FACTORS INFLUENCING CAPITAL STRUCTURE CHOICE OF COMMERCIAL BANKS IN KENYA

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Factors influencing capital structure choice of commercial banks in Kenya

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DECLARATION

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

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DEDICATION

I dedicate this project to my dear wife Naomi and my lovely children John, Stanley, Daniel, Anne and Joy. Your support and forbearance inspired me all the way.

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LIST OF ABBREVIATIONS / ACRONYMS

CRM -   Customer Relationship Management

EAC -   East African Community

EBIT -   Earnings before Interest and Tax

MFIs -   Micro-finance Institutions

MMI -   Modigliani and Miller Proposition I

MMII -   Modigliani and Miller Proposition II

NPV -   Net Present Value

OLS -   Ordinary Least Squares

ROA -   Return on Assets

WACC-   Weighted Average Cost of Capital

OPERATIONAL DEFINITION OF TERMS

Capital Structure: Refers to the long term financing decision of a firm as measured by debt-equity ratio (Mwangi, L. W., Makau, M. S., & Kosimbei, G, 2014).

Collateral value of assets: This is the total value of a firm's fixed assets including machinery and equipment that can be pledged for debt (Kamau, G. C., & Kariuki, S. N, 2014). In this study, the value is measured by the ratio of fixed assets to total assets.

Earnings volatility: Refers to the variability of earnings from the mean as measured by net profit before tax provision minus net profit before tax provision in the previous year divided by net profit before tax provision in the previous year (Baltacı, N., & Ayaydın, H, 2014).

Firm's size: Refers to the relative size of a firm's assets measured as a natural logarithm of total assets (Fan, J. P., Titman, S., & Twite, G, 2012).

Ownership: Refers to ownership concentration and ownership mix (Boubaker, S., Rouatbi, W., & Saffar, W, 2017). In this study ownership is the mix of local and foreign shareholding as measured by relative percentage.

Profitability: Technically refers to the excess of revenue over expenditure. In this study however, profitability is taken to be a measure of return on assets employed (Boubaker, S., Rouatbi, W., & Saffar, W, 2017).

ABSTRACT

Banks play a significant role in a country's economy by way of spurring growth. A sound financial system is full of largely banks with sufficient capital to withstand the most apparent adverse shocks. The purpose of the study was to examine the factors influencing capital structure choice of commercial banks in Kenya. The study explored the extent to which effective management of capital structure (debt-equity mix) has on commercial banks' capabilities to respond to financial crises. The specific objectives of the study included; to examine the effect of collateral value of bank assets on capital structure choice of commercial banks in Kenya; to find out the effect of a bank's size on capital structure choice of commercial banks in Kenya; to determine the effect of volatility of earnings on capital structure choice of commercial banks in Kenya; to establish the effect of profitability on capital structure choice of commercial banks in Kenya; and to examine the moderating effect of ownership on the relationship between collateral value of banks assets, bank's size, volatility of earnings, profitability and capital structure choice of commercial banks in Kenya. A descriptive and explanatory survey approach was adopted to obtain information concerning factors affecting capital structure choice of commercial banks in Kenya from heads of finance in 39 banks. The study also used secondary data over the period 2004-2013 from 39 commercial banks' annual financial reports filed with the Central Bank of Kenya. The data was analysed using Statistical Package for Social Sciences (SPSS) using multiple linear regression models to test the relationship between factors (collateral value of bank assets, bank size, volatility of bank earnings and profitability) and the capital structure choice (debt-equity ratio). The study found that volatility of earnings had the highest and significant effect on the capital structure choice and exhibited a negative and linear correlation with capital structure choice. Profitability followed in order of significance then collateral value of bank assets and bank size. These three factors had positive and linear correlation with capital structure choice. The study further found that there was a significant moderating effect of ownership on the capital structure choice predicting either higher or lower levels of debt-equity ratio depending on the bank manager's risk aversion, the costs of monitoring and bankruptcy, the threat of takeovers, and the growth opportunities of the bank. The study recommended that future studies could extend these findings by seeking to; establish the effects of interest rate capping on credit access among commercial banks in Kenya, determine the role of financial supermarket model on the bank profitability in Kenya and explore the impact of mergers and acquisitions on the performance of commercial banks in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

An appropriate capital structure is a critical decision for any business organization. The decision is important not only because of the need to maximize returns to various organizational constituencies, but also because of the impact such a decision have on an organization's ability to deal with its competitive environment. Capital structure refers to the composition of firm's financial resources. These funds are required for carrying on the business and are a major determinant on how the business operates hence their availability and quantity is critical to the firm (Boubaker, Rouatbi & Saffar, 2017). Commercial banks operate in a world of stiff competition and cost effective mix of capital is an important decision for them to survive this competition and sustain their operations into the future. In the wake of the recent global financial crisis commercial banks have been placed under the spotlight and their capital adequacy levels and capital structure have come into question. The choice of alternative funding sources and the resultant mix of debt to equity are of utmost importance to bank management. Bank management is constantly in search of an optimal capital structure that maximizes the value of the firm and decreases its risk profile (Fareed et al., 2014).

The theory of capital structure is an important reference theory in enterprise's financing policy. Whether or not an optimal capital structure exists is one of the most important and complex issues in corporate finance (Bokhari & Khan, 2013). How an organization is financed is of paramount importance to both the managers of firms and providers of funds. This is because; if a wrong mix of finance is employed; the performance and survival of the business enterprises may be seriously affected. This study is to find out an optimum level of capital through which a firm can increase its financial performance more efficiently and effectively.

Anafo, Amponteng and Yin (2015) and Yegon, Cheruiyot, Sang, and Cheruiyot (2014) observe that there are many theoretical studies and empirical research

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addressing capital structure choices but there is not yet a fully supported and commonly accepted theory; and the debate on the significance of firm specific variables on the capital structure choice is still unsettled. Lack of adequate capital has been identified as the major cause of business failure (Masor, 2017). There is no doubt that the banking sector plays a significant role in the economy of any country. In the effort to raise capital and the pursuance of optimal capital structure, banks need to adjust and mix both debt and equity strategically in order to finance their operations efficiently and effectively. This implies that banks should neither be highly geared nor lowly geared in order to maximize the value of the firm (Nkansah, 2018).

1.1.1. Global Perspective of Capital Structure

Flannery and Rangan (2008) document that in the 1990s large banks in the United States increased their capital well above the regulatory minimum. It is widely assumed in the banking literature that equity is a costly form of finance for banks and other financial institutions (Flannery and Rangan, 2008). This suggests that banks should minimize the amount of capital they use, and if there is a regulatory minimum, this should be binding. In practice, this is not the case (Nkansah, 2018).

In 2018, the global banks industry had a total value of assets of $ 90,880.4 billion which was a compound annual growth rate of 16.4% for a period of five years from 2014 to 2018, (Banks Industry Profile report, 2019). This forecast is expected to reduce with a compound annual growth rate of 9.7% for the five year period from 2018 to 2023 and it is expected to drive banking industry total asset value to $ 144, 153.40 billion by the end of 2023 (Banks Industry Profile report, 2019). The report further shows that Europe dominates the market with 54.1% share, followed by Asia Pacific with 19.5%, America with 18.6% and the rest of the world, where Africa falls is 7.8%. Therefore, bank industry cannot be ignored in any economy because of its significant role (Banks Industry Profile report, 2019).

Gharaibeh (2015) empirically supports the Pecking order hypothesis. Firm size was found to have a positive relationship to short term debt ratio to SMEs and debt ratios of quoted firms, but negative with respect to long-term debt ratio in the case of

quoted firms. This confirms the pecking order theory. Chowdhury and Chowdhury (2010) empirically support the argument of Modigliani and Miller (MM). They tested the influence of debt-equity structure on the value of shares given different sizes, industries and growth opportunities with the companies incorporated in the Dhaka stock exchange (DSE) and Chittagong Stock Exchange (CSE) in Bangladesh.

Goyal (2013), investigated the impact of capital structure on profitability of public sector banks in India listed on National Stock Exchange for the period 2008 to 2012. The results indicate that control variables measured by size and assets growth have significant positive relationship with the dependent variable measures of return on assets and earnings per share. Similarly, Mirza and Javed (2013) examined the performance of firms in terms of profitability and its association with multiple determinants for 60 Pakistani corporate firms listed in Karachi stock exchange for the period of 2007 to 2011, fixed effect model was used to explain the observed behaviour. The results consistently support the potential association between firm's financial performance and economic indicators, corporate governance, ownership structure, and capital structure. In Australia, Skopljak and Luo (2012) investigated the relationship between capital structure and firm performance of Australian Deposit-taking Institutions (ADIs). The findings show a significant and robust quadratic relationship between capital structure and firm performance of Australian ADIs.

1.1.2. Regional Perspective of Capital Structure

In Africa, formal banking sector started developing in the 20th century. Several capital structure studies have been undertaken in Africa in the last two decades reporting mixed results. Notable of these studies include; Masoud (2014) which provide evidence of the capital structure theories with reference to the Libyan business environment; Awunyo-Vitor and Badu (2012) that examines the determinants of capital structure of Ghanaian banks by specifically testing the significance of bank size, profitability, corporate tax, growth, asset structure, and risk in determining bank capital structure and Akinyomi and Olagunju (2013) who examine the determinants of capital structure of firms listed on the Nigerian Stock Exchange during the period 1999-2007.

El-Sayed Ebaid (2009) examined the impact of capital structure choice on firms in Egypt, using a multiple regression analysis in estimating the relationship between leverage level and firm's performance, with the study period being between 1997 and 2005. Three accounting based measures of financial performance (RoE, RoA and GPMP) were used. The result revealed that capital structure choice as a decision in general, has weak to no impact on firm's performance.

Gwatidzo and Ojah (2009) using a panel of listed firms in Ghana, Kenya, Nigeria, South Africa and Zimbabwe investigated corporate capital structure in Africa, with emphasis on the extent to which firm characteristics and cross-country institutional differences determine the way firms raise capital. Results supported the pecking-order postulate. Firms' profitability, size, asset tangibility and age, related significantly to leverage; thus suggesting that remedies for inadequate institutional infrastructures were important determinants of corporate capital structure in Africa.

Abor and Biekpe (2005) study the capital structure of listed firms in Ghana. Their study finds that more than 50 per cent of the assets of listed firms in Ghana are financed by debt and that there is a correlation between debt-equity ratio and firm size, growth, asset tangibility, risk, and corporate tax. Naidu (2011) studies the determinants of capital structure of banks in South Africa based on secondary financial data and attempts to identify best practices that contribute to the overall value and performance of commercial banks with expectations that the correct application of capital structure theory and compliance with regulations will decrease a bank's risk profile and in turn result in a more stable monetary system and economy. The results of the study are inconclusive, but lay the basis for potential future research and create greater understanding of the dynamics of capital structure and its implications to South African Banks. Banks' capital structure debate still remains unsettled in the African context.

Commercial banks in the East African Community (EAC) region are growing and significantly contributing to the economic development of the region and the member states. Cross-border expansion of banking services in the region started in the early 2000 with Kenyan banks setting up branches in other partner states. According to the

Central Bank of Kenya report of 2013, Kenya had 11 commercial banks with cross-border banking interests in the other EAC member states as at end of December 2013. This regional expansion has had implications on the commercial banks' capital structure decisions with a view to securing stability within the regional banking sector.

1.1.3. Commercial Banks in Kenya

In Kenya, significant reform initiatives have been undertaken hinging on three key pillars of the Kenyan financial sector as espoused in the Vision 2030 (the Government Economic Blue Print) comprising of efficiency, stability and access. By enhancing efficiency, commercial banks are expected to offer more affordable banking services, attract more people and contribute to financial market deepening. Banking sector efficiency is also important for promoting access to financial services as well as stability of the banking sector as integral component of improved productivity in the economy (Maredza & Ikhide, 2013). According to the Central Bank of Kenya Annual Report for 2013 there were 43 licensed commercial banks in Kenya. Three of these banks were publicly owned with majority shareholding being the government and state corporations. The rest were privately owned; 27 of them being local commercial banks while 13 were foreign-owned commercial banks.

Commercial banks in Kenya play a major role of contributing to economic growth of the country by mobilizing funds for investments. The banking sector in Kenya was liberalized in 1995 and exchange controls lifted. Commercial banks in Kenya have during the study period been going through transformation to cope with the constantly changing business environment, increasing domestic and global competition, economic downturn, rapidly changing market trends and volatile financial markets. Commercial banks in Kenya have also had to remain responsive to ongoing developments in both the domestic and international environment. According to the Central Bank of Kenya Annual Report for 2013 changes in the banks' operating environment are driven by first; the entrenchment of devolution in Kenya where the banking sector is expected to revamp its infrastructure to meet the needs of the market both nationally and within the counties. Secondly, the advance in

information and communication technology where continuing advances in and deployment of information and communication technology in the banking sector is impacting on the sector's operating efficiency and capacity. Thirdly, by the regional integration which is expected to impact the sector both strategically, legally and operationally as more institutions seek to expand their global footprint within the East African region and beyond.

This study was motivated by four key factors. First, commercial banks in Kenya play a significant role in economic development of the country. According to the Central Bank of Kenya Annual Report of 2013, commercial banks in Kenya had an asset base of over KShs. 1.3 trillion making them the largest sector in the Kenyan financial sector. Secondly, under the country's Vision 2030, commercial banks remain a critical element and the cornerstone of the targeted economic growth trajectory. With quality capital mix, commercial banks are likely to remain stable, survive into the future and promote access to financial services and boost productivity in the economy (Maredza & Ikhide, 2013). Thirdly, Kenyan banks are expanding beyond borders and acquiring regional presence thus requiring additional capital for this expansion. The decision on the capital mix is critical. Finally, there is a knowledge gap on the study of factors influencing capital structure choice for commercial banks in Kenya. The determinants of capital structure have been debated for many years and still represent one of the most unsolved issues in corporate finance literature.

Earlier studies have made tremendous contributions to the theory of capital structure, but they are limited to developed financial system and restricted to non-banks. Less developed countries such as Kenya have received little attention in the literature. Nkansah (2018) observe that capital structure of banks is still a relatively under-explored area in the banking literature and the special nature of the deposit contract, the degree of debt-equity ratio in banking and the regulatory constraints imposed on commercial banks have meant that banks (and financial institutions in general) have been excluded in previous empirical studies on standard capital structure choice.

This study examines the factors influencing capital structure choice of commercial banks in Kenya and extends empirical work on the capital structure theory. The factors that the theories of capital structure suggest may affect the firm's capital structure choice include; collateral value of assets, size of a firm, earnings volatility and profitability and may be moderated by firm ownership (Harris & Raviv, 1991).

