (ω) is less than the targeted debt ratio (ω^*), there is need for the firm to increase the ratio through acquisition of debt financing at a faster rate than inner sources. In this case, debt ratio will have a positive relation with internal financing so that the debt ratio can be allowed to reach the desired level.

Alternatively, if internal financing sources are depleted, the firm could raise more debt externally thus resulting in no effect between internal financing and debt ratio.

Based on the above, the financing choice can be summarized as follows; The likelihood of considering a financing option (Z) is informed by the difference between the current and the desired ratio of debt: $\Pr(Z) = \Pr(\omega - \omega^*)$ given that $\Pr(Z)$ denotes the probability of a firm applying internal financing or debt at a specific point in time. If $\omega^* > \omega$, then, $Z = \text{debt}$, in this case, firms have to amplify their debt ratio while when $\omega^* < \omega$ then $Z = \text{internal equity}$, the case being that firms have to reduce their debt ratio and instead focus on using internal equity. If $\omega^* = \omega$; $z = 0$ which indicates the firm has attained the targeted optimum debt ratio.

Actual debt corrects itself instantly to the target debt ratio in a perfect market. However, due to market imperfections in the real world which lead to non-existence of perfect markets, the actual debt ratio corrects to the target ratio with a lag due to bottlenecks comprising of adjustment cost of capital, macroeconomic instability, performance uncertainties, interest rate volatility and credit squeeze which could limit firms from accessing debt. Assuming a lagged adjustment, movements in the actual debt ratio can be expressed as a simple partial adjustment model (De Miguel & Pindado, 2001; Shyam-Sunder & Myers, 1999; Myers, 2001) as follows;

$$\omega_t - \omega_{t-1} = \alpha(\omega^* - \omega_{t-1}); 0 < \alpha < 1 \dots\dots\dots(iii)$$

Where; α denotes the adjustment coefficient comprising of the frictional costs of market imperfections. $\alpha > 0$ means that adjustment to the target does occur; and $\alpha < 1$ implies the presence of positive adjustment costs, so that this adjustment is less than instantaneous. The closer α is to unity, the faster is the adjustment speed. Therefore, the size of α is less in an imperfect capital market than in a perfect capital market. ω^* is unobservable and is estimated indirectly by modelling it as a function of observable factors suggested by the financing structure theory.

Regression models normally assume linear relationship and hence the target debt level could be expressed as follows;

$$\omega * t = \beta_0 + \beta_1 X_t + \varepsilon_t \dots\dots\dots(iv)$$

X_t is a vector of exogenous variables that affect the target debt ratio. From equation (iii) above, the actual debt ratio could be restated as below

$$\omega t = \alpha \omega * t + (1 - \alpha) \omega t_{-1} \dots\dots\dots (v)$$

If we substitute for $\omega *$ in equation (v) gives the estimating equation in which the actual debt ratio is expressed as a linear combination of the past and the target debt ratios;

$$\omega t = V_0 + V_1 \omega t_{-1} + V_2 X_t + \mu_t \dots\dots\dots(vi)$$

The parameters in equation (vi) could be simplified as;

$$V_0 = \alpha\beta_0; V_1 = 1 - \alpha; V_2 = \alpha\beta_1 \text{ and } \mu_t = \alpha \varepsilon_t.$$

The X vector includes variables intended to capture the tax factors, financial distress, agency costs and market conditions. Tax factors comprise of: the average tax rate and a measure of tax exhaustion. Agency costs are proxied by liquidity of assets, growth opportunities and investment. The risks and cost of financial distress are proxied by the size of the firm. Lending rate, stock price volatility (SPVOL) and macroeconomic performance are proxies for market conditions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research philosophy, research design, study area, target population, sample design, data collection, analysis and presentation procedures and model diagnostic tests.

3.2 Research Philosophy

This is belief on the way data Research philosophy is a belief about how data should be collected, analyzed and utilized (Jackson, 2013). Ihuah & Eaton (2013) noted that positivism, epistemology and constructivism are the common research philosophies among others. For scholars in the social sciences, the main philosophy that guides their studies is positivism and hence it was adopted in this study. Positivists believe in objectivity and stability of the reality in that life phenomena could be observed and described without interfering with the subject under study and that the researcher needs to concentrate on facts. In positivism studies, the researcher is autonomous from the study since there is no allowance for human involvements within the research thus making the study purely objective (Crowther & Lancaster, 2008). Thus, this study adopted Positivism Philosophy given the fact that firms end year financial data is prepared based on facts and principles for a particular period and expected to predict performance in future.

3.3 Research Design

Research design is a strategy laying out how data is to be collected, the instruments which will be used and how they will be applied and the analysis of this data to give results as well as the organization and display of the results. This study adopted a longitudinal research design approach which allows collection of data on the same unit at different points in time hence qualifying to utilize panel data that was collected for this study.

Panel data gives more informative data as it includes the time series and cross-sectional dimensions thus allowing the researcher to control for individual heterogeneity. It also allows the researcher to analyze change over time, study the dynamics of adjustment,

provides less collinearity among the variables, more degrees of freedom and more efficiency because more information is available on the variables and subjects under study (Baltagi, 2008; Hsiao, 2003; Klevmarken 1989). Previous researchers have also employed panel data with the recent ones being Oyieke (2016), Museve et al (2016).

3.4 Study Area

The study was carried out in Kenya since the units of study were also domiciled in Kenya. The country is geographically located in Eastern Africa with latitude of 5°N and 4 1/2°S and a longitude of 34° E and 42°E hence Kenya lies entirely on the east of the Prime Meridian. The country is bisected by the equator as shown by the GPS coordinates.

3.5 Target Population

(Zikmund, Babin, Carr, & Griffin, 2010) defines population as all items in any field of inquiry. The target population for this study comprised the nine manufacturing firms which were listed on the Nairobi Securities exchange (NSE) for the period 2010 to 2019 as shown in table 3.1. Focus on listed firms was justified by the fact that they are required to publish their financial statements and they are closely regulated by the CMA hence the study accessed all the required data.

Table 3. 1: Target population

Symbol	Listing
BOC	B.O.C Kenya Ltd
BAT	British American Tobacco Ltd
CARB	Carbacid Investments Ltd
EABL	East African Breweries Ltd
EVRD	Eveready East African Ltd
ORCH	Kenya Orchards Ltd
UNGA	Unga Group Ltd
MSC	Mumias Sugar Co. Ltd
FTH	Flame Tree Holdings Ltd

Source: (NSE, 2020)

3.6 Sampling Procedure and Sample Size

A census of the 9 manufacturing firms which were listed on the Nairobi Securities exchange (NSE) for the period 2010 to 2019 was carried out. This comprised a total of 86 observations due to missing data during the study period hence the Unbalanced Panel Analysis approach.

3.7 Data type and Source

The study used secondary data which was collected from the annual reports and audited financial statements of the firms. Secondary data is more appropriate as the performance proxies are a historical variable which has occurred. Financial statements of listed companies are certified by professional auditors and the published data is therefore expected to be reliable and accurate. Data on economic growth was collected from the Kenya National Bureau of Statistics (K.N.B.S) economic surveys.

3.8 Data Collection Procedures and Research Instruments

Document analysis guide was used to collect quantitative secondary data on financing structure variables and performance. The data was obtained from the annual reports and audited financial statements of the firms, NSE handbook, CMA and K.N.B.S.

3.9 Validity

Validity refers to the degree to which a research instrument measures what it purports to measure (Bryman, 2012). The document analysis guide was tested for both content and face validity. Content validity was done to ensure the research instrument has the adequate content coverage on the study variables. Face validity is a subjective assessment based on expert opinion and getting their feedback on whether these measures are relevant in measuring what they intend to measure. It deals with formatting the instrument and appropriateness of language. Expert analysis and opinion given by the university supervisors certified both content, construct and face validity.

3.10 Data analysis and Model selection

STATA Version 15 software was used for data analysis. Descriptive statistics such as mean, median, skewness, kurtosis and standard deviation were generated from the data. Inferential statistics were employed to test the study's hypotheses. Results were presented by the use of graphs and tables. Model Selection followed Arellano & Bond (1991) Panel data procedures.

Panel data applies the one-way error component model of the pooled OLS given by;

$$Y_{it} = \alpha_i + \beta X_{it} + \varepsilon_{it} \dots\dots\dots 3.1$$

Y_{it} represents financial performance (Tobin's Q and EVA) of the manufacturing firm i at time t , with $i = 1 \dots N = 9$ and $t = 1 \dots T = 10$.

α denotes the constant term.

β denotes the slope of the explanatory variables.

X_{it} represents a vector of financing structure variables

ε_{it} is the error component which can be decomposed into two components as under;

$$\varepsilon_{it} = \mu_i + v_{it} \dots\dots\dots 3.2$$

with $\mu_i \sim \text{IID}(0, \delta^2\mu)$ and $v_{it} \sim \text{IID}(0, \delta^2v)$ are independent of each other and among themselves. Where μ_i represents the fixed effects, which denotes the individual firm specific effects which are time invariant and are therefore not included in the regression. Furthermore, v_{it} is the idiosyncratic error term which denotes the remainder of the disturbance that varies with individuals and time and can be thought of as the usual disturbance in the regression. Panel data offers techniques to remove μ_i through the use of forward orthogonal deviations.

Panel data models follow the static or dynamic approaches depending on the nature of the dependent variable. Dynamic models take account of lags of the dependent variables among the regressors while the static models do not (Baltagi, 2005). The dynamic panel analysis techniques comprise the one-step and two-step system and difference GMM estimators. The FE and RE static models are biased in a dynamic model of panel data and pooled OLS is biased and inconsistent even if ε_{it} is not serially correlated (Baltagi, 2008). Moulton (1986) further stressed that inference based on OLS can be totally misleading even when there is no correlation between the individual effects and the regressors. Additionally, when there is endogeneity among the regressors, there is extensive bias in OLS and the RE estimators as both yield misleading inference (Baltagi, Bresson & Pirotte, 2003). Application of OLS methods to estimate parameters in a dynamic model that includes a lagged dependent variable would thus produce biased coefficients (Flannery and Hankins, 2013). Performance is naturally dynamic since performance of the previous period normally affects the current period's performance hence the dynamic panel approach in analysis. The dynamic model is formulated by the equation 3.3

$$y_{it} = \alpha + \delta y_{it-1} + \beta x_{it} + \mu_i + v_{it} \dots\dots\dots 3.3$$

Given that y_{it} is the dependent variable, y_{it-1} is the lag 1 of the dependent variable, x_{it} is a group of explanatory variables. Lag selection is purely an empirical issue and there is no hard rule on it. Given annual data was used, the study could use a minimum of 1 lag to a maximum of 2 lags. The study chose lag 1 to avoid losing degrees of freedom.

The Generalized Method of Moments (GMM) technique as proposed by Arellano and Bond, (1991) is more efficient and accounts for normality, autocorrelation and heteroskedasticity (Lee, Liang, Lin & Yang, 2015). System GMM method has been documented as the best method in estimating parameters that have incorporated lagged

dependent variables (Flannery & Hankins, 2013) as was suggested by Blundell and Bond (2000). This estimator also controls for unobserved heterogeneity and is more robust in improving efficiency gains and reducing finite sample bias (Blundell & Bond, 1998). It also addresses the unit root property problem and provides more accurate findings (Bond, 2002). System GMM also corrects for endogeneity problem by introducing more instruments to improve efficiency and transforming the instruments to make them uncorrelated with the fixed effects; μ_i and also minimizes data loss since it is more robust than difference GMM and works well in unbalanced panels. The two-step system GMM estimator was chosen for this study since the one step estimation is less efficient as it assumes homoscedastic errors. It was derived by estimating a system of two equations, one in levels using lagged first differences as instruments and the second in first difference and using lagged levels as instruments.

Data analysis was guided by the following empirical model;

$$Y_{it} = \alpha_0 + \delta y_{it-1} + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \varepsilon_{it} \dots \dots \dots 3.4$$

$$i = 1 \dots, N; t = 1 \dots, T$$

With i denoting the firms and t denoting time; the i subscript therefore, denotes the cross-section dimension whereas t denotes the time-series dimension.