1.2. Statement of the Problem

The last century has witnessed significant new studies on capital structure and its effect on the value of a firm. Key among these studies is the Modigliani and Miller (1958) study which finds that capital structure is irrelevant in determining the value of a firm. The global economy has witnessed investment movements across borders in the recent decades and this is consistent with the Kenyan economy which operates in the global arena and continues to grow as a result of its openness to the outside world. Commercial banks in Kenya have expanded their operations within the region requiring additional funds to finance these expansions and banks' management have had to make capital structure decisions.

The 2007-2009 financial crisis that started in the US sent shocks across the world severely damaging the economies of many countries. Whereas the cause of the crisis was attributed to the USA housing market (Marshall, 2009), the response by banks and their resilience depended on the adequacy and quality (debt-equity mix) of their capital. When examining the roots of the crisis, Greenlaw et al. (2008) find that banks' active management of their capital structures in relation to internal value at risk, rather than regulatory constraints, is a critical factor.

Financial crises are cyclical in nature and are bound to recur in coming years making it an imperative for banks to cushion themselves against failure by managing their capital adequacy and structures effectively. Octavia and Brown (2008) observe that capital structure of banks is a relatively under-explored area in the finance literature. Mishkin (2000) avers that the correct application of capital structure theory and compliance with regulations will clarify the relationship between capital structure and bank credit and decrease a bank's risk profile and in turn result in a more stable financial system and economy at large.

Over the years, studies have been carried out to find out the variation in debt-equity ratios across firms, for instance; Diamond and Rajan (2000) and Allen, Carletti and Marquez (2009). The studies suggest that firms select capital structures depending on factors that determine the various costs and benefits associated with debt and equity financing with a view to maximizing their values. The aim of this study was to examine factors influencing capital structure choice for commercial banks in Kenya as a cushion during financial crises and extend empirical work on the capital structure theory. The factors that the theories of capital structure suggest may affect the firm's capital structure choice include; collateral value of assets, size of a firm, earnings volatility and profitability and may be moderated by firm ownership (Harris & Ravis, 1991).

1.3. Objectives of the Study

1.3.1 General Objective

The general objective of this study was to examine the factors influencing capital structure choice of commercial banks in Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were;

i. To examine the effect of collateral value of bank assets on capital structure choice of commercial banks in Kenya.

ii. To find out the effect of a bank's size on capital structure choice of commercial banks in Kenya.

iii. To determine the effect of volatility of earnings on capital structure choice of commercial banks in Kenya.

iv. To establish the effect of profitability on capital structure choice of commercial banks in Kenya.

v. To examine the moderating effect of ownership on the relationship between collateral value of bank assets, bank size, volatility of earnings, profitability and capital structure choice of commercial banks in Kenya.

1.4. Research Hypotheses

To achieve the objectives of this study the following five hypotheses were tested.

$H_0 1$: There is no significant relationship between collateral value of bank assets and capital structure choice of commercial banks in Kenya.

$H_0 2$: There is no significant relationship between size of a bank and capital structure choice of commercial banks in Kenya.

$H_0 3$: There is no significant relationship between volatility of bank earnings and capital structure choice of commercial banks in Kenya.

$H_0 4$: There is no significant relationship between bank profitability and capital structure choice of commercial banks in Kenya.

$H_0 5$: There is no significant moderating effect of ownership on relationship between collateral value of bank assets, bank size, volatility of earnings, profitability and capital structure choice of commercial banks in Kenya.

1.5. Justification of the study

1.5.1. Commercial Banks

The findings of this study will help the Management of Kenya's listed Commercial Banks to make good decisions on capital structure as their effects on financial performance may bring devastating results; high increase in capital structure decreases financial performance. It also helps the management maximize the use of funds and to be able to adapt more easily to the changing conditions. Hence the research findings will provide and add new knowledge to corporate managers in making their own decision on selecting the capital structure to achieve the optimum level of listed commercial bank's financial performance as well as research other areas that are significant and positively affect performance.

1.5.2. Shareholder and Investors

The findings of this study will fulfill the demands of the investors and shareholders. Investors need to know the relationship between capital structure policy and performance of the banks for them to make a choice which bank to invest their funds in.

1.5.3. Researchers and Scholars

The study will add knowledge to scholars since the findings demonstrate factors influencing capital structure choice of commercial banks in Kenya. In addition, it will help scholars to relate the results of this study to those done by other scholars to check if the findings are consistent or not. They will then deduce the potential problems in financial performance which might be associated with wrongful decisions on capital structure. A copy of this paper will be made available to the University to serve as empirical evidence in future studies.

1.5.4. Policy Makers

The Government of Kenya will find this study to be of great interest in formulating policies that steer towards the capital structure that optimizes performance. It would also provide the necessary information for regulatory purpose for which they would be able to gauge bank's performance based on capital structure.

1.6. Scope of the study

The study focused to establish the factors influencing capital structure choice of commercial banks in Kenya. Data was drawn from a sample of the registered banks by the Central Bank of Kenya. The study also used annual reports that were available from their websites and in the Central bank of Kenya website.The study focused on commercial banks operating in Kenya over the ten-year period 2004-2013 with an emphasis on the factors influencing the capital structure choice. The choice of this period is of interest as a number of commercial banks IPOS and their ownership structures significantly changed as they brought on board different categories of shareholders and management. To this end, the study looked at factors influencing capital structure (collateral value of assets, profitability, earnings volatility, size and

ownership) as obtained from the annual financial returns made to the Central Bank of Kenya and theories of capital structure that could explain the capital structure of Kenyan banking industry. The study was conducted between March 2018 and March, 2019.

1.7. Limitations of the study

This study on the factors influencing capital structure choice of commercial banks in Kenya was not without limitations. First, primary data collected for the study specifically for the commercial banks that are not quoted in the Nairobi Securities Exchange may have disclosed some information that may be confidential to the banks' management and this limited the amount of data availed to the researcher. To overcome this, the researcher got an introductory letter from the University clarifying that the information collected was to be used specifically for academic purposes. Secondly, the available research time was limited. This was to limit the diversity of data that the researcher collected and the degree of analysis of the data that could have improved the conclusions reached in the study. To overcome this challenge, the researcher engaged the services of a research assistant to tabulate and clean the data over the ten years under study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the theoretical literature on capital structure and discusses the empirical studies on factors influencing choice of capital structure for commercial banks. Conceptual and theoretical frameworks were based on previous studies, conceptual analyses, and theories that exist in the literature. The literature review informed the framing of the research problem, supporting the problem, synthesizing the knowledge base, and creating a need for the study. Priority was given to the most recent literature work while building up on earlier compelling works.

2.2 Theoretical Literature

Capital structure theories do explain how the mix of debt and equity in the firm's capital structure influences its value. It is the specific mix of debt and equity a firm uses to finance its operations. Since the seminal paper by Modigliani and Miller (1958) and their proposition that the value of a firm is independent of its debt-equity mix, several theories have been advanced and have kept the capital structure debate alive. Many of these theories have been empirically tested and to date there is little consensus on what factors for instance, specifically influences the choice of capital structure in commercial banks. Recent studies by Distinguin, Roulet and Tarazi (2013) document how US banks' capital ratios varied in the last decade. Fan, Titman and Twite (2012) find that the variables of bank capital structure are similar to those of non-financial firms and Mehran and Thakor (2011) document a positive relation between bank value and capital structure in the cross section. This study reviewed four broad categories of capital structure theories. The categorization was informed by the motivating forces that drive financial management decisions and include; traditional optimal capital structure theories, pecking order theory, agency approach theories and the Market timing theories.

2.2.1 Traditional Optimal Capital Structure Theories

Atrill (2009) supports the traditionalist view that the cost of debt capital is cheaper than the cost of equity finance due to the tax benefits of debt. These benefits, which make the real cost of debt lower than equity, result in a firm reducing its overall cost of capital if it were to increase its levels of borrowing. Traditional optimal capital structure theories posit that the optimal level of debt is where the marginal benefit of a source of capital is equal to its marginal cost. Thus firms trade off the benefits and costs of debt and equity financing and find an "optimal" capital structure after accounting for market imperfections such as taxes, bankruptcy costs and agency costs. The focus of this theory is on debt and its proponents aver that the aim of a value maximizing manager should be to equate the marginal costs and marginal benefits of a debt and operate at the optimal level.

Ross and Jaffe (2002) suggest that firms should strive to achieve this optimum mix as it is at this level that the value of the firm is maximized. Two trade-off views abound; the tax benefits of debt versus bankruptcy/distress costs and trading off the agency costs of debt versus agency costs of equity. Modigliani and Miller (1963) argue that since interest payments on debt are deducted in arriving at the profit figure on which tax is charged, these payments actually reduce the corporate tax liability, the use of debt engenders tax shield benefit. They also argue that use of debt increases the magnitude and possibility of distress costs in the event of bankruptcy. The trade-off theory proposes that the optimal debt ratio is set by balancing the trade-off between the benefit and cost of debt. According to Myers (1984), the optimal capital structure is achieved when the marginal present value of the tax shield on additional debt is equal to the marginal present value of the financial distress cost on additional debt.

The tax benefits of debt versus distress costs view holds that optimal capital structure involves balancing the corporate tax advantages of debt financing against the costs of financial distress that arise from bankruptcy risks (Kraus & Litzenberger,1973) and agency costs (Jensen & Meckling, 1976). The empirical support for this theory, however, is far from conclusive. For instance, while Bradley, Gregg and Kim (1984) find no clear evidence, Trezevant (1992) finds support for this theory.

The trade-off between agency costs of debt versus agency costs of equity view holds that the cost of debt capital is cheaper than the cost of equity finance due to the tax benefits of debt (Atrill, 2009). These benefits, which make the real cost of debt lower than equity, result in a firm reducing its overall cost of capital if it were to increase its levels of borrowing. If the situation were to hold under all circumstances then it would be best for a firm to increase its debt capital to very high levels. The study finds that as the level of borrowing increases so does the risk of financial distress of the firm. Ordinary shareholders become aware of this increase in risk and will require a greater return to compensate them for it. Thus the cost of equity would start to increase. Similarly, debt providers would also notice the increased financial risk of the firm and require a greater return for additional levels of debt provided to compensate them for the risk.

The cardinal objective of financial management is to maximize the value of a firm and for that reason debt and equity are used as substitutes. According to trade-off theory, higher profitability decreases the expected costs of distress and let firms increase their tax benefits by raising debt-equity ratio; therefore, firms should prefer debt financing because of the tax benefit. Ross and Jaffe (2002) suggest that firms can borrow up to the point where the tax benefit from an extra shilling in debt is exactly equal to the cost that comes from the increased probability of financial distress.

Ahmed, Ahmad and Ahmed (2010) investigate the impact of firm level characteristics on capital structure of life insurance companies of Pakistan over the period of seven years 2001 to 2007. In their study, debt-equity ratio is taken as dependent variable while profitability, size, risk and tangibility of assets are selected as independent variables. The results of their study indicate that firm size has a positive relationship with debt-equity ratio which is consistent with the trade-off theory.

The trade-off theory predicts that firms with more tangible assets and more taxable income to shield should have high debt ratios while risky firms, that is firms, with more intangible assets whose value will disappear in case of liquidation, ought to rely more on equity financing. In terms of profitability, trade-off theory predicts that

more profitable firms should mean more debt-servicing capacity and more taxable income to shield. According to the trade-off theory, a firm ought to decide on a target debt ratio which maximizes its value and then slowly move towards that target debt ratio. Gwatidzo (2008) finds that the optimal capital structure is found when the marginal benefit of each incremental unit of debt, that is, interest tax shields is equal to marginal cost of each incremental unit of debt (financial distress costs).

2.2.2 Modigliani and Miller Propositions

Modigliani and Miller (1958) argue that capital structure is irrelevant to the value of a firm under perfect capital market conditions with no corporate tax and no bankruptcy costs. This implies that the firm's debt-equity ratio does not influence its cost of capital. A firm's value is determined by its real assets, and it cannot be changed by pure capital structure management. The study concludes that there is no optimal capital structure.

Modern capital structure theory puts forth propositions by Modigliani and Miller (Modigliani & Miller, 1958), (Modigliani & Miller, 1963) and (Miller, 1988) who, using economic theory establish the well-known Modigliani and Miller propositions I and II (hereafter referred to as MM I and MM II, respectively). In developing their propositions the following assumptions were made: First, that Capital markets are perfect, and no one person has the power to influence the price of goods. All assets are priced efficiently without the opportunity for arbitrage. Secondly, there are no agency costs, that is, the incentives of managers, shareholders and creditors are appropriately aligned (Weston, 1989). Thirdly, there are no taxes and there is no distinction between personal and corporate taxes.

The effect of any taxation is minimal and does not influence the model put forward. Fourth, there are no transaction and bankruptcy costs: These are the legal and underwriting costs associated with equity issues. For debt issues, this can be the covenants imposed by creditors as well as the potential legal and administrative expenses that may be incurred during bankruptcy proceedings when financial risk is too high (Asaf, 2004). Sixth, ordinary investors can borrow at the same rate as firms, that is, there is no single market participant who is of such a size as to be able to

influence the cost and availability of debt finance. Personal gearing is said to be a substitute for corporate gearing (Vigario, 2002). Lastly, there is information symmetry between market participants in that all ordinary investors have the same information as a firm's management regarding the firm's future investment opportunities. Investors are said to act rationally and have the same expectations regarding future events and indifferent to risk (Van Der Wijst, 1989).

Miller (1988) revised MM to take into account the effects of personal taxes as well as corporate taxes. Miller (1988) finds that due to returns on stocks being taxed at relatively lower rates to returns on bonds/debt, an investor would be willing to accept a lower pre-return from stocks relative to the pre-tax return on bonds/debt. The study points out two key findings. First, the deductibility of interest for tax purposes makes the use of debt financing favourable for a firm, and secondly, the lower tax rates on returns from equity for the investor lowers the cost of equity and makes equity financing more favourable for the firm. These two statements are directly opposed to each other and leave one with the question, which is a better method of financing to use, debt or equity? Miller went on to prove that although the presence of personal taxes lowers the cost of equity financing, it does not completely offset the savings from the lower cost of debt financing (Brigham & Ehrhardt, 2005).

There is however a fundamental difference between debt financing and equity financing in the real world with corporate taxes. Dividends paid to shareholders come from the after tax profit. By contrast, interest paid to bondholders comes out of the before-tax profits. Modigliani and Miller (1963) suggest that in the presence of corporate taxes, a value-maximizing firm can obtain an optimal capital structure. In other words, if the market is not perfect, as a result of, say, the existence of taxes, or of underdeveloped financial markets, or of inefficient case, firms ought to consider the costs entailed by these imperfections. A proper decision on capital structure can be helpful to minimize these costs.

2.2.3 Pecking Order Theory

Myers (1984) argues that a firm will generally choose to finance an investment with internal funds such as retained earnings first, followed by new debt and finally with new equity. According to the pecking order theory, a firm may not have a target capital structure and its capital structure is as a result of a series of short-term financing choices viewed over the long-term. The short-term financing choices involve deciding which item on the pecking order is more desirable at a particular point in time. According to Ross, Westerfield, Jaffe and Jordan (2008) highly profitable firms make less use of debt as they are most likely to have large retained earnings and their need for external financing is limited or minimal. As the pecking order theory is based on the costs of obtaining financing, it stands to reason that the marginal costs of financing new projects does not become an issue if the financial capacity were available in advance to fund future projects. Firms will be able to make use of funds immediately available to pursue opportunities when they arise rather than waste time and cost in approaching the capital markets.

Under the information asymmetry theories, firm managers (insiders) are assumed to possess private information on the characteristics of the firm's streams of returns or the available investment opportunities. This information is arguably not available to investors and outsiders, but they try to infer by rational expectations. Myers (2001) argues that capital structure is designed to mitigate inefficiencies in the firm's investment decisions that are caused by information asymmetry and choice of capital structure signals to outsiders the information of the insiders. There are two views under this theory; first, capital structure is designed to mitigate inefficiencies in the firm's investment decisions that are carried out by information asymmetry and secondly, the choice of capital structure signals to outsiders the information of the insiders.

If equity is to be issued to finance new investments, this underpricing may be so severe that the Net Present Value (NPV) of the new project may be too low resulting in a net loss to the existing shareholders. According to Gwatidzo (2008) such projects may be rejected even if their NPVs are positive. On the other hand, passing up positive NPV projects is contrary to the wealth maximization objective of a firm.

Myers and Majluf (1984) suggest that this under-investment problem can be avoided if the firm finances new investments using a security that is safe from market undervaluation.

Pecking order theory suggests that firms do not have debt-equity ratio targets. They use debt only when retained earnings are insufficient and raise external equity capital only as a last resort. A more recent model of capital structure choice by Heaton (2002) includes 'windows of opportunity' and 'managerial optimism'. Baker and Wurgler (2002) suggest that managers could minimize the cost of capital by timing the market (issuing equity when share prices increase) implying that market conditions influence the pecking order. However, Hovakimian (2006) shows that the timing of equity issuance does not have any significant long lasting impact on capital structure.

Internally generated funds involve no undervaluation and would be preferred. If external finance is necessary, debt will be preferred to equity. Myers (1984) refers to this as the pecking order theory of financing; that is, capital structure will be driven by the firm's desire to finance new investments. Thus a firm will generally choose to finance an investment with internal funds such as retained earnings first, followed by new debt and finally with new equity. According to pecking order theory if internally generated cash flow is less than investment outlays, the firm first exhausts its cash balances or marketable securities portfolio. If external financing is required, firms will resort to the safest security first. They start with debt, then hybrid securities such as convertible bonds and finally equity as a last resort.

A single optimal or target debt-equity ratio does not exist in the pecking order theory since financing decision does not rely on the trade-off between marginal benefits and costs of debt. Baker and Wurgler (2002) argue that a firm may not have a target capital structure but rather a firm's capital structure is as a result of a series of short-term financing choices viewed over the long-term. The short-term financing involves deciding which item on the pecking order is more desirable at a particular point in time. As the pecking order theory is based on the costs of obtaining financing, it stands to reason that the marginal costs of financing of new projects does not become an issue if the financial capacity were available in advance to fund future projects.

However, management ought to exercise caution as excess availability of cash can lead to temptation for investing in projects that do not necessarily add value to the firm.

The pecking order theory assumes that management behaviour and actions are in the best interests of existing shareholders and any equity issues are due to current equity being overvalued and such value is to be transferred to existing shareholders upon the new issue (Myers, 2001). But Myers and Majluf (1984) are unable to prove whether or not managers care if a new stock issue is over or undervalued which brings the pecking order theory under scrutiny. Frank and Goyal (2004) carried out a later study which tested the pecking order theory by analyzing the financing patterns of American firms for the period 1971 to 1998. They find little evidence to support the pecking order theory and argue that equity issues are more closely correlated with financing deficits rather than debt.

Another theory born out of the concept of asymmetric information is signaling theory. This theory was made popular by Ross (1977). According to the signaling theory, when a firm is faced with an investment decision it will consider whether to proceed with equity or debt financing. New issues of equity can be considerably expensive with the issue costs involved and as shown under the pecking order theory, it is not favoured by management as it conveys to investors the notion that the shares are undervalued. If the firm proceeds to make use of debt financing, it is likely that ordinary investors will interpret this as a signal from management that they believe that the share is undervalued and the future earnings prospects are favourable. Markets may read this as a signal from management that the shares are undervalued and as a result the share price may go up.

Investors view the actions of management as a signal regarding the status of the firm and a transfer of information. Ross (1977) predicts that the value of a firm will increase with the addition of debt as the increased debt-equity ratio causes the market's perception of the firm's value to improve. The study also finds that the increasing of debt-equity ratio can be a costly signal for a firm. A prudent firm would adopt a higher debt-equity ratio than a poor firm as the manager of a prudent firm would be confident of the future prospects of the firm due to insider information of

the firm's future prospects and its ability to safely service higher debt payments. Tsai (2008) criticized Ross's model by arguing that the main reason for the undervaluation arises as the market's valuation of future prospects is lower than the true value rather than the signaling of the equity issue as argued by Ross. There is also an incentive for managers of large companies to convey signals such that the value of the firm would increase, but may not always convey the correct message to the market regarding the firm's prospects, but rather convey messages to the managers' benefit. This growth via the signal would, according to Gwatidzo (2008), enable them to cash up their shares at a higher value.

The signaling theory is however a poor predictor of actual behaviour. It suggests that firms with increased debt-equity ratio will realize an increase in value but studies have shown that too much debt can lead to erosion of value due to the high costs of financial distress. It also suggests that newer firms with high prospects should use more debt, but actually it is mature firms that make use of increased debt-equity ratio (Ghosh, 2017). Baltaci and Ayaydin (2014) have studied the variables of capital structure of banks in Turkey and provide evidence that pecking order theory is pertinent theory to Turkish banks. A study by Tornyeva (2013) on Ghanaian banks supports the pecking order argument that, firms that are profitable and therefore generate high earnings are expected to use less debt capital than those that do not generate high earnings.

2.2.4 Agency Theory

Agency theory predicts that capital structure choice is based on the existence of agency cost. Jensen (1986) argues that when managers have free cash flows, that is, internal sources of funds, they tend to squander it by consuming large amount of perquisites and by making sub-optimal investment decisions. Managers prefer to make use of less effort and have greater perquisite levels contrary to the shareholder's interest of firm value maximization. Debt forces managers to pay out cash reducing the free cash flow that they can use on perquisites. When debt is part of the capital structure, a commitment is entered into to pay out regular cash flows. This reduces the amount of cash available and thus makes managers more disciplined and force them to work efficiently for the interest of shareholders. Rocca, Rocca and Cariola (2011) propose that debt in the capital structure generate information

valuable in moderating agency behaviour. Hunsaker (1999) argues that an increase in debt also increases the risk of bankruptcy, therefore limits management's consumption of perquisites.

Agency theory focuses on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. According to Jensen and Meckling (1976), capital structures are determined by agency costs, which include the costs for both debt and equity issue. The costs related to equity issue may include; the monitoring expenses of the principal (the equity holders), the bonding expenses of the agent (the manager) reduced welfare for principal due to the divergence of agent's decisions from those which maximize the welfare of the principal. Besides, debt issue increases the owner-manager's incentive to invest in high-risk projects that yield high returns to the owner-manager but increase the likelihood of failure that the debt holders have to share if it is realized. If debt holders anticipate this, higher premium will be required which in turn increase the costs of debt.

Buferna, Bangassa and Hodgkinson (2005) provide evidence that agency theory is pertinent in capital structure choices to a developing country. The agency costs of debt include the opportunity costs caused by the impact of debt on the investment decisions of the firm; the monitoring and bond expenditures by both the bondholders and the owner-manager; and the costs associated with bankruptcy and reorganization. Since both equity and debt incur agency costs, the optimal debt-equity ratio would entail a trade-off between these two types of costs. Jensen and Meckling (1976) introduced two types of conflicts that are a major source of agency costs. They include agency costs that arise due to the conflicts of interest between managers and shareholders and agency costs that arise as a result of the conflicts of interest between shareholders and debt holders.

Buferna et al. (2005) provide further evidence of the capital structure theories pertaining to a developing country and examine the impact of lack of a secondary capital market by analyzing a capital structure question with reference to the Libyan

business environment. The study develops four explanatory variables that represent profitability, assets tangibility, volatility of earnings and firm size to test which capital structure theories best explain Libyan companies' capital structure. The results of their study show that agency theory is pertinent to the Libyan companies' capital structure choices whereas there is little evidence to support the asymmetric information theory. The lack of a secondary market may have had an impact on agency costs, as shareholders who are unable to offload their shares might exert pressure on management to act in their best interests.

According to Masulis (1988) conflict may arise because managers may prefer short-term projects, which produce results early and enhance their reputation quickly, rather than more profitable long-term projects. Jensen (1986) argues that, instead of working under shareholders' interests to maximize firm's value; managers prefer to increase firm's size to enjoy the benefit of control. In this case, managers have incentives to cause their firm to grow beyond the optimal size and accept negative Net Present Value (NPV) projects. He argues that the over-investment problem can be motivated by more free cash flow and less growth opportunities. Issuing debt helps to mitigate agency problems that arise from managerial behaviour under divergent interests between shareholders and managers. For instance, the over-investment problem can be mitigated by issuing debt since debt obligates a firm to pay out cash and thus prevents managers from investing in negative NPV projects.

Anbar and Alper (2011) study the variables of capital structure of banks in Turkey. They find tangibility of assets to have a negative and significant impact on the banks capital structure. These findings strongly support the agency theory. For self-interest reasons, it has been argued that managers are always reluctant to liquidate the firm or provide information that could lead to liquidation. This is the case even when liquidation is the best course of action from investors' point of view. According to Harris and Raviv (1991) managers want to stay in their positions, so they wish to minimize the likelihood of employment termination. As this increases with changes in corporate control, management may resist takeovers, irrespective of their effect on

shareholder value. On operating decisions, managers and shareholders may also have different preferences.

2.2.5 Market Timing Theories

Baker and Wurgler (2002) suggest that the current capital structure is the cumulative outcome of past attempts to time the equity market. Market timing implies that firms issue new shares when they perceive they are overvalued and that firms repurchase own shares when they consider these to be undervalued. According to Frank and Goyal (2009) managers tend to look at conditions in the debt equity markets and issue either debt or equity based on which one is more favourable at the time. At times when conditions are favourable, additional finance may be raised to exploit the favourable circumstances even if there were no immediate projects that warranted such finance. They suggest that equity market timing is successful on average and firms tend to issue new shares when investors are too enthusiastic about future earnings.

Fluctuations in market value have long-term impacts on capital structure. Managerial entrenchment theory of capital structure by Zwiebel (1996) is partially consistent with market timing theory, but practice shows that managers are exploiting new investors instead of existing ones. Under this theory capital structure is the cumulative outcome of attempts to time the equity market. The market timing theory is one of the more recent capital structure theories and states that a firm's current capital structure is basically the result of all historical attempts to time the equity market. Frank and Goyal (2009) suggest that the timing of equity markets usually is successful when one analyses the long-term performance of share prices and share issues. It is more likely for firms to issue equity where there is confidence in the market with regard to its future prospects as this confidence is more likely to fetch a higher asking price on equities issued. Management would therefore tend to only issue shares when the prices of their shares are high, issue cost is low and the firm's cost of equity is relatively lower than debt. Conversely, when the value of a firm's equity is low, management may seek to raise finance with the issuance of debt and may seek to repurchase their equity.

2.3 Conceptual Framework

According to Quinlan, Babin, Carr and Griffin (2019), conceptual framework is a structure of what has been learned to best explain the natural progression of a phenomenon that is being studied. Given the regulatory requirement for banks capital, standard banking firms are involved in both voluntary and involuntary capital structure decisions. Voluntary capital structure decisions are taken in the very same setting as non-financial firms and arguably under the same variables that are hypothesized in the capital structure theory for those firms. According to Goyal (2013) and subsequent studies carried out on firms' capital structure the consensus is that debt-equity ratio increases with fixed assets tangibility and firm size and decreases with volatility of earnings and profitability. The conceptual model below is formulated to depict the relationship between variables (independent variables) that influence banks' capital structure (dependent variable) choice and the moderating effect of ownership on this relationship.

Collateral value of Assets
- Total fixed assets
- Equity on financing

Bank size
- Number of customers

Earnings Volatility
- Change in operating income
- Retained Earnings

Profitability
- Return on Assets
- Interest bearing assets

Capital Structure Choice
- Long-term debt
- Equity

Ownership Structure
- Local
- Foreign

Independent Variables   **Moderating Variable**   **Dependent Variable**

Figure 2.1: Conceptual Framework

2.3.1 Collateral Value of Assets

Acedo-Ramírez and Ruiz-Cabestre (2014) find that firms which possess assets that can be used as collateral have the opportunity to issue cheaper and secure debts and should consequently have more debts in their capital structure. Empirical studies by Charalambakis and Psychoyios (2012) also suggest that tangibility of assets affect the collateral value of assets which in turn influence a firm's debt-equity ratio. A firm's tangible assets include machines and inventories, assets that could potentially be sold much more easily than a firm's intangible assets: its trademarks, its reputation for quality, brand recognition, or the accumulated knowledge of its workforce. Firms having larger fraction of fixed assets tend to have higher debt financing as they can use their fixed assets as collateral for the underlying risk associated with borrowing. The reason for firms with more fixed assets being financed through debt is that they can borrow at a relatively lower rate of interest. Thus a positive relationship is expected between collateral value of assets and debt-equity ratio.

Ramli and Haron (2017) find that stockholders of a highly levered firm are likely to overinvest which gives rise to the classical shareholder-bondholder conflict. However, if debt can be secured against assets, creditors have an improved guarantee of repayment and the recovery rate is higher, that is, tangible assets retain more value in liquidation. The trade-off theory thus predicts a positive relationship between debt-equity ratio and the collateral value of assets. Ahmad and Azhar (2015) suggest that firms may find it advantageous to sell secured debt. Their model demonstrates that there may be costs associated with issuing securities about which the firm's managers have better information than outside shareholders. Issuing debt secured by property with known values avoids these costs. For this reason, firms with assets that can be used as collateral may be expected to issue more debt to take advantage of this opportunity.