X_1 = Short term debt ratio (STDR)

X_2 = Long term debt ratio (LTDR)

X_3 = Equity to assets ratio (EAR)

X_4 = Retention ratio (RR)

X_5 = Asset tangibility (ATNG)

$\alpha_0, \beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are regression equation coefficients.

i = cross sections (unit that we observe)

t = time dimension

ε_{it} = error term.

Where, Y= Performance proxied by Tobin's Q and LnEVA.

$$\text{Tobin } Q_{it} = \alpha_0 + \delta \text{Tobin } Q_{it-1} + \beta_1 \text{STDR}_{it} + \beta_2 \text{LTDR}_{it} + \beta_3 \text{EAR}_{it} + \beta_4 \text{RR}_{it} + \beta_5 \text{ATNG}_{it} + \varepsilon_{it} \dots \dots \dots 3.4a$$

$$\text{LnEVA}_{it} = \alpha_0 + \delta \text{LnEVA}_{it-1} + \beta_1 \text{STDR}_{it} + \beta_2 \text{LTDR}_{it} + \beta_3 \text{EAR}_{it} + \beta_4 \text{RR}_{it} + \beta_5 \text{ATNG}_{it} + \varepsilon_{it} \dots \dots \dots 3.4b$$

Introducing the moderator variables of Economic Growth Rate (EGR) and Earnings Volatility (EVOL) and including this in the equations 3.1a and 3.1b led to the following sets of equations;

$$\text{Tobin } Q_{it} = \alpha_0 + \delta \text{Tobin } Q_{it-1} + \beta_1 \text{STDR}_{it} + \beta_2 \text{LTDR}_{it} + \beta_3 \text{EAR}_{it} + \beta_4 \text{RR}_{it} + \beta_5 \text{ATNG}_{it} + \beta_6 \text{EGR}_{it} + \beta_7 \text{EVOL}_{it} + \varepsilon_{it} \dots \dots \dots 3.5a$$

$$\text{LnEVA}_{it} = \alpha_0 + \delta \text{LnEVA}_{it-1} + \beta_1 \text{STDR}_{it} + \beta_2 \text{LTDR}_{it} + \beta_3 \text{EAR}_{it} + \beta_4 \text{RR}_{it} + \beta_5 \text{ATNG}_{it} + \beta_6 \text{EGR}_{it} + \beta_7 \text{EVOL}_{it} + \varepsilon_{it} \dots \dots \dots 3.5b$$

The study also estimated the long run model for the study variables to assess the behavior of the relationship over time. The model was estimated using the method below;

$$\text{Long run model} = \frac{\beta_k}{1 - \Phi}; \text{ Where;}$$

β_k is the short run coefficient for the independent variable.

Φ is the short run coefficient for the lagged dependent variable

3.11 Model Diagnostic Tests and Assumptions

The estimated model was subjected to the appropriate dynamic panel data diagnostic tests. The essence of the tests was to give an assurance that the data that was obtained and applied for the analysis met the required conditions and hence the estimated models were not spurious.

3.11.1 Test for Normality

The normality test of the data was ascertained by generating the Kurtosis and Skewness coefficients of the distribution. For normally distributed data, Kurtosis value should range

from -4 to +4 while acceptable skewness should range from -3 to +3 (Mugenda & Mugenda, 2003). Further, the normality test was performed by the Cameron & Trivedi's decomposition of IM – test whose p – value should be above 0.05 significance level.

3.11.2 Multicollinearity

Multicollinearity is correlation with linear combination among independent variables. Existence of multicollinearity was tested using correlation matrix, tolerance and VIF. A correlation above 0.8 between independent variables, VIF greater than 10 and tolerance less than 0.1 indicates multicollinearity problem (Gujarati, 2007; Field, 2015). Presence of multicollinearity means that the model could include either variable, interchangeably.

3.11.3 Heteroskedasticity

Heteroscedasticity is a situation where the variance of the residual-term is not constant but varies with changes in explanatory variables (Gujarati, 2003). Existence of varying variance could indicate irregular error component that could adversely affect the estimated model. To test for panel level heteroskedasticity, the study used White's general Heteroscedasticity test which does not rely on normality assumption (Gujarati, 2003). Under the null hypothesis that there is no heteroscedasticity, sample size (n) times the R^2 obtained from regression asymptotically follows the chi-square distribution with degrees of freedom(df) equal to the number of regressors, excluding the constant term (Gujarati, 2003). If the chi-square value obtained is significant at the selected level of significance, the conclusion is that there is heteroscedasticity and we reject the null hypothesis (Muigai, 2016). If it is not significant, then there is no heteroscedasticity hence we fail to reject the null, hence the errors are homoscedastic.

3.11.4 Autocorrelation / Serial Correlation

This is the degree of resemblance between a given time series and a lagged version of itself over succeeding time periods (Escudero, 2009). To test for second order serial correlation in the model, the study used Arellano-Bond AR (2) test.

3.11.5 Unit root test

The panel data was subjected to unit root tests to establish stationarity conditions. A time series is stationary when the mean and variance are constant or independent of time and

the value of covariance between two time periods depend only on the lags between the two time periods (Gujarati & Porter, 2010). Where a series is found to be non-stationary at level, it is differenced until it becomes stationary (Gujarati, 2007, Baltagi, 2001).

Levin–Lin–Chu (2002), Harris–Tzavalis (1999), Breitung (2000; Breitung & Das 2005), Im–Pesaran–Shin (2003), and Fisher-type tests of Augmented Dickey – Fuller (ADF) and Philip Perron (PP) tests (Choi 2001) tests have the null hypothesis that panels are not stationary i.e. they have a unit root. Hadri (2000) Lagrange multiplier (LM) test has the null hypothesis that the panels are stationary i.e. do not have a unit root. These tests make divergent assumptions depending on the number of panels in the dataset and the number of time periods in each panel. These tests assume a balanced panel except for the Im–Pesaran–Shin and Fisher-type tests which allow for unbalanced panels (STATA, 2020).

The essence of conducting the stationarity tests is to be sure that we are not analyzing inconsistent and spurious relationships. ADF unit root test for a single time series has low power as it tends to reject the stationarity hypothesis of a time series. Levin, Lin and Chu (LLC) (2002) established that the power of the test for a pooled time series and panel data can be significantly increased by the use of unit root test. They developed their method from multivariate generalization of ADF test and provided statistical foundation for time series unit root tests (Choi 2001).

This study therefore adopted the Im–Pesaran–Shin test and the Fisher type tests: Augmented Dickey – Fuller (ADF) and Philips Perron (PP) tests which allow for unbalanced panels to take care of firms which could have been suspended from NSE at any point during the study period. These tests make divergent assumptions on the rates at which the number of time periods, T , and the number of panels N ; tend to infinity or whether T or N is fixed. Fisher type tests combine the p-values from the panel-specific unit-root tests using the four methods proposed by Choi (2001). Three of the methods differ in that they use the inverse χ^2 , inverse-normal, inverse-logit transformation of p-values and the fourth is a modification of the inverse χ^2 transformation that is appropriate when N tends to infinity. Inverse-normal and inverse-logit transformations are normally applicable regardless of whether N is finite or infinite. The tests correct for any serial

correlation and heteroskedasticity in the errors of the test regression by directly modifying the test statistic. If the series does not have a unit root, the null hypothesis is rejected.

3.11.6 Instruments validity

Instruments validity was tested by Hansen (1982) and Sargan (1985) test for over identifying restrictions. These tests the null hypotheses for overall validity of the instruments used. Failure to reject the null, gives support to the instruments chosen.

3.11.7 Panel Cointegration Test

Panel cointegration test provides the researcher with a mechanism to determine the long run relationship among the study variables (Baltagi et al., 2005). The essence is to test for absence of cointegration and hence determine if the panel members are error – correcting or not. The test assumes absence of cointegration among the variables and all linear combinations of the dependent and explanatory variables, including the residuals from OLS, are unit root non- stationary as suggested by Granger (1986) who observed that a test for cointegration is necessary as a pre-test to avoid spurious regression. In a spurious regression the errors would be correlated and the standard t – statistic will be wrongly calculated because the variance of the errors is not consistently estimated. The study adopted the Westerlund (2007) test for panel cointegration. The test allows for a significant degree of heterogeneity for the short run dynamics and long – run cointegrating relationships and dependence within and across cross sections.

3.12 Ethical considerations

Clearance was sought from the Ethical Review Committee of Jaramogi Oginga Odinga University of Science and Technology after which an introductory letter for data collection was sought from the Board of Postgraduate studies at Jaramogi Oginga Odinga University of Science and Technology before proceeding to collect data. A research permit from National Commission for Science, Technology and Innovation (NACOSTI) was also acquired.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of findings, results interpretation, discussion and linkage with literature reviewed and theories used as was guided by the study objectives.

4.2 Descriptive Statistics

4.2.1 Financial Performance of listed Manufacturing firms

The study established the financial performance of listed manufacturing firms using two proxies namely Tobin's Q and EVA. The study did a log transformation of EVA to LnEVA since the other variables were measured in ratio form so as to be able to analyze standardized values. The results of this analysis are shown in Table 4.1.

Table 4. 1: Financial Performance of Listed Manufacturing Firms

Variable	Obs	Mean	Std. Dev	Median	Min	Max
Tobin Q	86	1.5841	1.5685	1.0200	0.1200	5.8300
Ln EVA	86	16.5662	1.8766	16.5667	0.0000	18.9410

Source: Research data (2021)

The mean of Tobin Q for the listed manufacturing firms was 1.5481 > 1 with a median of 0.1200 implying that the sector was doing well in terms of improving its market value and hence, channeling more resources to the sector would be economically viable since the returns to be generated would outweigh the financing charges and expenses in generating the profit. The sector had a standard deviation of 1.5685 which is generally a low variance and hence, the sector is generally stable in terms of market value and therefore returns could be predicted with low volatility. The sector had a minimum value of 0.1200 and a maximum value of 5.8300 for Tobin Q for the entire study period through 2010 – 2019.

The mean of LnEVA was 16.5662 with a median of 16.5667 which is a trajectory that the sector generated adequate return than the cost of capital. On the other hand, the standard

deviation is 1.8766 implying less variation in the sector's returns hence returns could be predicted with minimum deviation. However, the sector had a minimum Ln EVA of 0.0000 since some firms had a negative value of EVA. To generate logs for this, the researcher took the minimum value of EVA (highest negative), then ignored the negative sign and added 1 to it. The sum of this was then added to the original values of EVA across the entire series. The logic supporting this was that the relative difference and relative importance of the series will be similar to the original series. This eliminated the negative values of EVA and hence, log of EVA was now generated for further analysis. The LnEVA had a maximum value of 18.9410 which shows promising prospects from the sector in terms of creating shareholder value. This supports the finding of a significant influence of EVA on stock returns (Sauro & Tafirei, 2016).

4.2.2 Financing structure of Listed Manufacturing firms.

Descriptive statistics for financing structure variables used in this study were generated to get an overview as to how the data was distributed. The results of the analysis are presented in Table 4.2.

Table 4. 2: Financing structure of Listed Manufacturing firms

Variable	Obs	Mean	Std. Dev.	Median	Min	Max
STDR	86	0.3397	0.1925	0.3182	0.0263	1.3748
LTDR	86	0.1999	0.2339	0.1079	0.0000	1.1270
EAR	86	0.4895	0.2449	0.4747	0.0010	0.9030
RR	86	0.7910	0.6317	0.7389	0.0000	3.8021
ATNG	86	0.5129	0.1838	0.5088	0.1935	0.9596

Source: Research data (2021)

The mean and median of STDR were 0.3397 with a median of 0.3182 while the mean and median of LTDR was 0.1999 and 0.1079 respectively. The higher values for STDR in relation to LTDR shows that the firms were adopting a more aggressive approach to financing by employing more short-term debt than long term debt in relative terms. This is against the conventional finance which recommends that more long-term debt is favorable for larger firms so that they spread repayment over long period and focus on growth since having more short-term debt can stifle growth as the firm focuses on defraying the costs relating to operating debt. The mean ratio of debt which is < 1.000

implies that generally, the sector has more borrowing capacity, has a high appeal for investors and lenders and hence its creditworthiness is high. This is a positive state because having relatively less debt than assets means that the firm is solvent and less risky to lend hence could access cheaper credit in the debt market, reducing cost of borrowing as the assets provide sufficient collateral. The standard deviation for STDR and LTDR was 0.1925 and 0.2339 respectively signifying minimal variation. Moreover, the minimum for STDR was 0.0263 with a maximum of 1.3748 while the minimum for LTDR was 0.0000 implying that some firms in the sector operated without applying and long-term debt for some time in the study period while the maximum LTDR ratio was 1.1270 which is also lower than maximum for STDR at 1.3748.