Ahmad and Azhar (2015) find that the more tangible assets a firm have, the higher the long-term debt ratio but the smaller the total debt-equity ratio. The study suggests that the relationship between tangible fixed assets and debt financing is related to the

maturity structure of the debt. In such a situation, the level of tangible fixed assets may help firms to obtain more long-term debt. Studies by Shah and Jam-e-Kausar (2012) find collateral value of assets to be positively related to both short and long-term debt. Black (1976) avers that there is no easier way for a company to escape the burden of debt than to pay all its assets in form of a dividend and leave bondholders holding onto an empty shell. If the debt can be collateralized, the borrower is restricted to use the funds for a specified project and wealth expropriation is minimized.

Empirical evidence from studies by Ahmad and Azhar (2015) suggest a positive relationship between collateral value of assets and debt-equity ratio consistent with theoretical argument that collateral value of assets enables a firm to borrow more. Akinyomi and Olagunju (2013) predict a positive relationship between assets tangibility and debt levels. As the value of intangible assets disappears (almost entirely) in the cases of bankruptcies, the presence of tangible assets is expected to be important in external borrowing as it is easy to collateralize them. Campello and Giambona (2013) suggest that tangible assets often reduce the costs of financial distress because they tend to have higher liquidation value.

2.3.2 Size of a Firm

Doğan (2013) find that larger firms employ more debt because they have more strength to absorb the risk of bankruptcy. The bankruptcy costs for such a firm will be low in terms of proportion to their total worth, which is the prime reason of taking more debt by larger firms. Smaller firms take less debt because of their fear to become bankrupt if they are unable to repay their debt on time. Öztekin and Flannery (2012) and Huang and Ritter (2009) argue that there are economies of scale in bankruptcy costs: larger firms face lower unit costs of bankruptcy than smaller firms. Huang and Song (2005) also suggest that larger firms have more access to funds and less chances of default and hence enjoy more borrowings as compared to smaller firms.

According to Öztekin and Flannery (2012), a firm's size has been a critical point of capital structure decision as small firms have restricted access to capital markets and

when they do, they pay higher interest rate as compared to larger firms and their growth is ultimately affected. Studies by Warner (1977) and Ang, Chua and McConnell (1982) and Campello and Giambona (2013) find that direct bankruptcy costs constitute a larger proportion of a firm's value as that value decreases, hence small firms will be relatively in greater danger when in debt than large firms. Large firms have more diversified sources of cash; they are less likely to face a sudden cash shortfall and are thus less prone to bankruptcy. These arguments suggest that large firms should have a high debt-equity ratio. This finding is consistent with the view that larger firms are better diversified and less likely to breach their target debt-equity ratio. Firm size is an inverse proxy of the probability of bankruptcy and hence, larger firms have higher debt capacity and may borrow more to maximize their tax benefits.

Ahmad and Azhar (2015) extend their work and test the variables of capital structure in the United Kingdom non-financial firms by using four measures of financial debt-equity ratio. They use non-equity liabilities to total assets, total debt to total assets, and total debt to capital (where capital is defined as total debt plus common shares with preferred shares), and adjusted debt to adjusted capital. All the measures are regressed on book value, natural logarithm of sales (size), profitability, and tangibility of assets. They find that variables of capital structure significantly changed with respect to each measure of debt used and thus reported similar results. Ahmad and Azhar (2015) argue that size can be regarded as a proxy for information asymmetry between managers and outside investors. Large firms are subject to more news than small firms because the investment community would be more concerned with gathering and providing information about large firms. This makes large firms more closely observed by analysts and less subject to information asymmetry than small firms.

The cost of issuing debt and equity securities can also be said to be related to firm size. Smith (1977) finds that small firms pay much more than large firms to issue new equity and also somewhat more to issue long-term debt. This suggests that large firms may have higher debt-equity ratio than small firms and may prefer to borrow short term (through bank loans) rather than issue long-term debt because of the lower

fixed costs associated with this alternative. Size plays an important role in determining the capital structure of a firm. Researchers including Smith and Warner (1979), Zeitun and Tian (2014) and Ang et al. (1982) have taken the view that large firms are less susceptible to bankruptcy because they tend to be more diversified than smaller companies.

Typical measures of firm size are the logarithm of assets or the age of firms, where mature firms tend to be larger than immature firms (Zeitun & Tian, (2014), (Hovakimian *et al*., 2001). In most cross-sectional tests, size and debt-equity ratio are positively correlated. Evidence from dynamic trade-off studies also supports the view that size is positively related to debt-equity ratio. This result is consistent with the prediction of the trade-off theory, because larger or more mature firms are likely to have lower default risk, and are less opaque than smaller firms due to their established track record of success and the attention received from analysts and rating agencies, thus reducing informational asymmetries (Kumari, 2015). These arguments imply a potential for higher debt-equity ratio. Size of a firm in this study is measured as natural log of total assets and from the reviewed empirical evidence, the study hypothesizes that there is a positive relationship between firm size and debt-equity ratio.

2.3.3 Earnings Volatility

Earnings volatility arise either due to the inherent business risk in the operation of a firm or may be attributed to the inefficient managerial practices and denotes financial distress. Firms with high volatile earnings will have to pay high risk premiums to lenders. Ahmed Sheikh and Wang (2011) find that underinvestment problem increases with the volatility of the firm's cash flow. Earnings volatility is, thus, expected to be negatively correlated with debt-equity ratio. Both trade-off theory and the pecking order theory suggest a negative relationship between earnings volatility and debt-equity ratio. According to Acaravci (2015), firms with high earnings volatility carry a risk of the earnings level dropping below their debt servicing commitments. Such an eventuality may result in rearranging the funds at a high cost

or facing bankruptcy risk. It can therefore be argued that, firms with highly volatile earnings should have lower debt capital.

Vasiliou and Daskalakis (2009) find a negative relationship between risk and leverage. Risk is therefore expected to have negative impact on debt-equity ratio. The study suggests that a firm's optimal debt level is a decreasing function of the volatility of earnings. Firms experiencing high volatility in earnings would tend to have low debt-equity ratios. Firms with high earnings volatility face a risk of the earnings level dropping below their debt servicing commitments, thereby incurring a higher cost of financial distress, Acaravci (2015). Accordingly, these firms tend to reduce their debt-equity ratio level to avoid the risk of bankruptcy. Trade-off theory predicts a negative relationship between debt-equity ratio and earnings volatility of a firm. The pecking order theory supports the same prediction.

Acaravci (2015) present good evidence against the equity cushion view. They show that bank earnings volatility is not positively related to the excess of book capital over required capital (the cushion), inconsistent with the view that the cushion is chosen to protect the bank against the risk of poor outcomes that would breach the regulatory capital requirement. Firms with asset types (e.g., intangible assets or firm-specific assets) that are associated with high bankruptcy costs are all the more prone to be conservative in their debt-equity choices in response to the volatility of their earnings.

Byoun (2008) and Kayo and Kimura (2011) suggest existence of asymmetric information where corporate insiders may have private information regarding their own earnings volatility. In such a setting of asymmetric information about earnings volatility, there is a lemons problem in pricing debt claims and the firms are better off issuing equity securities. According to Kamau and Kariuki (2014), issuing levered equity (with call option features) can be justified as a defensive measure or as a signal of low volatility. If the market believes that firms with a high volatility of earnings are also those with a large menu of risky projects that they can adopt after the external financing is in place, it would be important to commit not to do so by issuing levered equity or convertible debt to outsiders.

2.3.4 Profitability

The existence of a relationship between firm profitability and capital structure can be explained in terms of the pecking order theory (Zeitun & Tian, 2014). The theory postulates that because of information asymmetry between insiders and outsiders, firms prefer to finance their capital projects using internal funds rather than external finance (Gill, Biger & Mathur, 2011). Availability of internal funds depends on profitability as well as liquidity (Mazur, 2007). According to Mazur (2007) profitable firms are more likely to generate internal funds and it is expected that firm debt-equity ratio would decrease due to profitability – affirming the pecking order hypothesis of a negative correlation between profitability and debt-equity ratio. Profitable firms with access to retained profits can use them to finance their investments as opposed to depending on outside sources (debt). Gwatidzo and Ojah (2009) observe that retentions are the principal source of internal finances. Kayo and Kimura agree that firms with high profit rates, all things being equal, would maintain relatively lower debt-equity ratios since they are able to generate such funds from internal sources.

Onaolapo and Kajola (2010) find profitability to be negatively related to a firm's debt-equity ratio. This supports Nduka and Ucheahara (2016) pecking order theory that profitable firms will tend to use less of external finances. Their study suggests strong negative relationship between debt financing and profitability. Nduka and Ucheahara (2016) argue that firms prefer raising capital, first from retained earnings, second from debt, and third from issuing new equity. The study suggests that this behaviour may be due to the costs of issuing new equity. These can be the costs that arise because of asymmetric information, or they can be mere transaction costs. In either case, the past profitability of a firm, and hence the amount of earnings available to be retained, would arguably be an important determinant of its current capital structure (Öztekin & Flannery, 2012). Profitability has a negative correlation with debt-equity ratio, consistent with the pecking order theory. Profitable firms accumulate more internal funds and hence use less debt finance. According to Yegon, Cheruiyot, Sang and Cheruiyot (2014), a profitable firm is most likely to

have large retained earnings and its need for external financing is minimal and hence highly profitable firms make less use of debt.

Yegon, Cheruiyot, Sang and Cheruiyot (2014) base the inverse relationship between debt-equity ratio and profitability on the theory of agency cost which compels managers to be disciplined when considering debt and emphasizes the importance of shareholders' wealth. Huang and Song (2005) employ regression model to document the variables of capital structure of Chinese listed companies. The data includes market and accounting figures of more than 1200 companies for the time period 1994-2003. They find that debt-equity ratio (long-term debt ratio, total debt ratio, and total liability ratio) decreases with profitability (Huang & Ritter, 2009). The pecking order and the free cash flow theories suggest that a firm's profitability affects its financing mix. The former states that firms prefer to finance new investments from retained earnings and raise debt capital only if internal resources are insufficient, while issuing equity is the least favoured option. As the ability to retain earnings depends on profitability, an inverse relationship between debt-equity ratio and profitability is expected. Ruan, Tian and Ma (2011) among others, empirically confirm this prediction. Jensen (1986) shows that agency costs increase with free cash flow. Cuong and Canh (2012) suggest that debt may reduce the agency cost of free cash flow by ensuring that managers are disciplined, make efficient investment decisions, and do not pursue individual objectives as this increases bankruptcy risk. Increases in the debt ratio also signal quality and lenders are prepared to lend.

2.3.5 Ownership Structure

The concept of ownership structure has been defined along two dimensions: ownership concentration and ownership mix (Ahmed Sheikh and Wang, 2011). The former refers to the share of the largest owner and is influenced by absolute risk and monitoring costs (Hussainey & Aljifri, 2012), while the latter is related to the identity of the major shareholder. The theoretical literature on ownership and capital structure predicts either higher or lower levels of debt-equity ratio depending on the manager's risk aversion, the costs of monitoring and bankruptcy, the threat of takeovers, and the growth opportunities of the firm.

A firm's owners are those persons who share two formal rights: the right to control the firm and the right to appropriate the firm's profits, or residual earnings which in theory, could be separated and held by different classes of persons (Ahmed Sheikh & Wang, 2011). While there is a sizeable literature on the effects of ownership on firm value (Kamau, & Kariuki, 2014), little is known about how ownership may have moderating effect on the relationship between collateral value of bank assets, bank's size, volatility of earnings and profitability on capital structure choice, especially for commercial banks operating in Kenya. This study sought to explore the influence ownership as a moderating factor may have on the capital structure of commercial banks operating in Kenya mainly viewed from the context of domestic and foreign ownership.

Foreign shareholders are endowed with good monitoring capabilities, but their financial focus and emphasis on liquidity results in them unwilling to commit to a long-term relationship with the firm and to engage in a process of restructuring in case of poor performance. Foreign shareholders prefer strategies of exit rather than voice to monitor management (Kamau & Kariuki, 2014). Consequently, foreign owners are postulated to have a moderate impact on firm's capital structure choice. Local owners possess characteristics that represent the worst of both worlds. According to Saad (2010), Claessens, Djankov and Lang (2000), Dharwadkar, George and Brandes (2000) and Shah and Jam-e-Kausar (2012) their financial focus leads to short-term behaviour and a preference for liquid stocks while their domestic affiliation often results in a complex web of business relationship with the firm and other domestic shareholders.

2.4 Empirical Review

Najjar and Petrov (2011) examine capital structure of insurance companies in Bahrain. The objective of the study is to investigate the effect of firm specific characteristics on capital structure. They use panel data derived from annual reports and financial statements of five insurance companies listed on the Bahrain Stock Exchange for the period of 2005-2009 and apply multiple linear regression analysis using SPSS to identify those effects. They find a strong relationship between firm characteristics, such as tangibility of assets, profitability, firm size and earnings

volatility. The results of their study reveal that tangibility and size show a positive significant relationship with the debt-equity ratio.

Basti and Bayyurt (2015) study the Factors Affecting Capital Structure Choice: New Evidence from Turkish Non-Financial Listed Companies. The study aim was to contribute to capital structure literature by utilizing firm level and macroeconomic data from a major developing country, Turkey. They investigated the relation between firm leverage and profitability, tangibility of assets, firm size, growth, non-debt tax shields, risk, expected inflation and GDP growth rates. They used annual data of exchange listed non-financial corporations in addition to expected inflation and GDP growth rates. The study applied panel regression analysis to unbalanced panel data set of 292 firms between 1988 and 2013.

The study results were summarized as follows: There was a negative and significant relationship between profitability and leverage. This result was in accordance with the pecking order theory. Size is affecting leverage positively but risk is affecting leverage negatively. There was a positive and significant relation between expected inflation and leverage. Firm growth and GDP growth have negative effects on leverage. All of these findings were in line with the trade-off theory. On the other hand, there was no significant relation between tangibility of assets and depreciation and leverage. Thus, based on these results, they concluded that trade off theory seemed to explain capital structure choices of Turkish publicly held non-financial companies better than pecking order theory.

Kiruri (2013) study focused to find out the determinants of capital structure of commercial banks in Kenya. The study found that overall leverage of banks is negatively related to operating assets. The study also found that long-term debt structure is positively and statistically related to operating assets. The result also shows that short-term debt of banks is negatively related to banks' profitability, risk and asset structure and positively related to bank size, growth and corporate tax. On the other hand, the long-term debt of the banks is positively related to banks' asset structure and profitability and inversely related to bank risk, growth, size and corporate tax.

Cekrezi (2015) study attempted to focus on the influence of firm's internal factors on capital structure decision for a sample of 69 non-listed firms, which operate in Albania, over the period 2008-2011. The study used short-term debt to total assets (SDTA) and long-term debt to total assets (LDTA) as dependent variables and eight independent variables: return on asset (ROA), return on equity (ROE), tangibility (TANG), liquidity (LIQ), size (SIZE), business risk (RISK), flexibility (FLEX) and non-debt tax shields (NDTSH). The investigation used cross-sectional time series data which was collected from the Balance Sheet Annual Reports, the official document delivered to the State Tax Office. This study found that ROA (net income to total assets), ROE (net income to equity), tangibility (the ratio of fixed assets to total assets) and liquidity (the ratio of current assets to current liabilities) have a significant impact on both SDTA and LDTA. While size, risk, flexibility and non-debt tax shields resulted statistically significant in determining only LDTA.

Gurcharan (2010) analyzes the variables of capital structure in four countries of the ASEAN members, namely Malaysia, Indonesia, Philippine and Thailand, for the period from 2003 to 2007 with a sample of 155 mainly listed companies from four selected ASEAN stock exchange index-links. Based on the empirical result, the study reports a positive significant relationship between debt-equity ratio and firm size. Abor and Biekpe (2005) study the capital structure of listed firms in Ghana. They find that more than 50 per cent of the assets of listed firms in Ghana are financed by debt and that there is a positive correlation between debt-equity ratio and firm size.

Khrawish and Khraiwesh (2010) examine the variables of capital structure evidence from Jordanian industrial companies over the period 2001- 2005. Using panel data, debt-equity ratio and four explanatory variables that represent size, tangibility, profitability, long-term debt and short-term debt are calculated. Based on their study, they find that there is a significant positive relationship between debt-equity ratio and size, tangibility, long-term debt and short-term debt and there is a significant negative relationship between debt-equity ratio and profitability of the firm.

Salawu and Obafemi (2007) sought to establish the determinants of the capital structure of financial firms in Nigeria: The Financial Managers' Perspectives. The study examined the considerable factors in deciding on the appropriate amount of

equity and debt in the Nigerian banking industry, and the factors influencing banks' capital structure. Data were gathered through questionnaires administered to the financial managers of 25 listed banks in Nigeria. Cross tabulations and Chi-square were used for data analysis. The result suggests that credit-rating, volatility of earnings and cash flow, bankruptcy or near-bankruptcy, financial distress, transaction costs, fees for issuing debt, and financial flexibility are the important factors in choosing appropriate amount of debt. The most important factor that affects banks' choice between short- and long-term debts is matching the maturity of debt with life of the asset. The study also reveals that ownership structure and management control, growth and opportunity, profitability, issuing cost, and tax economics associated with debt are the major factors influencing bank's capital structure. It is, therefore, recommended that banks should adopt a mixed source of financing and choose appropriate ownership structure and management policy.

Pahuja and Sahi (2012) study the factors determining the capital structure of Indian companies. The analysis was grounded on agency theory and pecking order theory. The study took dependent variable as debt equity ratio and independent variables viz. size, growth, profitability, liquidity and tangibility. The data for a sample of 30 companies constituting Bombay Stock Exchange's SENSEX (sensitivity index) was considered for a period comprising 2008-2010. The study identified determinants of capital structure with the help of correlation and regression analysis. Two major determinants of capital structure are found to be growth and liquidity according to the results of the study.

Tongkong (2012) investigated the significant factors influencing capital structure decision of the listed real estate companies and the speed of adjustment towards their target level. The study used homogeneous panel of 39 Thai companies in real estate industry listed in the Stock Exchange of Thailand (SET) during the period 2002 to 2009. The analysis employs multiple linear panel regression models in examining factors influencing capital structure decision, as well as, dynamic panel regression model using one-step and two-step Arellano and Bond GMM estimation methods in determining the speed of adjustment towards target capital structure. The findings indicated that firm had positive relationship with firm leverage, whereas profitability

was negatively associated. The results support pecking order theory as higher profitability firms tend to have less debt and firms with higher growth opportunities tend to have greater leverage. Additionally, the study also discovered that real estate companies partially adjust their capital structure towards the target level capital structure only at the rate of 63 percent.

Gitau (2014) sought to establish the effects of capital structure on financial performance of commercial banks in Kenya. The specific objectives of this study was to determine the financial performance of commercial banks in Kenya; to establish the determinants of capital structures for commercial banks in Kenya, and lastly to find out the effects of capital structure on the financial performance of commercial banks in Kenya. The financial performance was measured in terms of return on assets and return on equity. The period of study was 2004 to 2009. The population of study consisted of all the 43 commercial banks that were dully registered with Central Bank of Kenya by 2009. The results found out that the major factors affecting capital structure of banks was liquidity, size, growth and profitability. In addition the researcher rejected the null hypothesis after conducting the chi test and accepted the alternative hypothesis that there is a relationship between capital structure and financial performance of commercial banks in Kenya.

Bayero (2018) study examined the effect of capital structure on financial performance of deposit money banks in Nigeria. It was observed that capital structure has direct impact on financial performance of Deposit Money Banks (DMBs). It is one of the important financing decisions of banks that is closely related to its survival. Taken into consideration the advantages of using debts, such as monitoring the conducts of managers as well as tax shielding ability, it is imperative for bank managers to explore less costly debt financing opportunities to finance their operations. DMBs should ensure optimum mix of debt and equity in their capital structures to maximize financial performance.

Wilson (2002) find that private equity backed companies perform more strongly (higher return on assets, higher interest cover, higher gross margin) than a matched sample of private and listed companies both before and during the recent recession. They also find that bought-out companies have a higher failure rate than other

companies, but this does not apply for deals completed after 2003. Goyal (2013), investigated the impact of capital structure on profitability of public sector banks in India listed on National Stock Exchange for the period 2008 to 2012. A sample size of 19 banks was used in the study. Regression Analysis results revealed that positive relationship existed between short term debt and return on assets, return on equity and earnings per share, negative relationship between total debt to capital and profitability ratios of return on assets, return on equity and earnings per share. Similarly, the results indicate that control variables measured by size and assets growth have significant positive relationship with the dependent variable measures of return on assets and earnings per share.

Mirza and Javed (2013) examined the performance of firms in terms of profitability and its association with multiple determinants for 60 Pakistani corporate firms listed in Karachi stock exchange for the period of 2007 to 2011. Fixed effect model was used to explain the observed behaviour. The results consistently support the potential association between firm's financial performance and economic indicators, corporate governance, ownership structure, and capital structure.

In Australia, Skopljak and Luo (2012) investigated the relationship between capital structure and firm performance of Australian Deposit-taking Institutions (ADIs). The findings show a significant and robust quadratic relationship between capital structure and firm performance of Australian ADIs. At relatively low levels of leverage an increase in debt leads to increased profit efficiency hence superior bank performance, at relatively high levels of leverage increased debt leads to decreased profit efficiency as well as bank performance.

Khrawish and Khraiwesh (2010) examine the variables of capital structure evidence from Jordanian industrial companies over the period 2001- 2005. Using panel data, debt-equity ratio and five explanatory variables that represent size, asset tangibility, profitability, long-term debt and short-term debt they find that there is a significant positive relationship between debt-equity ratio and size and tangibility. Abor and Biekpe (2005) study the capital structure of listed firms in Ghana. They find a strong positive relationship between debt-equity ratio and asset tangibility.

Najjar and Petrov (2011) examine capital structure of insurance companies in Bahrain. The study investigates the effect of specific firm characteristics on capital structure. They use panel data derived from annual reports and financial statements of five insurance companies listed on the Bahrain Stock Exchange for the period of 2005-2009 and apply multiple linear regression analysis using SPSS to identify those effects. They find a strong relationship between firm specific variables, such as tangibility of assets, profitability, firm size and earnings volatility. The study finds that collateral value of assets and firm size shows positive significant relationship with the debt-equity ratio.

2.5 Critique of Existing Literature

Kayhan and Titman (2007) find a negative relationship between profitability and debt ratios, but observe that the effect is relatively weak. Frank and Goyal (2007) argue that profitability has lost some of its explanatory power for U.S. firms' capital structures over the last decades suggesting that profitability will increase debt-equity ratio. If higher profitability decreased the expected costs of financial distress (assuming some stationarity of profitability), one would expect to find profitability to increase debt-equity ratio under the trade-off theory.

The argument that firms with high volatile earnings should borrow less is not supported by all reported evidence. Ang and Peterson (1986) and Titman and Wessels (1988) find that the role of an effective tax rate on capital structure choice is not statistically significant in any country and argue that this observation may be caused by lack of variation in the rate of corporate tax across firms. Any observed variation is likely to be a manifestation of the changes in the corporate tax rate over the sample period. Consistent with the prediction of the trade-off theory and the findings of Leary and Roberts (2005), firms with higher non-debt tax shields borrow less.

Deesomsak, Paudyal and Pescetto (2004) investigate the determinants of capital structure of firms operating in the Asia Pacific region in four countries with different legal, financial and institutional environments including; Thailand, Malaysia, Singapore and Australian firms for the period 1993-2001. Overall they find debt-equity ratio to be positively related to firm size and tangibility of assets. The study

also finds that capital structure choice is not only a product of the firm's specific characteristics but is also affected by the specific corporate governance, legal structure and institutional environment of the countries in question. Gurcharan (2010) finds that profitability reveals statistical significance with inverse relationship with debt-equity ratio. The study also finds that firm size has a positive significant relationship with debt-equity ratio and that country-effect factors including; stock market capitalization and GDP growth rate show significant relationship with debt-equity ratio while bank size and inflation indicate insignificant impacts on debt-equity ratio.

Profitability is one of the most discussed variables of the financing decision of firms. Also the theories of capital structure give different interpretation on the effect of profitability on capital structure. The static trade-off theory arguments that the relation between the two variables should be positive, because higher expected profitability corresponds to higher benefits of debt and lower costs of financial distress. But at the other side the pecking order theory argues that the more profitable firms will become less levered over time (Frank and Goyal, 2009). The two opposite arguments on profitability create difficulties in explaining the capital structure of firms. The negative relations of profitability with capital structure were evidenced by Titman and Wessels (1988), Rajan and Zingales (1995), Huang and Song (2004) and Frank and Goyal (2009). On the other hand, positive relationship between profitability and capital structure were proved by Jensen (1986) and Hovakimian et al. (2001). The studies mentioned above are conducted in developed and developing countries and the opposite results are evidenced from both types of countries.

The effect of firm size remains unpredicted although past literature on this issue find a positive relation with capital structure choice (Titman & Wessels, 1988; Rajan & Zingales, 1995; Frank & Goyal, 2007; Daskalakis & Psillaki, 2009; Drobetz et al., 2007; Frank & Goyal, 2009). The positive relation is argued by the static trade-off theory (Frank & Goyal, 2009), which has an opposite interpretation from the pecking order theory. According to the later theory, there should be an inverse relation between leverage and firm size. Some studies have evidenced negative association

between firm size and capital structure (Rajan & Zingales, 1995; Frank & Goyal, 2007) and a few scholars argued that firm size is not a factor determining capital structure choice of firms (Titman & Wessels, 1988; Mehran, 2011). This study sought to establish the relationship between bank size and capital structure choice for commercial banks in Kenya.

Magero (2014) examined the impact of capital structure choice on performance of commercial banks in Kenya, covering five years from 2009 to 2013 by utilizing data of banks from their annual financial reports. Multiple regression models was applied to estimate the relationship between the capital structure and banking performance. Performance was measured by returns on assets (ROA) and return on equity (ROE) while determinants of capital structure which also served as independent variables included reserve fund, long-term debt, short-term debt and customer deposits. The study revealed that amongst the determinants of capital structure, capital reserve and long-term debts had a strong positive relationship with ROE and ROA. This study focused on the key factors influencing capital structure choice of commercial banks in Kenya.

Kiruri (2013) study focused to find out the determinants of capital structure of commercial banks in Kenya. The study finds that overall leverage of banks is negatively related to operating assets. The study also finds that long-term debt structure is positively and statistically related to operating assets. The result also shows that short-term debt of banks is negatively related to banks' profitability, risk and asset structure and positively related to bank size, growth and corporate tax. On the other hand, the long-term debt of the banks is positively related to bank asset structure and profitability and inversely related to bank risk, growth, size and corporate tax. Conceptually, the current study will focus on the relationship between the collateral value of bank assets, bank's size, volatility of earnings and profitability on the capital structure of commercial banks in Kenya.

Further, Kanyuru (2010) and Ondiek (2010) studied the relationship between capital structure and financial performance of firms listed at the Nairobi Securities Exchange (NSE). Kaumbuthu (2011) studied the relationship between capital structure and

financial performance for listed firms under industrial and allied sector. Munene (2006) studied the impact of profitability on capital structure of companies listed on Nairobi Securities Exchange (NSE) while Musili (2005) researched on the capital structure choice: A survey of industrial firms in Kenya. The banking industry being a key pillar in the financial industry and economy as a whole has not been studied in this context.

2.6 Summary of Literature Reviewed

Since the pioneering work of Modigliani and Miller (1958), the question of what determines a firm's choice of capital structure has been a major debate in the corporate finance literature. Since then, several studies have been conducted in developing and developed countries to examine effects of firm specific variables on capital structure choice. Over the years, a number of theories have also been postulated to explain the variation in debt-equity ratios across firms including; the traditional optimal capital structure (Myers, 1984), trade-off theory (Ross & Jaffe, 2002), pecking order theory (Myers & Majluf, 1984), agency theory (Jensen & Meckling, 1976) and the market timing theories (Baker & Wurgler, 2002).

These theories suggest that firms choose capital structures depending on firm-specific variables that determine the various costs and benefits associated with debt and equity financing with a view to maximizing their values. The review of relevant capital structure empirical studies reveal mixed results – some supporting the firm specific factors; collateral value of assets, size of a firm, volatility of earnings, profitability and firm ownership and others reporting inconsistent results and suggesting additional country-effect factors including; stock market capitalization, GDP growth rate, corporate governance, legal structure and institutional environment. On the balance, majority of the studies support the view that firm-specific variables affect the choice of capital structure and the same view was pursued in this study.

2.7 Research Gaps

According to numerous researches, capital structure decisions are determined by a complex set of factors (Chen, 2004; Mazur, 2007; Bhabra, Liu & Tirtiroglu, 2008;

Frank & Goyal, 2009; Getzmann, Lang & Spremann, 2010). Bhabra, Liu and Tirtiroglu (2008) indicate that significant factors influencing capital structure decision are proportion of tangible assets, size, profitability, and growth opportunities. Furthermore, Frank and Goyal (2009) suggested that the reliable factors for explaining market leverage are median industry leverage, market-to-book assets ratio, tangibility of assets, profits, log of assets and expected inflation. The significant determinants of optimal capital structure have been disagreed over decades of empirical studies.