The equity component had mean and median values of 0.4895 and 0.4747 respectively with a minimum of 0.0010 and a maximum of 0.9030 for EAR. The mean value of 0.4895 means that almost half of the assets of the listed Manufacturing firms are owned by them and their investors hence, the health of the firms in terms of financing is sound since leverage is not high. There is also less variation as indicated by standard deviation of 0.2449 and coefficient of variation of 0.5003 implying that equity financing is generally stable and shareholder wealth creation is predictable as severe potential dilution of ownership is not foreseeable.

Retained earnings financing had a mean RR of 0.7910 meaning that firms retained a significant portion of profits for internal financing of operations. This is commendable as the retained earnings are handy to cushion the firms during periods of economic distress when losses are incurred as the retentions can be used to even out profits and ensure that the firms could pay dividends to shareholders even during losses. The retentions also help the firms to withstand adverse economic shocks and build resilience to be competitive in the region. The median of RR was 0.7389 and the variation was less as indicated standard deviation of 0.6317. The minimum value of RR was however 0.0000 that could be attributed to loss making by some firms during the study period and therefore no retentions. The maximum value was 3.8021. This is an indicator of possible growth opportunities for the firms and hence the need to retain more to finance the expansion. The sector is rapidly growing to achieve the Big 4 Agenda on manufacturing to

revolutionize and grow the economy to an industrialized as per the vision 2030. This could be better achieved by ploughing back and re investing earnings since no cost is associated with this financing choice.

The ATNG had minimal variation as shown by standard deviation of 0.1838. The minimum ATNG ratio was 0.1935 while the maximum was 0.9596. The mean and median were 0.5129 and 0.5088 respectively. This implies that the financing by non-current tangible assets was slightly above the intangibles across the sector. This implies that the assets are adequate for collateralization and securitization to enable easier access to financing. On the other hand, this could also imply that the firms are on course in recognising intangibles which are really necessary to drive the Fourth Industrial Revolution which is majorly anchored on technology and artificial intelligence.

4.2.3 Moderating variables for Listed Manufacturing firms

Descriptive statistics for the moderating variables used in this study were also and the results of the analysis are presented in Table 4.3.

Table 4. 3: Descriptive statistics for moderating variables

Variable	Obs	Mean	Std. Dev.	Median	Min	Max
EGR	86	0.0584	0.0097	0.0580	0.0460	0.0840
EVOL	86	0.0754	0.0761	0.0487	0.0203	0.5380

Source: Research data (2021)

As for the moderating variables, EGR had a mean and median of 0.0584 and 0.0580. The minimum and maximum values of EGR are 0.0460 and 0.0840 respectively. This shows an economy which is on a positive growth trajectory and therefore promising a thriving environment for industry as a growing economy stimulates investment and consumption to meet future expected demand. This is supported by Bakari (2018) who found that investment caused economic growth in Algeria in the Short run. There is minimal variation as shown by standard deviation of 0.0097 indicating a relatively stable macroeconomic environment. The minimum value of EGR was 0.0460 with a maximum value of 0.0840.

EVOL had a standard deviation of 0.0761 showing a small variability in terms of earnings and therefore there is mean reversion in the long run hence the risk in earnings variability is less. This indicates the firms face a low risk of default and bankruptcy. The mean and median of EVOL was 0.0754 and 0.0487 respectively. As a measure of financial distress risk and cost, these are small values and hence indicating confidence in the firms financing ability. It was generally observed that EVOL was low for firms in the sector and therefore this is an indicator that they can raise financing from whichever source. A low EVOL gives lenders and investors confidence as they are willing to give their resources to a firm with a low risk of default or bankruptcy.

4.3 Normality Test

The data was subjected to normality tests by examining the skewness and kurtosis of the distribution. The results in Table 4.4 below indicate that the variables are normally distributed having the skewness values ranging between -3 to +3 which is within the acceptable range for normally distributed data. On the other hand, the kurtosis values ranged from -4 to +4. This implies that the study variables are normally distributed and therefore appropriate for further analysis.

Table 4. 4: Normality Test

Variable	N	Skewness	Kurtosis
STDR	86	0.7891	2.7465
LTDR	86	1.8204	3.0264
EAR	86	-0.2071	-0.8057
RR	86	0.8038	2.7758
ATNG	86	0.1879	-0.5200
EGR	86	1.4269	2.1822
EVOL	86	0.3099	3.6876
Tobin Q	86	1.2871	0.3783
Ln EVA	86	-1.2052	3.6585

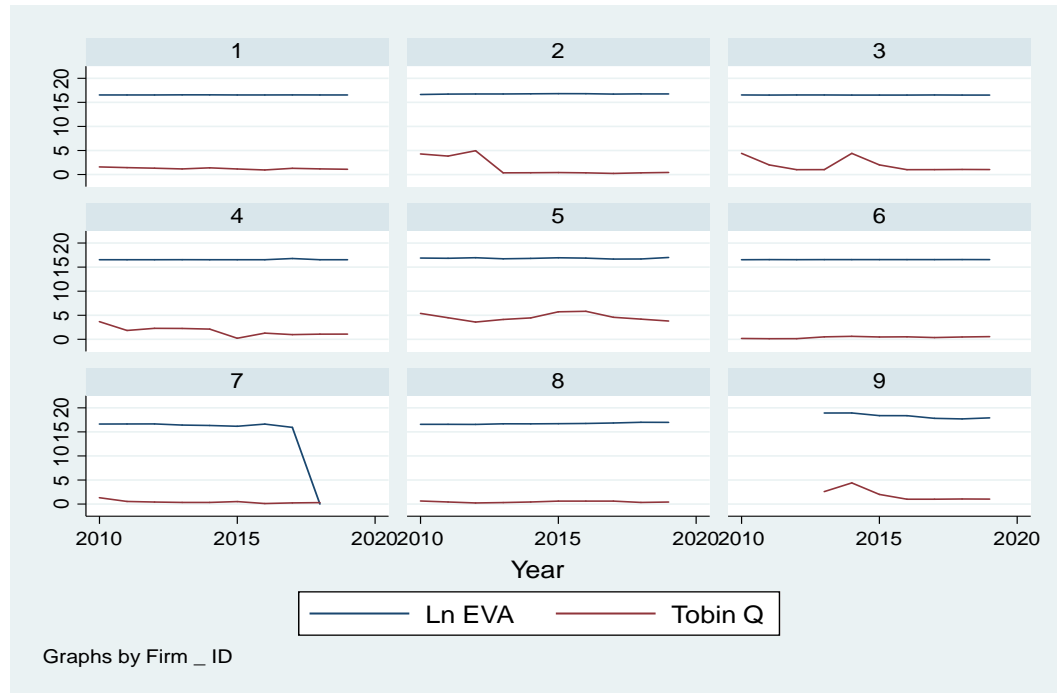
Source: Research data (2021)

4.4 Panel line plots for the study units

The study generated panel line plots to show the behavior of the dependent variables across time for each firm. The line plots revealed that the dependent variables do not

exhibit large variability in the long run and therefore, they exhibit mean reversion. This is depicted in figure 4.1.

Figure 4. 1: Panel line plots for the study units



Source: Research data (2021)

Key: 1= BOC, 2= BAT, 3 = Eveready, 4 = Carbacid, 5 = EABL, 6 = Unga – Group,

7 = Mumias Sugar, 8 = Kenya Orchards, 9 = Flame Tree

4.5 Unit Root Tests

The panel data was subjected to unit root tests to establish stationarity conditions.

4.5.1 Im-Pesaran-Shin unit-root tests

The results in tables 4.5 and 4.6 Show the unit root test results for Tobin Q and Ln EVA respectively based on the Im-Pesaran-Shin unit-root test. The test was applied due to its applicability in unbalanced panels. The header of the output summarizes the exact specification of the test and dataset. The IPS W-t-bar statistic is -11.2819 with a p – value of 0.0000 for Tobin Q while the W-t-bar is -0.7061 and p – value of 0.0198 which are significantly less than the 5% significant level and therefore the null of all panels contain

unit roots is rejected in favor of the alternate hypothesis that some panels are stationary. This rejection of the null means that some series are mean reverting over time.

Table 4. 5: Im-Pesaran-Shin unit-root test for Tobin Q

. xtunitrootipsTobinQ, lags(1)

Im-Pesaran-Shin unit-root test for Tobin Q

Ho: All panels contain unit roots	Number of panels = 9
Ha: Some panels are stationary	Avg. number of periods = 9.56
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity
Panel means: Included	sequentially
Time trend: Not included	
ADF regressions: 1 lag	

Statistic	p-value
W-t-bar	-11.2819 0.0000

Source: Research data (2021)

Table 4. 6: Im-Pesaran-Shin unit-root test for Ln EVA

. xtunitrootipsLnEVA, lags(1)

Im-Pesaran-Shin unit-root test for LnEVA

Ho: All panels contain unit roots	Number of panels = 9
Ha: Some panels are stationary	Avg. number of periods = 9.56
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity
Panel means: Included	sequentially
Time trend: Not included	
ADF regressions: 1 lag	

	Statistic	p-value
W-t-bar	-0.7061	0.0198

Source: Research data (2021)

4.5.2: Fisher type unit root tests

The study also conducted the Fisher type unit root tests of Augmented Dickey Fuller (ADF) and Phillips – Perron (PP) unit root tests. Tables 4.7 and 4.8 display stationarity test results based on ADF for Tobin Q and Ln EVA respectively. Additionally, tables 4.9 and 4.10 show the unit root test results for Tobin Q and Ln EVA based on PP. These tests were chosen as they are robust in dealing with unbalanced panel data as was the case for this study. The findings strongly reject the null hypothesis and therefore the data is stationary and will not give spurious or misleading statistical evidence.

The Fisher – type tests consider the parameter P for the autoregressive equation to vary across panels and therefore are panel specific. Choi’s (2001) simulation results suggest that the inverse normal Z statistic offers the best trade-off between size and power, and recommends its use in applications. It was observed that the inverse logit L* test concurs with the Z test. Z has a standard normal distribution and L* has a t distribution with 5N+4 degrees of freedom under the null hypothesis. The low Z and L* values cast doubt on the null hypothesis. The inverse chi-squared (X²) P test is applicable when the number

of panels is finite. This statistic has a chi-square distribution with $2N$ degrees of freedom and large values support the rejection of the null hypothesis. On the other hand, Choi (2001) proposes the use of modified inverse chi-squared P_m for large panels and therefore, the large value of P_m casts doubt on the null hypothesis. Choi's simulation results do not however give a specific value of N for which P_m should be preferred to P .