The financial crisis started in the US and spread beyond the US borders and shocks were felt across the world. Whereas the cause of the crisis was attributed to the US housing market (Marshall, 2009), the response by banks and their resilience depended on the adequacy and quality (debt-equity mix) of their capital. When examining the roots of the crisis, Greenlaw, Hatzius, Kashyap and Shin (2008) find that banks' active management of their capital structures in relation to internal value at risk, rather than regulatory constraints, is a critical factor. Financial crises are bound to recur and since effective response to financial crisis is depended on banks' capital adequacy and quality (debt-equity mix) it is imperative that banks manage their capital structures effectively.

According to Octavia and Brown (2008) the capital structure of banks is still a relatively under-explored area in the banking literature. Mishkin (2000) observes that the correct application of capital structure theory and compliance with regulations will clarify the relationship between capital structure and bank credit and decrease a bank's risk profile and in turn result in a more stable financial system and economy at large. Currently, there is no clear understanding of factors influencing capital structure choice for commercial banks in Kenya. Given the unique financial features of banks and the environment in which they operate, there are strong grounds for a study on factors influencing capital structure choice of commercial banks in Kenya. The purpose of this study therefore was to examine the factors influencing capital structure choice of commercial banks in Kenya. Capital structure is a cushion during financial crisis and the study extends empirical work on the theory of capital structure.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter documents the design and methodology of the study. It details out the research design, target population, data collection procedures and data processing analysis approach. The chapter presents a blueprint for the study addressing four aspects; what is being researched on, which data are relevant, what data to collect, and how the data was analyzed.

3.2. Research Design

Research design refers to the overall conception of the study including description of all concepts, variables and categories, the relational propositions and methods of data collection and analysis. It is a process that the researcher will follow from inception to the completion of a study. Yin (2017) refers to research design as the structure that guides the execution of a research method, and the subsequent analysis of acquired data. The choice of the research design depends on how much is already known about the research problem.

A descriptive and explanatory survey approach was adopted to obtain information concerning factors affecting capital structure choice of commercial banks in Kenya. The purpose of descriptive and explanatory approach was to observe, describe and document aspects of situations as it naturally occurred and also to give an opportunity for gaining insights into the study population and the variables studied. It also allowed for causal explanations and univariate, bivariate, and multivariate analysis which allowed determination of relationships of variables by the use of factor analysis and multiple regressions. This also allowed for use of inferential statistics to establish significance in relationships between the dependent and independent variables (Kumar, 2019, Hair *et al.,* 2010) hence test the hypotheses. The approach is not concerned with characteristics of individuals but to provide information about population (Mackey & Gass, 2015, and Kothari, 2010).

This study also used a correlational research design which is basically concerned with assessing relationships among variables. Correlation is a measure that indicates how one variable, factor or attribute varies in relation to another. The variation could be negative or positive. The correlational research design allows for regression of data collected establishing a relationship between the dependent variable and the independent variables (Bryman, 2016). The study used descriptive and explanatory survey approach and obtained information concerning factors affecting capital structure choice of commercial banks in Kenya from 39 heads of finance in 39 commercial banks. The study also used secondary data. Existing financial data of commercial banks operating in Kenya was analysed. This data had not been produced for the sole purpose of this study and as such is categorized as secondary data. A quantitative research is a type of research that explains phenomenon by collecting numerical data that are analysed using mathematically based methods. The information utilized relating to the capital structure choice for commercial banks operating in Kenya were sourced from the annual accounts filed with the Central Bank of Kenya for the period 2004-2013.

The justifications for selecting the correlational design were that the study was, first; an empirical study as it involved the analysis of secondary data in order to test hypotheses or to validate models. Similar studies carried out by Joreskog (1977), Esparanca and Mohamed (2003), Khrawish and Khraiwesh (2010) and Amidu (2007) used the same design. Correlation research involves assessing relationships among variables. It is based on the premise that if a statistically significant relationship exists between two variables, then it is possible to predict one variable using the information available on another variable (Gay, 1981). Secondly, the study was basic, and the purpose of a basic research as expounded by Saunders, Lewis and Thornhill (2009), is to increase the knowledge of business process, management and research which enable the formulation of universal principles regarding the processes and their relationship to outcomes. It was an exploratory study in the Kenyan context.

The study considered two types of research philosophies; subjectivist and constructivism (phenomenology) and objectivist (positivism). According to Gass and Mackey (2013) positivism philosophy subscribes to the view that only factual knowledge gained through observation (the senses), including measurement, is trustworthy. In positivism studies the role of the researcher is limited to data collection and interpretation through objective approach and the research findings are usually observable and quantifiable. The emphasis is to test theories that have already been posited. The study depends on quantifiable observations that lead themselves to statistical analysis. As a philosophy, positivism is in accordance with the empiricist view that knowledge stems from human experience. It has an atomistic, ontological view of the world as comprising discrete, observable elements and events that interact in an observable, determined and regular manner (Collins, 2011).

This study adopted the positivism philosophy. Data was collected, statistically analysed and research findings derived from observable and quantifiable measures with a view to testing capital structure theories. As a philosophy, positivism is in accordance with the empiricist view that knowledge stems from human experience (Gass & Mackey, 2013) and this is the view that anchors this study. Duff (2012) argue that as a general rule, positivist studies usually adopt deductive approach and relates to the viewpoint that a researcher needs to concentrate on facts. Studies with positivist paradigm are based purely on facts and consider the world to be external and objective.

3.3 Target Population

According to Bryman (2016) target population is the entire set of unit for which the data are to be used to make references. Target population thus defines those units for which the finding of the study is meant to generalize. The unit of analysis of was commercial banks. The target population for this study comprised of 43 commercial banks (see appendix II) which is the total number of commercial banks that were operating in Kenya over the study period 2004-2013.

3.4 Sampling Frame, Sample Size and Sampling Technique

Sampling frame is a list of all the elements in the population from which the sample is to be drawn (Mugenda and Mugenda, 2012). It is the entire group of objects to which the researcher wishes to generalize the study findings. The list kept by the Central Bank of Kenya of all licensed commercial banks operating in Kenya during the period 2004-2013 constituted the sampling frame for this study.

Based on the purposeful sampling criterion, First Community Bank (licensed on 29 April 2008), Gulf African Bank (licensed on 1 November 2007) and UBA Bank (licensed on 24 September 2009) were excluded from the sample. Similarly Charterhouse Bank which had been under statutory management since 2005 was excluded from the sample. This left 39 banks for examination. Creswell and Clark (2017) state that obtaining an unbiased sample is the main criterion when evaluating the adequacy of a sample. The study also identified an unbiased sample as one in which every member of a population had an equal opportunity of being selected in the sample.

The process of sampling makes it possible to draw valid inferences or generalizations on the basis of careful observations of the variables under study. A non-probabilistic sampling and a purposeful sampling technique were used in this study to select only those commercial banks that were in operation in Kenya for a reasonable period of time before and throughout the period of the study 2004-2013. Purposeful sampling is where the researchers select the units to be sampled based on their knowledge of the subject matter and allows them to use cases that have the required information with respect to the objectives of the study (Creswell & Clark, 2017; Cooper & Schindler, 2006).

3.5 Data Collection Procedure

In this study, self-developed questionnaires were used to collect data from 39 heads of finance in commercial banks in Kenya. Questionnaires assist in the translation of the research objectives into research hypotheses which motivate the respondents to provide the information being sought (Kombo, 2006). Secondary data was also used in this study and was obtained from the annual financial statements of the 39

commercial banks operating in Kenya over the period 2004 to 2013. The dataset was based on financial data collected from the statements of financial position (balance sheets) and statements of comprehensive income (income statements) of commercial banks in Kenya. Variable averages were calculated over this ten year period. Averaging over the ten years reduced the measurement error due to random year-to-year fluctuations in the variables. The sources of data for the study were the published accounts that were also filed with the Central Bank of Kenya as the regulator. The information is comprehensive, reliable and accurate. Data extracted from the Central Bank of Kenya is valid and free from bias as it is compiled and submitted as part of a regulatory requirement and non-compliance and/or falsification in any manner would incur strict penalties and repercussions from the Bank.

Data for the dependent variables (collateral value of assets, bank size, earnings volatility and profitability) was calculated from the commercial banks' financial statements over the period 2004-2013 based on the Net Book Value (NBV) and averaged over the 10 years period. Independent variable (debt-equity ratio) was calculated from the financial statements and averaged over the 10 year period as shown in Table 3.1 below and summarized as shown in Appendix I for the purpose of modelling. The dependent and independent variables were measured using the following indicators as proxies:

Table 3.1: Key Variables and Measurements

Variable	Indicator	Measurement Level	Measurement
Independent	Collateral value of bank assets (CV)	Ratio	Total Gross Fixed Assets / Total Assets
	Size (BS)	Value	Natural logarithm of total assets
	Volatility of Earnings (VBE)	Value	Standard deviation of the percentage change in operating income
	Profitability (PROF)	Ratio	Operating income / Total Assets
Control	Ownership (OSC)	Value	Local or foreign (1 or 0)
Dependent	Capital Structure Choice (CAPSTR)	Ratio	Long-term Debt / Equity

The entire variables for this study were based on Net Book Value consistent with Myers (1984) argument that book values are proxies for the value of assets in place. Similar studies by Amidu (2007), Bevan and Danbolt (2004), Huang and Song (2005) and Frank and Goyal (2007) used long-term debt to calculate the debt-equity ratio (capital structure) and Net Book Value (NBV) to calculate the explanatory variables including; collateral value of assets, size of a firm, profitability and earnings volatility. Long-term debt is defined as the proportion of the company's total debt repayable beyond one year (Myers, 1984).

3.6 Pilot Study

A pilot study tries to maximize the reliability and validity of the data collected (Mugenda & Mugenda, 2012). The rule of thumb is that at least 10% of the sample should constitute a pilot test Creswell (2003). Using validated questionnaire, a pilot testing was carried out on the instrument using 4 respondents from four commercial banks (10.26%) of sample that were not going to be covered in the actual research. Creswell and Clark (2017) and Mugenda and Mugenda (2012) explain that pilot testing is done to gauge validity and reliability of research instrument. This was done

in order to see how the subject were to react to the questionnaire; whether the items were clear enough and easily understood; whether there was the need to include more items in certain areas; or whether there were some items to which they would not like to respond; as well as to determine the workability of the proposed method of data analysis for the study. From the pilot test, the researcher was able to understand whether there is ambiguity of some items and if so modify them to the level of the questionnaire.

An internal consistency technique for reliability and by determining the Cronbach's alpha value for each item in each variable was carried out. A sample of 4 respondents from the unit of analysis was randomly selected and the questionnaire administered to them. The random sample ensured that all the respondents get an equal chance of participating in the pilot study. The instrument was reviewed based on the pre-test experience. According to Sudman & Blair (1998) there is always a chance that some questions could cause problems and questionnaire piloting is needed to identify and eliminate such problems. The researcher made a deliberate effort to ensure that those who participated in the pilot study were excluded from the actual study so as to avoid bias.

3.7 Data Processing and Analysis

Data analysis is a process of inspecting, cleaning, transforming, and modelling data with the goal of highlighting useful information, suggesting conclusions, and supporting decision making (Pallant, 2013). All the data collected through the questionnaires and key informants were edited for completeness and consistency to validate the initial field findings. Data entry was done in a designed SPSS version 20 template through variable definition files generated from the questionnaires. Qualitative and quantitative data was analyzed using descriptive and inferential statistics. Qualitative data was analyzed by the use of content analysis. This study used both descriptive and inferential statistics to analyse the quantitative data. Descriptive statistics describe and summarize the data in a meaningful way using charts, tables and bars while inferential statistics draw conclusions on the analysed data thus helping in generalization. Therefore pie-charts, bars and histograms formed part of the analysis for presentation of results. Predictions based on the results of the

analysis were made and the results generalized on the population of study given that the test sample is part of the population.

3.7.1 Factor Analysis

According to Bryman (2016) and Creswell (2017), the common method variance (CMV) is the amount of spurious correlation between variables that is created by using the same method like a questionnaire to measure each variable. Common Method Variance may lead to erroneous conclusions about relationships between variables by inflating or deflating findings. In order to control for common method variance, factor analysis was carried out on all items in each variable and all items with factor loading of below 0.4 was dropped from the regression analysis calculations.

3.7.2 Normality Test

Normality test assisted in checking if the data is normally distributed. In order to do this, one can construct histograms and look at the distribution. The histogram included a line that depicts what shape would look like if the distribution is truly normal and can eyeball how much the actual distribution deviates from this line (Corbin, Strauss & Strauss, 2014). Another method to determine the normality graphically is to use the output of a normal Q-Q plot. If the data is normally distributed, the data points were close to the diagonal line. If the data points stray from the line in an obvious non-linear fashion, the data are not normally distributed. Should a researcher be uncertain of being able to correctly interpret the graph, numerical methods can be used instead because it can take a fair bit of experience to correctly judge the normality of data based on plots. There are two well-known tests for normality, that is. Kolmogorov-Smirnov Test and the second is the Shapiro-Wilk Test. For sample sizes which are small that is <50, the ShapiroWilk Test can handle it, although it can handle sample size of up to 2000. If the Sig.value of the Kolmogorov-Smirnov Test or Shapiro-Wilk Test is greater than 0.05, the data is normal while if the Sig.value is below 0.05, then the data significantly deviates from the normal distribution, (Pallant, 2013). The study will utilize the Kolmogorov-Smirnov Test to indicate whether the data is normally distributed.

3.7.3 Multicollinearity

Multicollinearity refers to predictors that are correlated with other predictors. Multicollinearity occurs when the model includes multiple factors that are correlated not just to the response variable but also to each other. According to Pallant (2013), muticollinearity increases the standard errors of the coefficients. Increased standard errors in turn mean that coefficients for some independent variables may be found not to be significantly different from 0. This means that by overinflating the standard errors, Multicollinearity makes some variables statistically insignificant when they should be significant. Without Multicollinearity, those coefficients might be significant. Pearson's correlation analysis will be used to test for the existence of Multicollinearity. A Pearson's Correlation Coefficient (PCC) of 0.7 is recommended indicator for Multicollinearity, which also indicates variable relatedness. Variance inflation factor (VIF) will also be used to confirm Multicollinearity. If the VIF for any variable is around 10 or greater than 10, there is collinearity associated with that variable and must be removed from the regression model, (Aandstad & Simon, 2013).

3.7.4 Autocorrelation

In order to detect the presence of autocorrelation between the variables in the study a Durbin-Watson Test will be conducted. Autocorrelation is the correlation between members of the series of observations ordered in time or space, Mayring (2004) and Kuckartz (2014). The Durbin-Watson statistic varies from 0 to 4 where a value near 2 indicates non-autocorrelation while a value closer to 0 shows autocorrelation. A value closer to 4 indicates negative autocorrelation. In this study the value is closer to 2 and we conclude that there is no autocorrelation.

3.7.5 Statistical Modelling

To draw conclusions on the objectives of the study and test hypotheses, statistical models will be fitted for the specification function showing the relationship between independent variables and dependent variable. Bivariate regression models will be fitted to determine the relationship between each independent variable and capital structure choice in commercial banks in Kenya. Bivariate models consider the relationship between two variables at a time without considering the combined joint

relationships. The study will use the following models to capital structure choice in commercial banks in Kenya.

$$SD = \beta_0 + \beta_1 X_1 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{Equation (1)}$$

$$SD = \beta_0 + \beta_2 X_2 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{Equation (2)}$$

$$SD = \beta_0 + \beta_3 X_3 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{Equation (3)}$$

$$SD = \beta_0 + \beta_4 X_4 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{Equation (4)}$$

To test the combined influence of independent variables (collateral value of assets, size of the firm, earnings volatility, profitability) on the dependent variable, a multiple regression model will be fitted. The model seeks to estimate the joint influence of the independent variables on capital structure choice in commercial banks in Kenya. The multiple regression model was given by the equation below;

$$SD = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \ldots\ldots\ldots\ldots\text{Equation (5)}$$

Where: $\beta_1, \beta_2, \beta_3$ and β_4 are the regression coefficients of the predictors in the model

SD – Capital structure choice in commercial banks in Kenya

β_0 – The intercept of the equation (Constant term)

X_1 – Collateral value of assets

X_2 – Size of a firm

X_3 – Earnings volatility

X_4 – Profitability

ε – The error term

3.7.6 Moderated Multiple Regression Models

Moderator is a variable that affects the direction and the strength of the relationship between an independent or predictor variable and a dependent criterion variable

(Clayton & Hills, 2013). This variable may reduce or enhance the direction of the relationship between a predictor variable and a dependent variable, or it may change the direction of the relationship between the two variables from positive to negative (Andersen et al., 2002). This study will use multiple regressions analysis (stepwise method) to establish the moderating influence of ownership (Z) on relationship between collateral value of assets, size of the bank, earnings volatility and profitability on capital structure choice in commercial banks in Kenya. To determine the direction and the effect of the moderating variable on each of the independent variables and the total effect on the dependent variable, equation (6) will be used while equation model (7) will be used to test the joint moderating effect.

$Y = \beta 0 + \beta iXi + \beta izXiZ + \varepsilon$, (i=1, 2, 3, 4) ………………………. Equation (6)

$Y = \beta 0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta zZ + \beta izXiZ + \varepsilon$, (i=1, 2, 3, 4,5) …………………………………Equation (7)

Where:

Y is Capital structure choice (Dependent variable), X_1 is Collateral value of assets, X_2 is size of the bank, X_3 is Earnings volatility, X_4 is Profitability and

Z is the hypothesized moderator (Ownership). ZiX is the interaction term of the Ownership with each of the independent variables (4,3,2,1 , ,,, XXXX)

βzZ is the coefficient of X*Z the interaction term between collateral value of assets and each of the independent variables for i= 1,2,3,4

β_0 is constant (Y- intercept) which represent the value of Y when X =0

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CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the research findings of the study following the data analysis. Inferences from the data analysed provides the corresponding discussions. The chapter outlines the diagnostic tests results comprising of normality tests, autocorrelation and multicollinearity tests, the correlation of determination, correlation coefficients as well as *p value* results on the five study objectives. The inferential statistics results generated from the secondary data forms the basis for discussion on all the variables endeavouring to examine the factors influencing capital structure choice for commercial banks operating in Kenya. Theoretical and empirical literature reviewed in chapter two were utilised to corroborate the research findings of the study.

4.2 Response Rate

Data was collected from heads of finance of commercial banks in Kenya. A total of 39 questionnaires were issued from which 33 were filled and returned which represents a response rate of 84.61%. The response rate was considered satisfactory since Mugenda and Mugenda (2003) asserted that a response rate of 50% is adequate for analysis. Babbie, (2004) also asserted that the return of rates of 50% are acceptable to analyze and publish, 60% is good and 70% is very good. The achieved success rate in the current study was more than 70% which implied that the response rate was very good. The success rate was attributed to the self-administration of the questionnaires applied by the researcher from which the intended respondents were pre -notified prior to the date of data collection from which the researcher agreed on the actual date and venue for the data questionnaire administration. Follow-up calls to clarify queries were made thus enhancing the high response rate. The response rate is represented in Table 4.1

Table 4.1: Response Rate

Questionnaire	Count	Percentage
Returned	36	92.31
Non-Returned	3	7.69
Total	**39**	**100**

4.3. Demographic Information

The personal and contextual characteristics collected included age, highest level of academic qualification, years worked in the current corporation, length of the longest serving employee, means of supporting capital structure choice in an organization and organization objective in commercial banks discussed as follows:

4.3.1. Age of the Respondents

The study sought to identify the different age categories of the respondents. As Figure 4.1 shows majority of the respondents were aged between 36 to 40 years as accounted for by 35.1%, followed by 26.4% who aged between 31 to 35 years while 21.2% aged between 41 to 45 years. Therefore the sample was representative enough to capture the views of different age groups in management in the commercial banks. The findings however imply that the respondents were old enough to provide valuable responses that pertains capital structure choice in commercial banks in Kenya. This is further reinforced by the fact that some of the respondents had stayed in the commercial banks for more than ten years hence conversant with the capital structure in the commercial banks in Kenya.
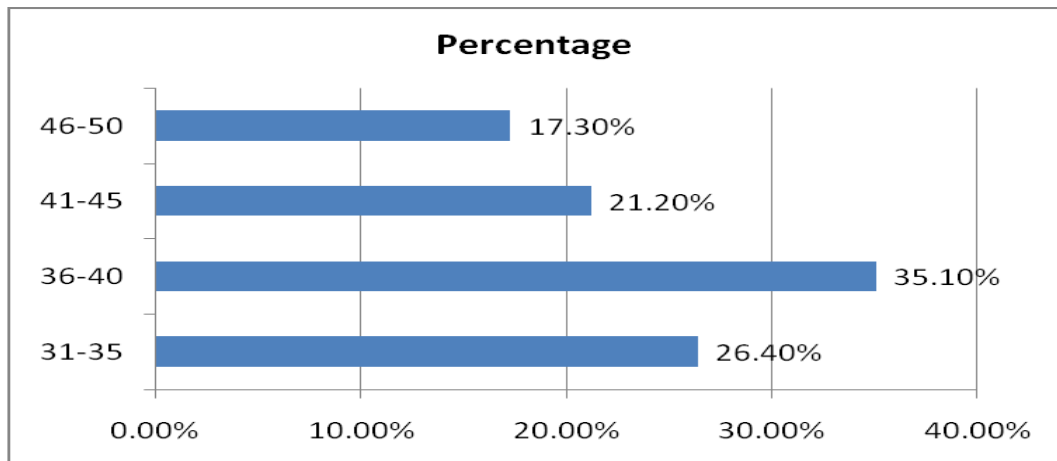
Figure 4.1: Age of the Respondents

4.3.2. Level of Education of the Respondents

The employees level of education was categorised into; diploma, bachelors, masters and PhD. The pictorial presentation depicted that majority 38% of the respondents had attained bachelors' level of education, followed by 35% who were masters' holders, while 26% were diploma holders and 1% had attained PhD. This implies that the commercial banks surveyed had a homogenous pool of staff though skewed towards bachelor holders. This is illustrated in Figure 4.2 below;
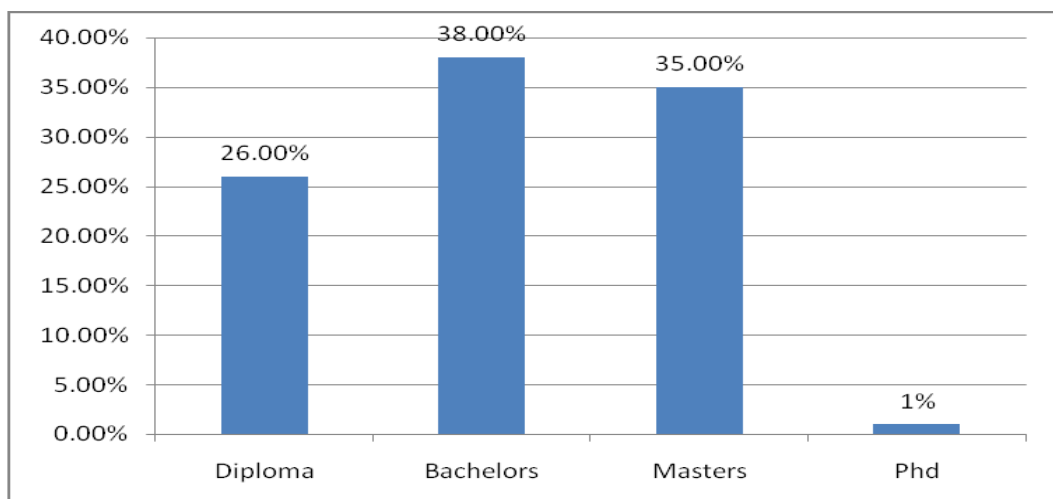
Figure 4.2: Level of Education of Respondents

4.3.3. Work Duration

How long the respondents worked in an institution gives them institutional memory and therefore places them in a vantage position to understand how the organization works. To this end, the study sought to find out how long the respondents being interviewed had worked in their organizations. The study sought to establish the number of years that the respondents had served in the commercial banks. From the findings in Figure 4.3, it was found that majority (37%) had served in the commercial banks worked for a period ranging between 4 to 6 years, followed by 33% who had worked for a period of 7 to 10 years. In addition, 17% had worked for a period of 11 to 20 years and 13% had worked for a period of 1 to 3 years. This implies that majority of the respondents had worked in the commercial banks for a time long enough for them to understand and share their respective capital structure choice policies and practices.
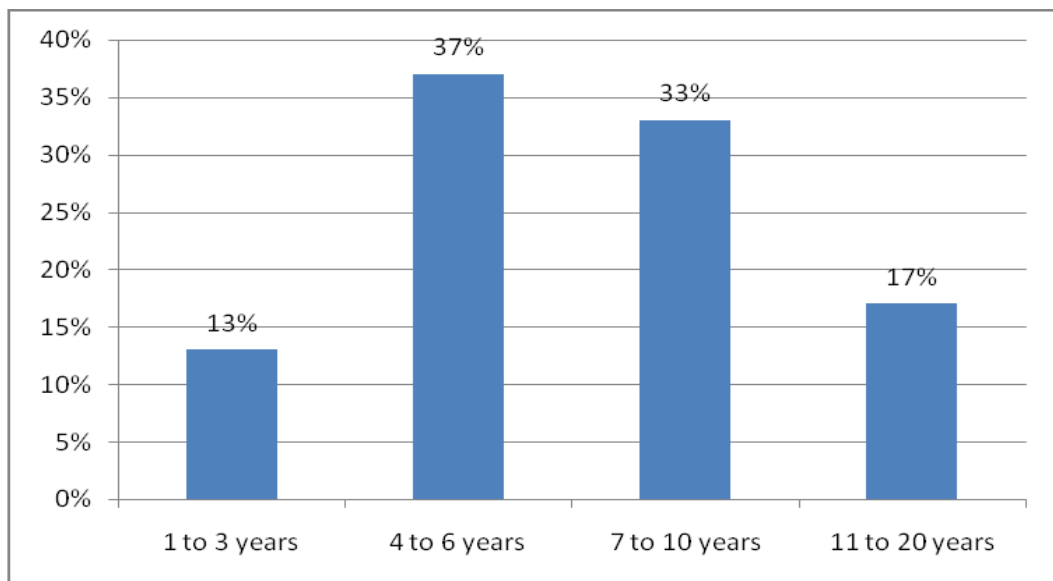
Figure 4.3: Work Experience

4.2. Diagnostic Tests

The study used classic linear regression model due to its ability to show relationships between the independent and the dependent variables (Castillo-Montoya (2016). Classic linear regression model has important underlying assumptions that must be tested before it can be utilized as a model of data analysis and hence the researcher embarked on the exercise. The key assumptions affecting the study are discussed herein.

4.2.1. Normality Test

Inferential statistics are meant to infer whether there is underlying relationship within the respective variables being studied. For the purpose of subsequent analysis in this study, the dependent variable (capital structure choice) was subjected to normality test to check whether the data collected was normally distributed or not. If the dependent variable is not normally distributed then there would be problems in subsequent statistical analysis and the analysis can only be done if the variable assumes normality (Child, 1990). The capital structure normality test was done using a normal Q–Q plot in Figure 4.4 which randomly generated, independent standard normal data on the vertical axis to a standard normal population on the horizontal axis. The linearity of the points suggests that the data on capital structure are normally distributed.
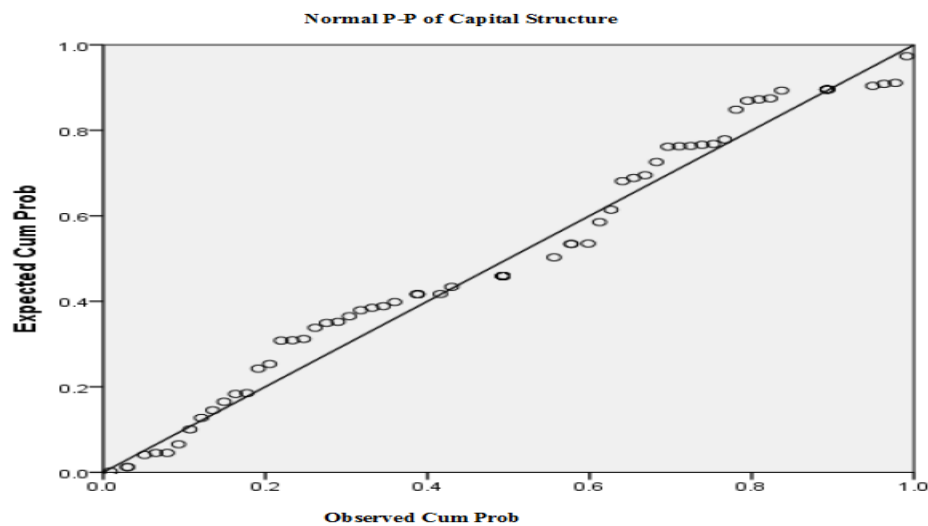
Figure 4.4: Normality Test

4.2.2. Multicollinearity Test

Bickel (2007) posits that multicollinearity occurs in statistics where two or more predictor variables in a multiple regression are highly correlated. In this situation the coefficient estimates may change erratically in response to small changes in the model or the data (Farrar & Glauber, 2005). Multicollinearity test helps to reduce the variables that measure the same things and also checks model redundancy (Robert, 2007). Variance inflation factor (VIF) was used to test multicollinearity in this

study. Using this method, a tolerance of less than 0.20 and a VIF of more than 5 indicates a presence of multicollinearity (Runkle & Mu, 2013). According to Table 4.2 there is no variable with a tolerance value less than 0.20 or VIF greater than 5 and therefore no presence of multicollinearity. This also indicates that the beta values of the regression equation of all the independent variables would be stable with low standard errors.