Table 4. 7: Augmented Dickey – Fuller unit-root test for Tobin Q

. xtunitroot fisher TobinQ, dfuller trend lags(1)

Fisher-type unit-root test for TobinQ

Based on augmented Dickey-Fuller tests

Ho: All panels contain unit roots Number of panels = 9

Ha: At least one panel is stationary Avg. number of periods = 9.56

AR parameter: Panel-specific Asymptotics: T -> Infinity

Panel means: Included

Time trend: Included

Drift term: Not included ADF regressions: 1 lag

	Statistic	p-value
Inverse chi-squared(18) P	87.3387	0.0000
Inverse normal Z	-2.9060	0.0018
Inverse logit t(49) L*	-6.8575	0.0000
Modified inv. chi-squared P_m	11.5564	0.0000

Source: Research data (2021)

Table 4. 8: Augmented Dickey – Fuller unit-root test for Ln EVA

. xtunitroot fisher LnEVA, dfuller trend lags(1)

Fisher-type unit-root test for LnEVA

Based on augmented Dickey-Fuller tests

Ho: All panels contain unit roots Number of panels = 9

Ha: At least one panel is stationary Avg. number of periods = 9.56

AR parameter: Panel-specific Asymptotics: T -> Infinity

Panel means: Included

Time trend: Included

Drift term: Not included ADF regressions: 1 lag

	Statistic	p-value
Inverse chi-squared (18) P	31.1776	0.0275
Inverse normal Z	-1.8986	0.0288
Inverse logit t (49) L*	-2.0225	0.0243
Modified inv. chi-squared Pm	2.1963	0.0140

Source: Research data (2021)

Table 4. 9: Phillips – Perron unit-root test for Ln EVA

. xtunitroot fisher TobinQ, pperron trend lags (1)

Fisher-type unit-root test for TobinQ

Based on Phillips-Perron tests

Ho: All panels contain unit roots Number of panels = 9

Ha: At least one panel is stationary Avg. number of periods = 9.56

AR parameter: Panel-specific Asymptotics: T -> Infinity

Panel means: Included

Time trend: Included

Newey-West lags: 1 lag

	Statistic	p-value
Inverse chi-squared (18) P	46.5081	0.0003
Inverse normal Z	-2.3527	0.0093
Inverse logit t (49) L*	-3.2820	0.0010
Modified inv. chi-squared Pm	4.7514	0.0000

Source: Research data (2021)

Table 4. 10: Phillips – Perron unit-root test for Ln EVA

. xtunitroot fisher LnEVA, pperron trend lags (1)

Fisher-type unit-root test for LnEVA

Based on Phillips-Perron tests

Ho: All panels contain unit roots Number of panels = 9

Ha: At least one panel is stationary Avg. number of periods = 9.56

AR parameter: Panel-specific Asymptotics: T -> Infinity

Panel means: Included

Time trend: Included

Newey-West lags: 1 lag

	Statistic	p-value
Inverse chi-squared (18) P	52.3147	0.0000
Inverse normal Z	-3.0195	0.0013
Inverse logit t (49) L*	-4.0639	0.0001
Modified inv. chi-squared Pm	5.7191	0.0000

Source: Research data (2021)

4.6 Collinearity Diagnostics

To check for correlations with linear combinations among the independent variables, Variance inflation factor (VIF) and tolerance tests were carried out on each of the variables used to generate the model. Table 4.11 represents the results with VIF values being less than 10 and tolerance greater than 0.1 suggesting that multicollinearity was not a problem in this study (Guajarati, 2007; Field, 2015).

Table 4. 11: Collinearity diagnostics

Dependent variable: Tobin Q, Ln EVA			
Variable	Tolerance	VIF	
STDR	0.444	2.253	
LTDR	0.297	3.369	
EAR	0.139	7.172	
RR	0.945	1.058	
ATNG	0.853	1.173	
EGR	0.943	1.06	
EVOL	0.713	1.402	

Source: Research data (2021)

4.7 Correlation Matrix

Table 4.12 shows the correlations between independent and dependent variables. For debt financing option, it is observed that Short term debt ratio (STDR) is negatively and significantly correlated to Tobin Q; ($r = -0.4790$). This shows a moderate, negative relationship implying that use of short-term debt curtails performance of manufacturing firms as measured by Tobin Q. STDR also has a moderate, negative and significant correlation with LnEVA ($r = -0.5032$, $p = 0.0000$). This is a trajectory that more short-term debt curtails the EVA of manufacturing firms through the associated costs of acquiring and servicing debt and thus eroding the returns to providers of other capital components.

Long term debt ratio (LTDR) is positively correlated with both measures of performance. It has a fairly moderate and positive correlation with Tobin Q ($r = 0.4388$). It is also strongly correlated with LnEVA ($r = 0.6570$). This therefore implies that financing using long term debt accelerates performance of manufacturing firms. MM theory suggests that firms can take advantage of interest tax shield as more debt means more interest costs which are deductible hence minimizing tax payable from profits. This shield which can improve performance of companies through tax planning purposes to pay the least taxes and hence this finding supports the tax benefits of debt in the case of MAFs.

Table 4. 12: Correlation matrix**pwcorr STDR LTDR EAR RR ATNG TobinQLnEVA,sig**

	STDR	LTDR	EAR	RR	ATNG	TobinQ	LnEVA
STDR	1.0000						
LTDR	0.2408	1.0000					
	0.0094						
EAR	-0.4715	-0.5818	1.0000				
	0.0000	0.0000					
RR	0.3007	0.4278	-0.3591	1.0000			
	0.0163	0.0099	0.0016				
ATNG	-0.1688	0.3442	-0.2146	-0.3250	1.0000		
	0.0290	0.0235	0.0040	0.0013			
TobinQ	-0.4790	0.4388	-0.2682	0.5997	0.6331	1.0000	
	0.0006	0.0002	0.0215	0.0053	0.0022		
LnEVA	-0.5032	0.6570	0.5218	0.3197	0.3683	0.4607	1.0000
	0.0000	0.0489	0.0000	0.0027	0.0005	0.0763	

Source: Research data (2021)

Equity financing reveals a weak negative correlation with Tobin Q ($r = -0.2682$). This reveals that equity financing dilutes ownership of a firm and hence dilutes earnings per share (EPS) which in turn make a firm unattractive to investors therefore depressing its market share price to levels of even below their book value. On the other hand, EAR has a moderate positive correlation with Ln EVA ($r = 0.5218$). This implies that use of equity financing fits well with the long-term wealth maximization and goal congruence between shareholder and management which improves the true economic profit as measured by EVA.

Retained earnings financing component as proxied by retention ratio (RR) and a moderate positive correlation ($r = 0.3197$) with Tobin Q and a strong positive correlation ($r = 0.5997$) Ln EVA respectively. This implies that the Manufacturing firms that focus on retained earnings financing results in improved financial and economic performance. Asset tangibility (ATNG) is also positively correlated with the performance measures as shown by a moderate, positive and significant correlation with Tobin Q ($r = 0.4331$) and a moderate, positive and significant correlation ($r = 0.3683$) with Ln EVA.

4.8 Panel Cointegration test

Panel Cointegration test was performed. Table 4.13 and 4.14 show the Westerlund cointegration test results when the dependent variables are Tobin Q and Ln EVA respectively which were tested at the 5% significance level. This test has the null hypothesis; Ho: No cointegration. The p – values obtained of 0.4092 and 0.1044 respectively which are > 0.05 leads to failure to reject the null and we conclude that there is no cointegration among the variables and therefore no spurious regressions.

Table 4. 13: Westerlund test for cointegration

Ho: No cointegration	Number of panels	=	9
Ha: All panels are cointegrated	Avg. number of periods	=	9.5556
Cointegrating vector: Panel specific			
Panel means:	Included		
Time trend:	Not included		
AR parameter:	Same		
Cross-sectional means removed			
	Statistic	p-value	
Variance ratio	0.2295	0.4092	

Source: Research data (2021)

Table 4. 14: Westerlund test for cointegration

Ho: No cointegration	Number of panels	=	9
Ha: All panels are cointegrated	Avg. number of periods	=	9.5556
Cointegrating vector: Panel specific			
Panel means:	Included		
Time trend:	Not included		
AR parameter:	Same		
Cross-sectional means removed			
	Statistic	p-value	
Variance ratio	1.2566	0.1044	

Source: Research data (2021)

4.9 Model estimation and hypothesis testing

Tables 4.15 and 4.16 below show the results of the two-step system GMM dynamic panel regression models for Tobin Q and EVA respectively as measures of financial performance of Manufacturing firms listed on NSE Kenya in the short run.

4.9.1 Model Reliability and Fitness

The dynamic two step system GMM was tested for reliability using the Wald chi2 – statistic. Tables 4.15 and 4.16 show that the Wald statistic is significant at the 5% level. The Wald chi2 p-value of $0.0000 < 0.05$ leads to rejection of the null hypothesis of zero coefficients and we therefore conclude that all the explanatory variable coefficients are significantly different from zero at the 5% significance level. The model also appears to fit well as the Sargan and Hansen test results for instrument validity are > 0.05 and hence we fail to reject the null that instruments are valid and therefore no evidence of over identifying restrictions. The models also do not suffer from second order serial correlation as shown in table 4.15 and 4.16 by Arellano-Bond AR (2).

The Dynamic nature of the model was captured by incorporating the lagged dependent variables up to lag 1 to avoid losing more degrees of freedom since the study used annual

data. This differencing of the once resulted in data loss of an observation for each unit under study and therefore the observations reduced from 86 to 77 observations. The lagged dependent variables of (Tobin Q L1 and LnEVA L1) measure the extent to which past year's performance contributes to the current year's performance of MAFs. The coefficients of the lagged dependent variables are 25.38% (significant at 5%) and 30.30% (significant at 5%) for Tobin Q L1 and LnEVA L1 respectively as shown in table 4.15 and 4.16. The significance of these lagged coefficients indicate existence of persistence in performance of MAFs and this therefore justified the use of a dynamic model.

Table 4. 15: Dynamic panel-data estimation, two-step system GMM: Tobin Q

Dynamic panel-data estimation, two-step system GMM						
Group variable: Firm_ID		Number of obs		=	77	
Time variable : Year		Number of groups		=	9	
Number of instruments = 9		Obs per group: min		=	6	
Wald chi2(6) = 7821.93		avg		=	8.56	
Prob> chi2 = 0.000		max		=	9	
TobinQ	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
TobinQ						
L1.	.2537811	.0625076	4.06	0.000	.2451604	.8624019
STDR	-.1954826	.1524095	-2.61	0.005	-.4009691	1.196547
LTDR	.2114218	.0822653	2.57	0.005	-.9362796	1.359123
EAR	-.1674526	.0534992	-3.13	0.000	-1.021289	.9483777
RR	.0719257	.0195451	3.68	0.000	-.2854979	.3993492
ATNG	.0572843	.0121623	4.71	0.000	.3948779	1.856048
cons	.5429004	.2513428	2.16	0.031	.0912827	1.918587
Arellano-Bond test for AR(1) in first differences: z = -1.72 Pr > z = 0.085						
Arellano-Bond test for AR(2) in first differences: z = -0.18 Pr > z = 0.861						
Sargan test of overid. restrictions: chi2(2) = 0.57 Prob> chi2 = 0.750						
Hansen test of overid. restrictions: chi2(2) = 0.99 Prob> chi2 = 0.609						

Source: Research data (2021)

Table 4. 16: Dynamic panel-data estimation, two-step system GMM: LnEVA

Dynamic panel-data estimation, two-step system GMM						
Group variable: Firm_ID				Number of obs	=	77
Time variable : Year				Number of groups	=	9
Number of instruments = 9				Obs per group: min	=	6
Wald chi2(6) = 33052.63				avg	=	8.56
Prob> chi2 = 0.000				max	=	9
LnEVA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
LnEVA						
L1.	.3027194	.1073473	2.82	0.005	.0636539	.5423842
STDR	-.2495623	.0897706	-2.78	0.005	-1.271131	4.251966
LTDR	.4716380	.0870014	5.42	0.000	.0333470	6.109931
EAR	.2901601	.1696843	1.71	0.087	-3.936401	7.516721
RR	.2175243	.1007056	2.16	0.031	.9167313	1.637603
ATNG	.0427016	.0212446	2.01	0.044	.5402681	1.275384
cons	.6949332	.1946592	3.57	0.000	.4352974	4.845316
Arellano-Bond test for AR(1) in first differences: z = -2.16 Pr > z = 0.071						
Arellano-Bond test for AR(2) in first differences: z = 0.59 Pr > z = 0.558						
Sargan test of overid. restrictions: chi2(2) = 6.54 Prob> chi2 = 0.058						
Hansen test of overid. restrictions: chi2(2) = 1.39 Prob> chi2 = 0.498						

Source: Research data (2021)

The models were therefore predicted to;

$$Tobin Q_{it} - 1 = 0.5429 + 0.2538TobinQ_{it} - 1 - 0.1955STDR + 0.2114LTDR - 0.1675EAR + 0.0719RR + 0.0573ATNG$$

$$LnEVA_{it} - 1 = 0.6949 + 0.3027LnEVA_{it} - 1 - 0.2496STDR + 0.4716LTDR + 0.2901EAR + 0.2175RR + 0.0427ATNG$$

4.9.2 Hypotheses tests

The study hypotheses developed were tested per objective as follows;

4.9.2.1 Debt Financing and financial performance of Listed Manufacturing firms in Kenya

The first objective was to establish the effect of debt financing on performance of listed manufacturing firms in Kenya. The null hypothesis was stated as;

H₀₁: Debt financing has no significant influence on performance of listed manufacturing firms in Kenya.

The study operationalized debt financing to be proxied by Short term debt ratio (STDR) and long-term debt ratio (LTDR) which led to development of two sub hypotheses for testing;

H_{01.1}: Short term debt financing has no significant influence on performance of listed manufacturing firms in Kenya.

H_{01.2}: Short term debt financing has no significant influence on performance of listed manufacturing firms in Kenya.

Tables 4.15 shows that the coefficient for STDR was negative ($\beta = -0.1955$) significant at the 5% significance level when Tobin Q was the dependent variable. In table 4.15, the coefficient of STDR is also negative ($\beta = -0.2496$) and significant at the 5% level of significance when the dependent variable is LnEVA. This shows that for a unit increase in short term debt ratio drives performance on a downward trajectory by 19.55% and 24.96% for Tobin Q and LnEVA respectively. MAFs should therefore minimize use of short-term debt in their financing plan. The Z – statistics are significant for both and hence we reject the null sub - hypothesis and conclude that STDR has a negative and significant influence on financial performance measures of Tobin Q and LnEVA.

The regression estimate for Long term debt ratio (LTDR) was positive and significant at the 5% significance level with coefficients of 0.2114218 and 0.471638 with Tobin Q and LnEVA as dependent variables respectively. This shows that a unit increase in long term debt ratio in the financing structure accelerates Tobin Q by 0.211 and LnEVA by 0.472 units. The Z -statistic for LTDR is significant at 5% level as shown in table 4.15 and table 4.16. The null sub – hypothesis was therefore rejected in favor of the alternate and

conclude that LTDR has a positive and significant influence on Tobin Q and EVA as financial performance proxies.

STDR comprising of liabilities expected to mature within one year was operationalized in this study as a ratio of short-term debt to total assets and was found to have a negative and significant influence on performance of MAFs. This could be attributed to the fact that short term financing sources charge much higher interest rates in relative terms and is riskier as it needs to be retired within a shorter duration. Given its negative influence on performance, managers need to use it cautiously by adopting a more conservative financing approach that can improve performance. This will shield the MAFs as conservative financing approach is less vulnerable to increase in short term rates.

This finding is in agreement with the empirical result of Githire & Muturi (2015) who found that financial performance of listed non-financial firms is significantly negatively affected by short term debt. Further, Karuma, Ndambiri&Oluoch (2018) found that Short term debt was had a negative effect on performance of manufacturing firms. However, a study by Salim & Yadav (2012) in the case of Malaysian Listed Companies found that STD had a strong positive and significant relationship Tobin Q. Further, the finding by Tufa (2016) who studied the impact of corporate capital structure on profitability of manufacturing firms in Ethiopia found that short term debt had a significant positive effect on profitability. The difference in findings could be a result of different methodology used.

LTDR had a positive and significant influence on performance. This could be attributed to the fact that borrowing long term eases pressure from the firm as repayment is spread over a long duration and is suitable for matching long term investments which characterize the manufacturing sector. Higher gearing levels which enhance financial performance through tax shields advanced on interest paid on debt. The long-term debt allows the firm to repay the debt from the proceeds generated from the asset it was used to finance as it could be tied to project financing.

This finding concurs with Nyamoma & Sporta (2020) who found that debt financing had a positive and significant effect with EVA. Further, Salim & Yadav (2012) found that

long term debt had a strong positive and significant relationship with Tobin Q. Other studies with similar findings include; Dang, Bui, Dao and Nguyen, (2019) Yasin & Pramita (2021) and Tufa (2016). However, the study finding by Kodongo, Mokoteli&Maina (2015) differ with this finding. This could be attributed to a variation in sample size used and different study period as well as adoption of a different estimation model as their study had adopted the fixed effects model.

The finding on this objective supports conventional finance which recommends that more long-term debt is favorable for larger firms so that they spread repayment over long period and focus on growth since having more short-term debt can stifle growth as the firm focuses on defraying the costs relating to operating debt. The positive effect of LTDR on performance is in line with MM theory to take advantage of interest tax shield as more debt means more interest costs which are deductible hence minimizing tax payable from profits. This shield is normally used by companies for tax planning purposes to pay the least taxes.

4.9.2.2 Equity Financing and financial performance of Listed Manufacturing firms in Kenya

The second objective of the study was to determine the effect of equity financing on performance of listed manufacturing firms in Kenya. The null hypothesis was therefore stated as;

H₀₂: Equity financing has no significant effect on performance of listed manufacturing firms in Kenya.

Table 4.15 show that the regression weight for EAR was negative and significant when Tobin Q was the dependent variable. The null hypothesis was thus rejected in favor of the alternate hypothesis at $p = 0.000 < 0.005$ significance level. The weight of the regression estimate was -0.1674526 indicating that a unit increase in equity financing curtails Tobin Q by 0.1675. This could be attributed to the effect of dilution of EPS as more shareholders are brought on board. This dilution of EPS could lead to a negative signaling effect to investors hence depressing the market value of the share. This depressed market value of equity could go lower than even the book value of equity hence a decrease in Tobin Q. This finding supports the Myers & Majluf model (1984) which posits that outside investors rationally discount the firm's stock price when managers

issue equity instead of riskless debt. To avoid this discount, managers should avoid equity whenever possible.

This finding concurs with Javed, Younas & Imran (2014) in the case of non – financial firms listed on Karachi Stock Exchange in Pakistan. Who found existence of a negative relationship between Equity over assets ratio and financial performance. Further, Buigut, et al (2013) established that equity negatively affected share prices. These depressed share prices curtail Tobin Q further supporting the findings of the current study. The finding by Ibrahim et al (2020) in the case of Nigerian firms that that equity finance reduces Tobin Q further support the finding of the current study. Despite different research design, time period and methodology, the findings agree and therefore MM financing structure irrelevance theory is challenged by the findings at least when Tobin Q is the proxy for performance.

The findings however differ with that by Banafa & Ngugi (2015) who found that equity financing had a positive relation with performance and concluded that equity financing improves performance and therefore firms should prefer it in financing their operations and expansion. The difference in finding could be attributed to different methodology and study period.

Table 4.16 shows a positive but not significant relationship between EAR and EVA. The regression weight is 0.29 and $p = 0.087 > 0.05$ hence, the null hypothesis was not rejected. The regression estimate of implies that a unit increase in equity financing accelerates EVA by 0.29 units. Nyamoma & Sporta (2020) found that equity financing had a positive effect on EVA hence supporting the current study's finding.

The increase in EVA by employing more equity could be due to the fact that equity financing does not subject a firm to additional financial burden other than dividend which is optional and companies have no obligation to redeem the shares issued.

4.9.2.3 Retained Earnings Financing and financial performance of Listed Manufacturing firms in Kenya

The third objective of the study was to examine the effect of retained earnings financing on performance of listed manufacturing firms in Kenya. The null hypothesis was therefore stated as follows;

H₀₃: Retained earnings have no significant effect on performance of listed manufacturing firms in Kenya.

Retained earnings was operationalized and proxied by retention ratio (RR). Table 4.15 and 4.16 show a positive relationship between RR and both performance proxies. The regression coefficient for RR is 0.0719257 and 0.2175243 with Tobin Q and EVA respectively. The relative regression weight is higher for Tobin Q than for EVA (21.75% against 7.19%). The z – statistic of RR is significant and therefore the null hypothesis was rejected and the study concluded that RR has a positive and significant effect on Tobin Q and EVA.

The results concur with the finding of Okeke & Okeke (2018) in the case of Nigerian Quoted firms who found that retained earnings had positive and significant effect on performance. Further, the finding support Akani & Sweneme (2016) who studied Quoted Manufacturing Firms in Nigeria and found that retention ratio has positive effect on firm performance. The finding by Omollo, Muturi & Wanjare (2018) also support the study's finding. The findings however differ with Thurairara (2014) who found that retained earnings had a very weak, negative insignificant relationship with performance. The difference in finding could be due to different methodology and model adopted for analysis.

This finding implies that use of retained earnings improves firm performance and hence firm value. Retained earnings do not impose any cost to the firm and hence should be utilized. Firms which are experiencing a growth phase have opportunities to invest. They can do so cheaply by resorting to retained earnings to achieve shareholder wealth maximization and avoid dilution of earnings. This finding supports the Pecking order theory and Donaldson's model which proposed that managers prefer internal financing for growth. Further, this finding affirms Stewart Myers & Majluf (1984) that firms must pursue an order of hierarchical financing beginning with the use internal financing.

4.9.2.4 Asset tangibility and financial performance of Listed Manufacturing firms in Kenya

The third objective of the study was to establish the effect of asset tangibility on performance of listed manufacturing firms in Kenya. The null hypothesis was therefore stated as follows;

H₀₄: Asset tangibility has no significant effect on performance of listed manufacturing firms in Kenya.

The study finding for ATNG variable show a positive relationship with both performance proxies. The regression coefficient of ATNG equals 0.0572843 and 0.0427016 for Tobin Q and EVA respectively. The Z –statistic is positively significant hence the null hypothesis is rejected. This positive effect implies that asset tangibility significantly improves a company’s valuation as a financing target. MAFs should therefore invest in more tangible assets for financing operations as they can be securitized as special purpose vehicles to raise their own finances for expansion. The ATNG financing enable the MAFs to qualify for investment deductions against annual profits for taxation and therefore acts as a saving to the firm.

This positive effect result is in agreement with Mule & Mukras (2015) who found that asset tangibility had a positive and significant effect Tobin’s Q and concluded that asset tangibility is a significant predictor of firm performance. Firms with more tangible assets are able to secure financing at low cost since they are considered stable and will exist in the long-term period. Therefore, this lowered cost minimizes an outflow of resources hence improving the financial performance.

However, this finding differs with the finding by Kodongo, Mokoteli & Maina (2015) who found that asset tangibility also affects performance negatively. This difference could be due to different study period, variables combination and the nature of the model estimation adopted.

MAFs need to consider project financing to limit exposure to credit risk as the deal is secured by the project’s future revenues from production. This will not have adverse effects on performance since the creditor cannot pursue the firm for payment but only the

assets and cash flows of the project itself. Further, firms could consider collateralization of assets by creating special purpose vehicles from their asset pools which can raise their own finances and become separate legal personalities. This could guarantee the counterparties of the firm that their obligations will be met even if the main entity which is the Manufacturing firm goes under. This finding further supports Donaldson model about asset conversion after internal financing.

4.10 Long run models

Table 4.17 and 4.18 show the results of the long run coefficients of financing structure variables on Tobin Q and LnEVA respectively.

Table 4. 17: Long run model: Tobin Q

TobinQ	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
STDR	-.2619642	.1912147	-1.37	0.170	-2.030197	1.195775
LTDR	.2833241	.1034030	2.74	0.006	-1.639057	.4231323
EAR	-.2244014	.0684151	-3.28	0.001	-4.472057	.9431064
RR	.0963869	.0240366	4.01	0.000	-.721544	.6512445
ATNG	.0767661	.0329468	2.33	0.020	-1.789139	2.517129

Source: Research data (2021)

Table 4. 18: Long run model: LnEVA

LnEVA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
STDR	-.3579080	.3408648	-1.05	0.294	-5.261985	11.48336
LTDR	.6763963	.1480079	4.57	0.000	-.1971631	1.802796
EAR	.4163104	.2325756	1.79	0.073	-.257314	.7293461
RR	.3139758	.1266031	2.48	0.013	-.215368	.1303902
ATNG	.0612401	.0334645	1.83	0.077	-.126983	.6835135

Source: Research data (2021)

4.10.1 Long run effect of debt financing on performance of MAFs

For the long run model, the two sub hypotheses of debt financing were tested as follows;

Long run effect of STDR on Tobin Q and EVA (-0.2619642 and -0.3579080 respectively).

A percentage increase in short term debt is associated with 26.20 % and 35.79% decrease in Tobin Q and EVA in the long run on average, *ceteris paribus*. However, these coefficients are not significant at the 5% level and the Z –statistic < 1.96 (critical value).

STDR therefore has a negative effect on performance of MAFs both in the short run and in the long run. However, it has a larger negative effect in the long run than in the short run but the coefficients are not significant hence the null sub hypothesis is not rejected for the long run coefficients. The MAFs should therefore minimize the proportion of short term debt they employ in their financing structure or negotiate for long term loans to avoid this negative effect. Alternatively, they can match the source of financing with the activity or negotiate better and favorable terms on short term loans in the long run.

Long run effect of LTDR on Tobin Q and EVA (0.2833241 and 0.6763963 respectively).

A percentage increase in long term debt is associated with 28.33 % and 67.64 % increase in Tobin Q and EVA in the long run on average, *ceteris paribus*. These coefficients are significant at the 5% level and the Z –statistic > 1.96 (critical value). LTDR therefore has a positive and significant effect on performance of MAFs both in the short run and in the long run. The null sub hypothesis is also rejected for the long run coefficients. MAFs should therefore endeavor to finance operations using more of long-term debt as it improves performance and hence firm value thus promising a stable and thriving manufacturing sector to facilitate achievement of Big 4 Agenda. This implies that the returns from employing long term debt far much outweighs the cost of the debt both in the short run and in the long run.

4.10.2 Long run effect of equity financing on performance MAFs

The long run coefficients are -0.2244014 and 0.4163104 for Tobin Q and LnEVA respectively. This implies that a percentage increase in equity financing curtails Tobin Q by 22.44% and increases EVA by 41.63% in the long run on average, *ceteris paribus*. The coefficient with Tobin Q as the dependent variable is significant at the 5% significance level and hence, the null hypothesis is rejected as was the case with the short run coefficient. Therefore, it is concluded that EAR has a significant negative effect on Tobin Q both in short run and in the long run. However, the effect size is greater in the long run than it was in the short run. For LnEVA, EAR has a positive but not significant effect both in the long run and in the short run and therefore, the null hypothesis is not

rejected for the long run coefficient. However, the effect size is larger in the long run (41.63%), compared with the short run (29.02%).

4.10.3 Long run effect of Retained earnings financing on performance of MAFs

The long run coefficients for RR are 0.0963869 and 0.3139758 when the dependent variable is Tobin Q and LnEVA respectively. This implies that a percentage increase in retained earnings improves Tobin Q by 9.64% and EVA by 31.40% in the long run on average, *ceteris paribus*. For both, the coefficients are significant at the 5% significance level and hence the null hypothesis is rejected in the long run as was the case for the short run coefficients also. However, the effect size is greater in the long run compared to the short run coefficients.

4.10.4 Long run effect of Asset tangibility financing on performance of MAFs

The long run coefficients for ATNG are 0.0767661 and 0.0612401 when the dependent variable is Tobin Q and LnEVA respectively. This implies that a percentage increase in ATNG improves Tobin Q by 7.68% and EVA by 6.12% in the long run on average, *ceteris paribus*. The coefficient for ATNG with Tobin Q is significant at the 5% level and hence the null hypothesis is rejected for the long run coefficients as was the case in the short run. The regression weight is however higher in the long run (7.68%) than the short run coefficient (5.73%) run. The coefficient of ATNG with LnEVA was however not significant in the long run and hence we fail to reject the null hypothesis for the long run coefficient. The effect size is however bigger in the long run (6.12%) compared to the short run (4.27%).

4.11 White test for Heteroscedasticity

Table 4.19 shows the results of White test for heteroskedasticity. The White's test gave the same p-value to the Cameron & Trivedi heteroskedasticity test. Using a significance p-value of 0.05, the regression model does not violate the homoscedasticity assumption and therefore, the null hypothesis that the errors are homoscedastic was not rejected and hence heteroskedasticity was not a problem in this study. The same applies to the

skewness and kurtosis assumptions whose p values are also well above the 0.05 significance level.

Table 4. 19: White test for heteroscedasticity

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. estat imtest, white
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White's test for Ho: homoskedasticity
 against Ha: unrestricted heteroskedasticity
 chi2(20) = 18.24
 Prob > chi2 = 0.5719

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	18.24	20	0.5719
Skewness	8.69	5	0.1220
Kurtosis	1.60	1	0.2063
Total	28.53	26	0.3331

Source: Research data (2021)

4.12 Model summary

Table 4.20 shows the F- value of the model being 17.80 with a p value of $0.0000 < 0.05$ significance level. This indicate that the model is good and can be relied upon for prediction. The value of R square when all explanatory variables were considered jointly was 0.5563 (55.63%). This indicates that 55.63% variation in performance of the listed MAFs can be explained by variations in long debt, equity, retained earnings and asset tangibility while remaining 44.37% variation would be explained by other factors that affect performance but not under the current study. The adjusted R square 0.5251 (52.51%) implies that for the Manufacturing sector, the explanatory variables contribute to 52.51% variation in performance while the remaining 47.49% would be explained by other factors that affect performance of MAFs not under the current study.

Table 4. 20: Model summary

. reg utsq STDR LTDR EAR RR ATNG

Source	SS	df	MS	Number of obs	=	77
-----+-----				F(5, 71)	=	17.80
Model	1580.73023	5	316.146047	Prob > F	=	0.0000
Residual	1260.74449	71	17.7569646	R-squared	=	0.5563
-----+-----				Adj R-squared	=	0.5251
Total	2841.47472	76	37.3878253	Root MSE	=	4.2139

Source: Research data (2021)

4.13 Effect of the Moderating variables

The study used two moderating variables; economic growth rate and earnings volatility. Earnings volatility was used to measure risk and cost of financial distress while economic growth rate measured macroeconomic performance. The moderating variables were implied from the trade – off model. The two-step system GMM model was estimated and presented in table 4.21 and 4.22.

The EGR which show macroeconomic growth shows a positive and significant effect on both Tobin Q and LnEVA having regression weights of .1582140 and .2052327 respectively. This shows that economic growth rate has a significant positive influence on performance of the manufacturing sector in Kenya. The average economic growth was 0.0584 (5.84%) through the study period as measured by real GDP growth rate. This positive economic outlook created an appropriate environment for investment and consumption which enabled manufacturing to thrive. This further supports the finding by (Ngugi, 2008) that GDP growth rate has a positive impact on leverage which is a trajectory of investor confidence in a growing economy to stimulate demand hence the possibility upside profits.

EVOL which was used to measure risk and cost of financial distress showed a negative but not significant effect on Tobin Q while having a negative and significant effect on LnEVA. The EVOL had a standard deviation of 0.0761 showing a small variability in earnings which affects performance negatively. EVOL averaged 0.0754 through the study period for the MFAs and this exposes the firms to agency cost of borrowing which

curtails their performance. This finding further affirms the finding of Fama & French (2002) who identified a direct relationship consistent with the agency cost of debt, resulting in risky firms borrowing more. This negative effect further supports the argument that earnings volatility has a positive and significant effect on leverage which in turn curtails performance (Saif-Alyousfi, Md-Rus, Taufil-Mohd, Taib, & Shadar, 2020).

The moderating variables have however worsened the effect of STDR on Tobin Q slightly. This could be attributed to the negative influence of EVOL which could expose the firm to risk and hence face higher borrowing costs. There is however a slight improvement with LnEVA though the coefficients are still negative. This improvement could be attributed to the positive effect of EGR which neutralises the negative effect of EVOL to some extent through reduced capital costs in a growing economy. The moderator variables improved the effects of LTDR, EAR and ATNG on Tobin Q while the effect on RR on Tobin Q was worsened. On the other hand, the effect of moderator variables on LnEVA was worsened in the case of LTDR, EAR while improved in the case of RR and ATNG.

Table 4. 21: Dynamic panel-data estimation, two-step system GMM: Tobin Q with moderator variables

Dynamic panel-data estimation, two-step system GMM

Group variable: Firm_ID	Number of obs	=	77
Time variable : Year	Number of groups	=	9
Number of instruments = 11	Obs per group: min	=	6
Wald chi2(8) = 5676.33	avg	=	8.56
Prob> chi2 = 0.000	max	=	9

TobinQ	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
TobinQ					
L1.	.2173323	.0620950	3.50	0.001	.1832243 .8514403
STDR	-.1974253	.8973877	-0.22	0.827	-3.092903 3.774235
LTDR	.2648140	.0652251	4.06	0.000	.6652861 2.536038
EAR	.1524863	.0566864	2.69	0.007	-4.024435 3.239596
RR	.0591928	.0210651	2.81	0.005	-.3942982 .5181643
ATNG	.0734261	.0219839	3.34	0.000	-2.948885 4.005571
EGR	.1582140	.0577423	2.74	0.006	.4616602 1.038149
EVOL	-.0605143	.0364544	-1.66	0.097	-3.874636 .5936071
_cons	.6179752	.3185429	1.94	0.052	-.6755146 1.619465

Arellano-Bond test for AR(1) in first differences: z = -0.43 Pr > z = 0.664

Arellano-Bond test for AR(2) in first differences: z = 0.06 Pr > z = 0.951

Sargan test of overid. restrictions: chi2(2) = 0.89 Prob> chi2 = 0.642

Hansen test of overid. restrictions: chi2(2) = 1.12 Prob> chi2 = 0.571

Source: Research data (2021)

Table 4. 22: Dynamic panel-data estimation, two-step system GMM: LnEVA with moderator variables

Dynamic panel-data estimation, two-step system GMM						
Group variable: Firm_ID			Number of obs	=		77
Time variable : Year			Number of groups	=		9
Number of instruments = 11			Obs per group: min	=		6
Wald chi2(8) = 1135.32			avg	=		8.56
Prob> chi2 = 0.000			max	=		9
LnEVA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
LnEVA						
L1.	.2377314	.0729237	3.26	0.001	.7475293	4.127934
STDR	-.2165173	.0933264	-2.32	0.020	-.6335203	2.418691
LTDR	.4373082	.1026545	4.26	0.000	.3262925	6.511781
EAR	.2621294	.1472640	1.78	0.075	1.890433	9.647844
RR	.3068517	.0927044	3.31	0.001	-2.553184	.6804151
ATNG	.0862353	.0284605	3.03	0.003	1.130962	6.420493
EGR	.2052327	.0430257	4.77	0.000	.3929039	2.38825
EVOL	-.1827439	.0048862	-3.74	0.000	-1.129942	4.65339
cons	.6583926	.3275585	2.01	0.044	.3931527	3.653804
Arellano-Bond test for AR(1) in first differences: z = -1.53 Pr > z = 0.106						
Arellano-Bond test for AR(2) in first differences: z = -0.43 Pr > z = 0.581						
Sargan test of overid. restrictions: chi2(2) = 2.13 Prob> chi2 = 0.394						
Hansen test of overid. restrictions: chi2(2) = 0.46 Prob> chi2 = 0.796						

Source: Research data (2021)

The moderated models were estimated as follows;

$$Tobin\ Q = 0.6180 + 0.2173TobinQ_{it-1} - 0.1974STDR + 0.2648LTDR + 0.1525EAR + 0.0592RR + 0.0734ATNG + 0.1582EGR - 0.0605$$

$$LnEVA = 0.6583 + 0.2377LnEVA_{it-1} - 0.2165STDR + 0.4373LTDR + 0.2621EAR + 0.3069RR + 0.0862ATNG + 0.2052EGR - 0.1827EVOL$$

4.14 Long run effect of the moderating variables on performance of MAFs

Table 4.23 and 4.24 show the results of the long run coefficients of the moderating variables on Tobin Q and LnEVA respectively.

Table 4. 23: Long run Model: Tobin Q with moderating variables

TobinQ	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
EGR	.2021471	.0437548	4.62	0.000	1.602135	3.715872
EVOL	-.0773180	.0525973	-1.47	0.142	-.822649	1.542374

Source: Research data (2021)

Table 4. 24: Long run Model: LnEVA with moderating variables

LnEVA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
EGR	.2692394	.0658287	4.09	0.000	-.537174	2.131476
EVOL	-.2397369	.1192721	-2.01	0.009	-1.860992	1.168002

Source: Research data (2021)

For the long run model, the hypothesis of economic growth rate and earnings volatility was tested as follows;

Long run moderating effect of EGR on Tobin Q and EVA (0.2021471 and 0.2692394 respectively).

A percentage increase in growth rate is associated with 20.21 % and 26.92% improvement in Tobin Q and EVA in the long run on average, *ceteris paribus*. These coefficients are significant at the 5% level and the Z –statistic > 1.96 (critical value). EGR therefore has a positive and significant moderating effect on performance of MAFs both in the short run and in the long run. However, it has a larger positive effect in the long run than in the short run. The coefficients are significant hence the null hypothesis is rejected.

Long run effect of EVOL on Tobin Q and EVA (- 0.0773180 and -0.2397369 respectively).

A percentage increase in EVOL is associated with 7.73% and 23.94 % decrease in Tobin Q and EVA in the long run on average, *ceteris paribus*. The coefficient with Tobin Q is however not significant at the 5% level and the Z –statistic < 1.96 (critical value), hence the null hypothesis was not rejected in the long run. The coefficient with LnEVA is however significant and hence the null hypothesis is rejected for the long run coefficient

as was the case for the short run coefficients. The study therefore concluded that EVOL has a negative and significant effect on LnEVA of MAFs both in the short run and in the long run.

4.15 White test for heteroskedasticity

For the moderated model, the White test for heteroskedasticity are presented in table 4.25. The White's test and the Cameron & Trivedi heteroskedasticity test have the same p value. Using a significance p-value of 0.05, the regression model does not violate the homoscedasticity assumption and therefore, White's general test of homoscedasticity was not rejected and hence heteroskedasticity was not a problem in this study. The same applies to the skewness and kurtosis assumptions whose p values are also well above the 0.05 significance level.

Table 4. 25: White test for Heteroscedasticity

<hr/>					
. estat imtest, white					
<hr/>					
White's test for Ho: homoscedasticity					
against Ha: unrestricted heteroskedasticity					
	chi2(35)	=	29.26		
	Prob > chi2	=	0.7411		
<hr/>					
Cameron & Trivedi's decomposition of IM-test					
	Source		chi2	df	p
	Heteroskedasticity		29.26	35	0.7411
	Skewness		9.57	7	0.2141
	Kurtosis		1.61	1	0.2051
	Total		40.44	43	0.5830
<hr/>					

Source: Research data (2021)

4.16 Moderated Model summary

The model summary table 4.26 below indicates F- value of the model was 13.26 and the p – value showed a value of 0.0000 which is less than the 0.05 significance level. This indicates that the model is very good and can be relied upon for prediction. The Model summary indicates the value of R square when all explanatory variables are operating at the same time was 0.5737; (57.37%). This indicates that 57.37% variation in performance of listed MAFs can be explained by variations in debt, equity, retained earnings, asset tangibility, economic growth rate and earnings volatility while the remaining 42.63%

would be explained by other factors that affect performance. The adjusted R square value of 53.04% implies that for the manufacturing sector, the explanatory variables contribute to 53.04% variation in performance while the remaining 46.96% would be explained by other factors that affect performance of firms in the manufacturing sector. There is also an improvement of R –squared and adjusted R – squared after the inclusion of the moderating variables indicating an improvement of the model by inclusion of more variables.

Table 4. 26: Moderated Model Summary

```
. reg utsq STDR LTDR EAR RR ATNG EGR EVOL
```

Source	SS	df	MS	Number of obs	=	77
-----+-----				F(7, 69)	=	13.26
Model	1630.12592	7	232.875132	Prob > F	=	0.0000
Residual	1211.3488	69	17.5557797	R-squared	=	0.5737
-----+-----				Adj R-squared	=	0.5304
Total	2841.47472	76	37.3878253	Root MSE	=	4.19

Source: Research data (2021)

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of findings

This study carried out an analysis of financing structure and performance of listed manufacturing firms in Kenya. A sample of 9 MAFs was used and data for 10 years collected from published financial statements through 2010 to 2019. However, the panel data was unbalanced since some of the firms got delisted during the period. A two-step system GMM technique was used for model estimation and hypothesis testing. Four specific objectives were used whose major finding are summarized below.

Objective one: To establish the effect of debt financing on performance of listed manufacturing firms in Kenya.

To actualize this objective, Pearson correlation matrix was obtained to determine the association between debt financing parameters of Short-term debt ratio (STDR) and Long-term debt ratio (LTDR) and financial performance as was proxied by Tobin Q and LnEVA. STDR is negatively and significantly correlated to Tobin Q; ($r = -0.4790$). This shows a moderate, negative relationship implying that use of short-term debt curtails performance of manufacturing firms as measured by Tobin Q. STDR also has a moderate, negative and significant correlation with LnEVA ($r = -0.5032$, $p = 0.0000$). This is a trajectory that more short-term debt curtails the EVA of manufacturing firms through the associated costs of acquiring and servicing debt and thus eroding the returns to providers of other capital components. LTDR was however positively correlated with both measures of performance. It has a fairly moderate and positive correlation with Tobin Q ($r = 0.4388$). It is also strongly correlated with Ln EVA ($r = 0.6570$). This therefore implies that financing using long term debt accelerates performance of manufacturing firms. Additionally, two sub hypotheses were tested based on the GMM model as follows;

H_{01.1}: Short term debt financing has no significant influence on performance of listed manufacturing firms in Kenya.

The coefficient for STDR was negative ($\beta = -0.1955$) significant at the 5% significance level when Tobin Q was the dependent variable and also negative and significant ($\beta = -0.2496$) and significant at the 5% level of significance when the dependent variable is LnEVA. The null sub hypothesis was therefore rejected for both performance proxies.

H_{01.2}: Long term debt financing has no significant influence on performance of listed manufacturing firms in Kenya.

Unlike the STDR, the regression estimate for Long term debt ratio (LTDR) was positive and significant at the 5% significance level with coefficients of 0.2114218 and 0.471638 with Tobin Q and LnEVA as dependent variables respectively. The null sub – hypothesis was therefore rejected in favor of the alternate and conclude that LTDR has a positive and significant influence on Tobin Q and EVA as financial performance proxies.

Objective two: to determine the effect of equity financing on performance of listed manufacturing firms in Kenya.

Pearson correlation matrix was obtained to actualize this objective. It was found that equity financing as was proxied by equity to assets ratio (EAR) had a weak negative correlation with Tobin Q ($r = -0.2682$). The regression weight for EAR with Tobin Q was negative and significant ($\beta = -0.1674526$; $p = 0.002 < 0.005$). The null hypothesis was thus rejected. On the other hand, EAR was found to have a moderate positive correlation with Ln EVA ($r = 0.5218$). The regression coefficient was positive but not significant ($\beta = 0.2901601$; $p = 0.087 > 0.05$) hence, the null hypothesis was not rejected. This objective showed mixed results possibly due to the different performance proxies.

Objective three: to examine the effect of retained earnings on performance of listed manufacturing firms in Kenya.

This objective aimed at examining the association between retained earnings as was proxied by retention ratio (RR) and the performance of MAFs. RR was found to have a moderate positive correlation ($r = 0.3197$) with Tobin Q and a strong positive correlation ($r = 0.5997$) Ln EVA respectively. The variable had regression coefficients of 0.0719257 and 0.2175243 with Tobin Q and EVA respectively. The z – statistic was positively significant at 5% level with both performance proxies and hence the null hypothesis was

rejected. Therefore, a financing structure with a higher component of retained earnings should be encouraged as it creates wealth to the providers of capital.

Objective four: to establish the effect of asset tangibility on performance of listed manufacturing firms in Kenya.

Equally to actualize this objective, a Pearson correlation matrix was generated to determine the association between asset tangibility and performance of MAFs. Asset tangibility (ATNG) was also positively correlated with the performance measures as shown by a moderate, positive and significant correlation with Tobin Q ($r = 0.4331$) and a moderate, positive and significant correlation ($r = 0.3683$) with Ln EVA. MAFs should therefore consider improving their financing options by having more tangibles as they enable firms to securitize the assets by creating special purpose vehicles for raising more funding cheaply. For the hypothesis test results, the regression coefficient of ATNG equals 0.0572843 and 0.0427016 for Tobin Q and EVA respectively. The Z –statistic is positively significant hence the null hypothesis was rejected with both performance proxies. This positive effect implies that asset tangibility significantly improves a company's valuation as a financing target. The ATNG financing enable the MAFs to qualify for investment deductions against annual profits for taxation and therefore acts as a saving to the firm.

Objective five: to assess the moderating effects of economic growth rate and earnings volatility on the relationship between financing structure and financial performance of listed manufacturing firms in Kenya.

To actualize this objective, the moderated regression coefficients were estimated. The moderating variable EGR had a positive and significant effect on both Tobin Q and LnEVA having regression weights of .1582140 and .2052327 respectively. This shows that economic growth rate has a significant positive influence on performance of the manufacturing sector in Kenya. On the other hand, EVOL which was used to measure risk and cost of financial distress showed a negative but not significant effect on Tobin Q ($\beta = -0.0605143$; $p = 0.097 > 0.05$, $z = 1.66 < 1.96$) while having a negative and significant effect on LnEVA ($\beta = -0.1827439$; $p = 0.000 < 0.05$, $z = 3.74 > 1.96$). Therefore, firms

should look for ways to stabilise their earnings to promote investor confidence and avoid being exposed to risk which results in higher financing costs and devaluation by the market and investors.

5.2 Conclusion

The success of Kenya's manufacturing sector is essential to propel the country to realize one of the Big 4 agenda on industrialization. Renewed efforts to revive the sector through the Big 4 Agenda seeks to increase its contribution to GDP to 15% by 2022. This depends on the sector's ability to effectively determine the optimum and appropriate financing mix to generate viable returns to shareholders and stay afloat. The current study sought to study the financing structure for the sector as was guided by four objectives and concluded as follows:

Objective one: To establish the effect of debt financing on performance of listed manufacturing firms in Kenya.

Based on the findings on STDR and performance of MAFs, STDR has a statistically significant negative effect on performance of listed MAFs in Kenya. The study therefore concludes that an increase in use of short-term debt in the financing structure is detrimental to performance since most short-term debt is relatively expensive and risky due to short maturity and repayment period given by the lender. On the other hand, LTDR was found to have a significant positive effect on performance. The study thus concludes that an increase in long term debt financing is beneficial as it is relatively cheaper, allowing the firm to reorganize its operations. Long term debt also frees the firm from unnecessary pressure of making huge payments in the short term hence allowing the firm to reinvest for expansion thus contributing positively to performance.

Objective two: to determine the effect of equity financing on performance of listed manufacturing firms in Kenya.

The study found existence of a negative and significant relationship between EAR and Tobin Q. This could be attributed to the effect of dilution of EPS as more shareholders are brought on board. This dilution of EPS could lead to a negative signaling effect to investors hence depressing the market value of the share. This depressed market value of

equity could go lower than even the book value of equity hence a decrease in Tobin Q. On the other hand, the regression coefficient with LnEVA was positive but not significant. The increase in EVA by employing more equity could be due to the fact that equity financing does not subject a firm to additional financial burden other than dividend which is optional and companies have no obligation to redeem the shares issued. The study therefore concluded that equity financing destroys wealth and value of firms and in instances it creates any wealth, its effect is not significant.

Objective three: to examine the effect of retained earnings on performance of listed manufacturing firms in Kenya.

The results from the coefficients table indicated that the regression weight for retention ratio (RR) was positive and significant with both performance proxies. Retained earnings improves firm performance and hence firm value as they do not impose any cost to the firm. Firms which are experiencing a growth phase have opportunities to invest. They can do so cheaply by resorting to retained earnings to achieve shareholder wealth maximization and avoid dilution of earnings. This finding supports the pecking order theory which was first suggested by Donaldson in 1961 who proposed that managers prefer internal financing for growth. Further, this finding affirms Stewart Myers & Majluf (1984) that firms must pursue an order of hierarchical financing beginning with the use internal financing. The study therefore concluded that retained earnings financing creates significant wealth and value for firms.

Objective four: to establish the effect of asset tangibility on performance of listed manufacturing firms in Kenya.

The finding on the fourth hypothesis revealed that asset tangibility (ATNG) had a statistically significant and positive effect on performance of MAFs. The ATNG financing enable the MAFs to qualify for investment deductions against annual profits for taxation and therefore acts as a saving to the firm. ATNG enable firms create an asset

pool that can work as a special purpose vehicle for financing which can achieve a favorable credit enhancement. The special purpose vehicle can issue various notes which are backed by the asset pool for financing. The study therefore concluded that ATNG financing creates significant wealth and value for firms.

5.3 Contribution of the study

The study focused on a developing economy and hence contributed to the literature and practice in relation to developing countries on the relationship between financing structure and financial performance based on economic performance parameters. The study findings were consistent to the Pecking order theory of hierarchical financing, Myers & Majluf model, and trade – off theory of the cost of long term debt as an alternative financing option to internal sources.

5.4 Recommendations

Based on the study findings and conclusions, the study therefore makes the following recommendations

5.4.1 Recommendations for policy issues

- i. The government can reduce cost of borrowing through sound monetary and fiscal policies which allow firms access cheap credit so that they make more money than what they sacrifice in servicing debt. This will revive the country's manufacturing sector which is key to transforming this country into an industrialized nation for achievement of vision 2030.
- ii. Given that STDR had a negative effect on the performance of MAFs, the government needs to formulate a Public Private Partnership (PPP) framework that under extreme conditions, the government can bail out the MAFs with respect to short term debt, hence the need to review the existing Capital Markets Authority act to incorporate the initiative.
- iii. The government and policymakers need to establish robust resource centers that can avail training and financial resources to investors and players in the sector to create capacity for investment and expansion.
- iv. The national treasury through the budget needs to have a long-term focus and realign it with the country's long-term plan so that gradual financing to the sector

is availed as well as support to the sectors that are key to providing inputs for manufacturing and specifically the agro processing industries so that agriculture can also support manufacturing.

- v. The National Treasury needs to formulate an incentive driven policy targeting the manufacturing sector due to its critical role in Economic development as can be seen from the industrialized economies

5.4.2 Recommendation for the practice

- i. MAFs Finance Manager need to minimize use of short time financing sources since they lead to destruction of wealth. If they need to use them, they should negotiate for more favorable terms than those they give to their debtors. This will ensure the MAFs is not starved of financial resources for short term operation.
- ii. MAFs should therefore concentrate on recovering cash flow quickly to minimize need for short term financing.
- iii. MAFs need to consider use of more long-term financing sources as they improve performance due to the longer period available to reorganize and plan for the repayment. Long term debt loses value due to inflation in the long run and hence saving to the firms again due to the time value of money concept.
- iv. Given that equity financing reduced firm performance for Tobin Q significantly and improved performance for LnEVA but by an insignificant margin, the study recommends that MAFs should apply equity financing cautiously as it is detrimental to wealth creation and in instances where it creates wealth, it is not significant.
- v. Corporate finance managers need to minimize use of equity financing due to its negative effect on firm value.
- vi. The management of MAFs should consider applying retained earnings in financing since it does not cost anything as it does not require any payment of cash in the form of issue costs, interest costs among others.
- vii. Since the dividend policy is determined by directors, they can take advantage of this practice and take advantage of retained earnings financing without involving shareholders and any outsiders hence minimizing decision time and dilution of ownership and company control.

- viii. MAFs need to consider project financing to limit exposure to credit risk as the deal is secured by the project's future revenues from production. This will not have adverse effects on performance since the creditor cannot pursue the firm for payment but only the assets and cash flows of the project itself.
- ix. MAFs need to consider market timing and therefore raise finances through equity financing option when the securities/shares are overvalued.

5.5 Suggestions for Further study

For purpose of future studies, this study can be varied to consider a balanced panel analysis to consider equal weighting of the study units. Other panel data econometric techniques could be applied to confirm if the effect changes, a different sector as well as inclusion of other moderating variables.

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APPENDICES

APPENDIX I

Listed Manufacturing firms

1. B.O.C Kenya Ltd
2. British American Tobacco Ltd
3. Carbacid Investments Ltd
4. East African Breweries Ltd
5. Eveready East African Ltd
6. Kenya Orchards Ltd
7. Unga Group Ltd
8. Mumias Sugar Co. Ltd
9. Flame Tree Holdings Ltd

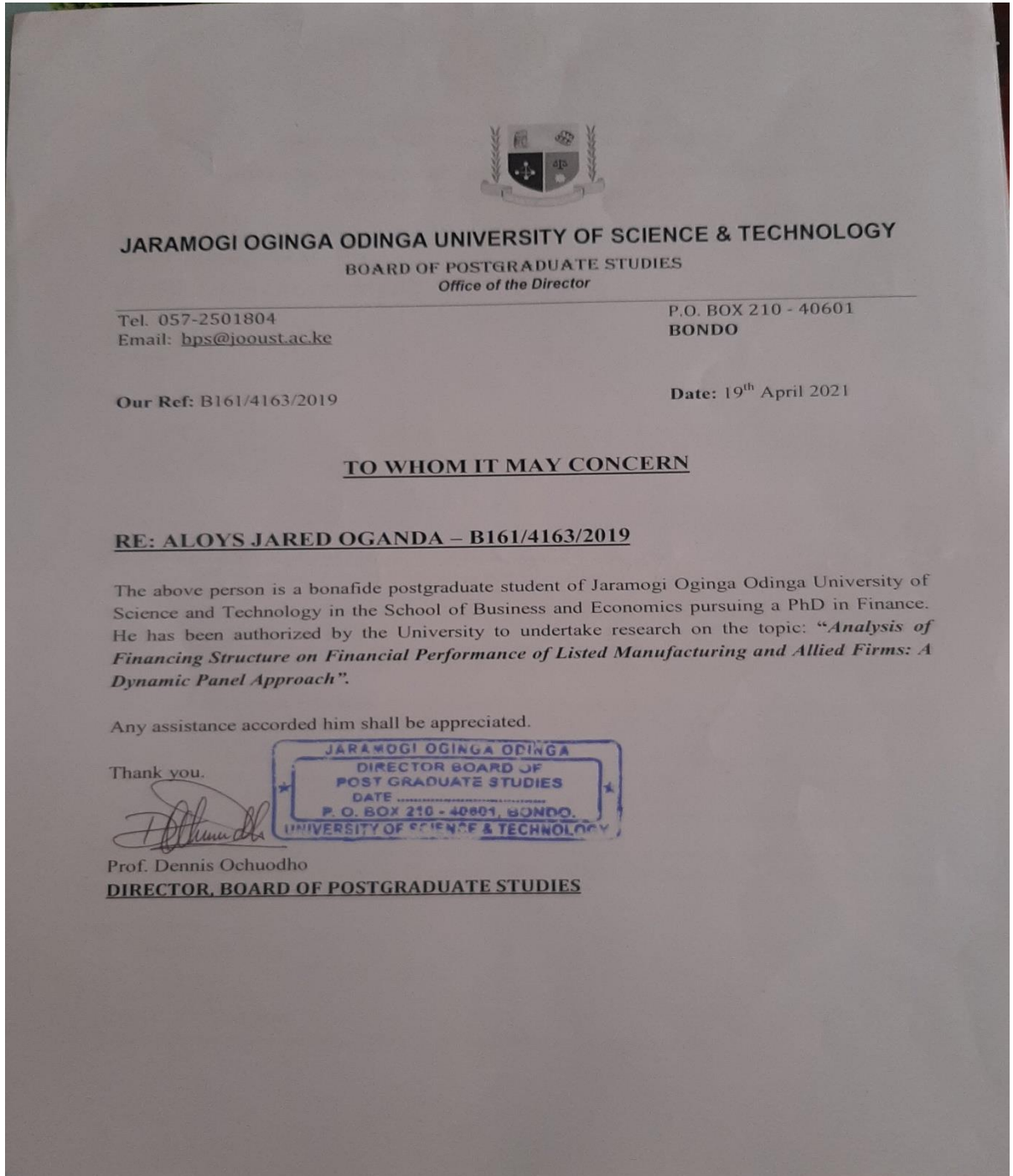
Appendix II
Document analysis guide

Name of firm

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Short term debt
Long term debt
Equity
Retained earnings
Tangible assets
Non-current assets
Total assets
NOPAT
Equity book value
Equity market value
Cost of capital
EBIT
GDP

APPENDIX III

POSTGRADUATE LETTER OF RESEARCH AUTHORISATION



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
BOARD OF POSTGRADUATE STUDIES
Office of the Director

Tel. 057-2501804
Email: bps@jooust.ac.ke

P.O. BOX 210 - 40601
BONDO

Our Ref: B161/4163/2019

Date: 19th April 2021

TO WHOM IT MAY CONCERN

RE: ALOYS JARED OGANDA – B161/4163/2019

The above person is a bonafide postgraduate student of Jaramogi Oginga Odinga University of Science and Technology in the School of Business and Economics pursuing a PhD in Finance. He has been authorized by the University to undertake research on the topic: "*Analysis of Financing Structure on Financial Performance of Listed Manufacturing and Allied Firms: A Dynamic Panel Approach*".

Any assistance accorded him shall be appreciated.

Thank you.

Prof. Dennis Ochuodho

DIRECTOR, BOARD OF POSTGRADUATE STUDIES



APPENDIX IV

JOOUST IERC RESEARCH PERMIT



**JARAMOGI OGINGA ODINGA
UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**DIVISION OF RESEARCH, INNOVATION AND OUTREACH
JOOUST-ETHICS REVIEW OFFICE**

Tel. 057-2501804

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Website: www.jooust.ac.ke

P.O. BOX 210 - 40601

BONDO

OUR REF: JOOUST/DVC-RIO/ERC/E3

29th June, 2021

Alloys Jared Oganda

B161/4163/2019

JOOUST

Dear Mr. Oganda,

RE: APPROVAL TO CONDUCT RESEARCH TITLED "ANALYSIS OF FINANCIAL STRUCTURE ON FINANCIAL PERFORMANCE OF LISTED MANUFACTURING AND ALLIED FIRMS: A DYNAMIC PANEL APPROACH"

This is to inform you that JOOUST ERC has reviewed and approved your above research proposal. Your application approval number is **ERC/22/6/21-4**. The approval period is from 29th June, 2021 – 28th June, 2022.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations and violations) are submitted for review and approval by JOOUST IERC.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to NACOSTI IERC within 72 hours of notification.
- iv. Any changes, anticipated or otherwise that may increase the risks of affected safety or welfare of study participants and others or affect the integrity of the research must be reported to NACOSTI IERC within 72 hours.
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to JOOUST IERC.

Prior to commencing your study, you will be expected to obtain a research permit from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,

Prof. Francis Anga'wa

Chairman, JOOUST ERC


Copy to: Deputy Vice-Chancellor, RIO


Director, BPS

Dean, SBE

APPENDIX V

NACOSTI RESEARCH PERMIT



REPUBLIC OF KENYA



**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **109933** Date of Issue: **11/May/2021**

RESEARCH LICENSE




This is to Certify that Mr. Jared Oganda Aloys of Jaramogi Oginga Odinga University of Science and Technology, has been licensed to conduct research in Nairobi on the topic: Analysis of Financing Structure on Financial Performance of Listed Manufacturing and Allied Firms: A Dynamic Panel Approach for the period ending : 11/May/2022.

License No: **NACOSTI/P/21/10384**

109933
Applicant Identification Number

Walter Wambui
Director General
**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

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APPENDIX VI

MAP OF KENYA