Table 4.2: Multicollinearity Results

Variable of Study	Tolerance	Variance Inflation Factor (VIF)
Collateral value	0.511	1.913
Bank size	0.463	1.192
Volatility of earnings	0.473	1.272
Profitability	0.495	1.463
Ownership	0.506	1.572

4.2.3. Autocorrelation Test

Durbin-Watson statistic was used to describe the status of autocorrelation in this study. Durbin statistic has to lie between 1.5 – 2.5 (Cameron, 2005; Garson, 2012). The results of the test equal to 1.628 shows that the Durbin–Watson coefficient was between 1.5 and 2.5 implying that there was no autocorrelation in the data residual among the variables used in this study. Ogundipe, Idowu and Ogundipe (2012) and Gujarati (2009) used Durbin–Watson test to determine whether there was autocorrelation in their data residuals. Durbin-Watson statistic is better when it is closer to 2 as for the case in this study and from this study implying the study residuals do not form any unique pattern hence reinforcing the assertion that there is no autocorrelation in the variables investigated in this study.

4.3. Descriptive Analysis

Descriptive statistics help to describe, show or summarize data in a meaningful way such that patterns might emerge from the data. Descriptive statistics simply describe the data and do not allow making conclusions beyond the analysed data to reach conclusions regarding any hypotheses made. Descriptive statistics, therefore, enable data to be presented in a more meaningful way allowing simpler interpretation of the data (Zikmund & Babin, 2012).

4.3.1. Descriptive Analysis for Capital Choice for Commercial Banks

The general objective of this study was to establish the factors influencing capital structure choice of commercial banks in Kenya. Results in Table 4.3 indicate that commercial banks' revenue has increased over the last ten years with a mean of 3.653.This is due to share ownership policy for management which have reduced agency problems of the firm. Strict adherence to International Financial Reporting standards and hardly engaging in window dressing and manipulation of financial information has contributed to profitability improving over the last ten years with a mean of 3.981. Strictly adhering to legal stipulations and guidelines when procuring assets has resulted to a tremendous increase in asset growth over the last ten years with a mean of 4.439. Opportunities and risks information provided in the annual report has greatly contributed to increase in investors' base in the organizations for the last ten years with a mean of 3.342. Forward-looking information providing balanced highlights of positive and negative events have resulted to reduction in earnings volatility over the last ten years with a mean of 3.555. Inclusion and participation in company financial decision making has resulted to return on equity increasing over the last ten years with a mean of 3.872, while return on assets has increased over the last ten years with a mean of 4.211 due to sound acquisition, usage and disposal policy on assets. The average mean for all the responses was 3.883 and an overall mean of standard deviation was 0.624. Based on the scale of 1 to 5 the average mean of all the responses was 3.883 meaning that most of the respondents agreed with the statements on capital structure choice of commercial banks in Kenya.

The study findings are in agreement with the findings by Octavia and Brown (2008) who established that the financial crises are cyclical in nature and are bound to recur

in coming years making it an imperative for banks to cushion themselves against failure by managing their capital adequacy and structures effectively. Mishkin (2000) avers that the correct application of capital structure theory and compliance with regulations will clarify the relationship between capital structure and bank credit and decrease a bank's risk profile and in turn result in a more stable financial system and economy at large. Diamond and Rajan (2000) and Allen, Carletti and Marquez (2009) suggest that firms select capital structures depending on variables that determine the various costs and benefits associated with debt and equity financing as a means of determining whether or not they are achieving their objectives.

Table 4.3: Capital Structure Choice Descriptive Analysis

Statement	Mean	Std.
Share ownership policy for management have reduced agency problems resulting to increase of revenue for the last ten years	3.653	0.463
Strict adherence to International Financial Reporting standards and hardly engaging in window dressing and manipulation of financial information has led to increased profitability for the last ten years	3.981	0.765
The Bank's strict adherence to legal stipulations and guidelines when procuring assets has resulted to increase of quality assets for the last ten years	4.439	0.453
The Bank's opportunities and risks information provided in the annual reports has greatly contributed to the increase of investors for the last ten years	3.342	0.876
The Bank's forward-looking information providing balanced highlights of positive and negative events has helped the Earnings per share to improve for the last ten years	3.555	0.865
The Bank's sound acquisition, usage and disposal policy on asset has led to increase of return on assets for the last ten years.	3.872	0.324
Overall Mean	3.883	0.624

Key: Scale 1.0- 1.8 strongly disagree, 1.9- 2.6 Disagree, 2.7- 3.4 Neutral, 3.5- 4.2 Agree, and 4.3- 5.0 strongly agree

4.3.2. Descriptive Analysis for Collateral Value of Assets

The general objective of this study was to establish the influence of collateral value of assets on capital structure choice of commercial banks in Kenya. Results in Table 4.4 indicate that banks have adequate collateral to get cheaper and secure debts with a mean of 3.865. The banks' assets are tangible to enhance debt-equity ratio with a mean of 3.654. The fixed assets help the banks on higher debt financing with a mean of 4.457. The fixed assets act as a collateral for underlying risks associated with borrowing with a mean of 3.869. The collateral value of assets reduces costs of financial distress thus adequate liquidation with a mean of 3.880. The operating assets are adequate for the long-term debts with a mean of 3.898. The average mean for all the responses was 3.937 and an overall mean of standard deviation was 0.465. Based on the scale of 1 to 5 the average mean of all the responses was 3.883 meaning that most of the respondents agreed with the statements on capital structure choice of commercial banks.

The study results are in agreement with the findings by Esperanca and Mohamed (2003) who find that firms which possess assets that can be used as collateral have the opportunity to issue cheaper and secure debts and should consequently have more debts in their capital structure. Empirical studies by Hovakimian et al. (2001) also suggest that tangibility of assets affect the collateral value of assets which in turn influence a firm's debt-equity ratio. A firm's tangible assets include machines and inventories, assets that could potentially be sold much more easily than a firm's intangible assets: its trademarks, its reputation for quality, brand recognition, or the accumulated knowledge of its workforce. Firms having larger fraction of fixed assets tend to have higher debt financing as they can use their fixed assets as collateral for the underlying risk associated with borrowing. The reason for firms with more fixed assets being financed through debt is that they can borrow at a relatively lower rate of interest. Thus a positive relationship is expected between collateral value of assets and debt-equity ratio.

Table 4.4: Collateral Value of Assets Descriptive Analysis

Statement	Mean	Std.
Bank has adequate collateral to get cheaper and secure debts	3.865	0.254
The bank assets are tangible to enhance debt-equity ratio	3.654	0.465
The fixed assets help the bank on higher debt financing	4.457	0.912
The fixed assets act as a collateral for the underlying risks associated with the borrowing	3.869	0.428
The collateral value of the bank reduces costs of financial distress thus adequate liquidation	3.880	0.316
The operating assets are adequate for the long-term debts of the bank	3.898	0.418
Overall Mean	3.937	0.465

Key: Scale 1.0- 1.8 strongly disagree, 1.9- 2.6 Disagree, 2.7- 3.4 Neutral, 3.5- 4.2 Agree, and 4.3- 5.0 strongly agree

4.3.3. Descriptive Analysis for Size of Bank

The general objective of this study was to establish the influence of size of the bank on capital structure choice of commercial banks in Kenya. Results in Table 4.5 indicate that the number of deposits has increased the debt equity ratio with a mean of 3.876. The bank's net value has increased long-term debt of the bank with a mean of 3.888. The number of customers who have deposits has increased debt financing with a mean of 4.654. The bank has diversified sources of cash thus less prone to bankruptcy with a mean of 3.872. The net value of the bank does not restrict access to capital markets with a mean of 3.987. The net value of the bank is large enough to employ the long-term debts with a mean of 3.768. The average mean for all the responses was 4.007 and an overall mean of standard deviation was 0.386. Based on the scale of 1 to 5 the average mean of all the responses was 4.007 meaning that most of the respondents agreed with the statements on size of banks and capital structure choice.

The study results are in agreement with the findings by Shah and Hijazi (2004) who find that larger firms employ more debt because they have more strength to absorb the risk of bankruptcy. The bankruptcy costs for such a firm will be low in terms of proportion to their total worth, which is the prime reason of taking more debt by larger firms. Smaller firms take less debt because of their fear to become bankrupt if they are unable to repay their debt on time. Similarly, Prasad, Green and Murinde (2001) argue that there are economies of scale in bankruptcy costs: larger firms face lower unit costs of bankruptcy than smaller firms. Huang and Song (2005) also suggest that larger firms have more access to funds and less chances of default and hence enjoy more borrowings as compared to smaller firms. Further., according to Modoulge (2009) a firm's size has been a critical point of capital structure decision as small firms have restricted access to capital markets and when they do, they pay higher interest rate as compared to larger firms and their growth is ultimately affected.

Table 4.5: Bank Size Descriptive Analysis

Statement	Mean	Std.
The number of deposits has increased the debt equity ratio	3.876	0.435
The bank's net value has increased long-term debt of the bank	3.888	0.324
The number of customers who have deposits has increased debt financing	4.654	0.523
The bank has diversified sources of cash thus less prone to bankruptcy	3.872	0.242
The net value of the bank does not restrict access to capital markets	3.987	0.438
The net value of the bank is large enough to employ the long-term debts	3.768	0.356
Overall Mean	4.007	0.386

Key: Scale 1.0- 1.8 strongly disagree, 1.9- 2.6 Disagree, 2.7- 3.4 Neutral, 3.5- 4.2 Agree, and 4.3- 5.0 strongly agree

4.3.4. Descriptive Analysis for Earnings Volatility

The general objective of this study was to examine the influence of earnings volatility on capital structure choice of commercial banks in Kenya. Results in Table 4.6 indicate that change in bank operating income has increased the debt equity ratio with a mean of 4.326; the bank's net value has increased premium to access financing of long-term debt of the bank with a mean of 4.228; the retained earnings do carry out a risk of drop in earnings level with a mean of 4.432; the retained earnings enhance banks optimal level thus high debt-equity ratio with a mean of 4.980; the change in operating income does not restrict access to capital markets with a mean of 4.234; the retained earnings of the bank is large enough to employ the long-term debts with a mean of 3.886. The average mean for all the responses was 4.333 and an overall mean of standard deviation was 0.696. Based on the scale of 1 to 5 the average mean of all the responses was 4.333 meaning that most of the respondents agreed with the statements on earnings volatility and capital structure choice.

The study results are in agreement with the findings by Myers (2001) that the earnings volatility is underinvestment problem which affects firm's cash flow. Earnings volatility is, thus, expected to be negatively correlated with debt-equity ratio. Both trade-off theory and the pecking order theory suggest a negative relationship between earnings volatility and debt-equity ratio. Firms with high earnings volatility carry a risk of the earnings level dropping below their debt servicing commitments. Such an eventuality may result in rearranging the funds at a high cost or facing bankruptcy risk. It can therefore be argued that, firms with highly volatile earnings should have lower debt capital. Similarly, Titman and Wessels (1988) study suggests that a firm's optimal debt level is a decreasing function of the volatility of earnings. Firms experiencing high volatility in earnings would tend to have low debt-equity ratios. Firms with high earnings volatility face a risk of the earnings level dropping below their debt servicing commitments, thereby incurring a higher cost of financial distress.

Table 4.6: Earnings Volatility Descriptive Analysis

Statement	Mean	Std.
The change in bank operating income has increased the debt equity ratio	4.326	0.236
The bank's net value has increased premium to access financing of long-term debt of the bank	4.228	0.568
The retained earnings do carry out a risk of drop in the earnings level	4.432	0.880
The retained earnings enhance banks optimal level thus high debt-equity ratio	4.980	0.642
The change in operating income does not restrict access to capital markets	4.234	0.860
The retained earnings of the bank is large enough to employ the long-term debts	3.886	0.990
Overall Mean	4.333	0.696

Key: Scale 1.0- 1.8 strongly disagree, 1.9- 2.6 Disagree, 2.7- 3.4 Neutral, 3.5- 4.2 Agree, and 4.3- 5.0 strongly agree

4.3.5. Descriptive Analysis for Profitability

The general objective of this study was to examine the influence of earnings volatility on capital structure choice of commercial banks in Kenya. Results in Table 4.7 indicated that the bank retained profits has increased the debt equity ratio with a mean of 4.222; the bank's retained profits has increased premium to access financing of long-term debt of the bank with a mean of 3.998; the return on assets has helped to carry out a risk of the earnings level dropping with a mean of 4.462; the interest bearing assets enhance banks optimal level thus high debt-equity ratio with a mean of 3.886; The interest bearing assets restrict access to capital markets with a mean of 3.971. The retained profits of the bank are large enough to employ the long-term debts with a mean of 4.144. The average mean for all the responses was 3.487 and an overall mean of standard deviation was 0.767. Based on the scale of 1 to 5 the average mean of all the responses was 4.144 meaning that most of the respondents agreed with the statements on profitability and capital structure choice.

The study findings are in agreement with the findings by Mazur (2007) who established that profitable firms are more likely to generate internal funds and it is expected that firm debt-equity ratio would decrease due to profitability – affirming the pecking order hypothesis of a negative correlation between profitability and debt-equity ratio. Profitable firms with access to retained profits can use them to finance their investments as opposed to depending on outside sources (debt). Murinde et al. (2004) observe that retentions are the principal source of internal finances. Titman and Wessels (1988) and Barton et al. (1989) agree that firms with high profit rates, all things being equal, would maintain relatively lower debt-equity ratios since they are able to generate such funds from internal sources. Bevan and Danbolt (2004) find profitability to be related to a firm's debt-equity ratio. This supports Myers (1977) pecking order theory that profitable firms will tend to use less of external finances. Their study suggests strong relationship between debt financing and profitability.

Table 4.7: Profitability Descriptive Analysis

Statement	Mean	Std.
The bank retained profits has increased the debt equity ratio	4.222	0.864
The bank's retained profits has increased premium to access financing of long-term debt of the bank	3.998	0.652
The return on assets has helped to carry out a risk of the earnings level dropping	4.462	0.980
The interest bearing assets enhance banks optimal level thus high debt-equity ratio	3.886	0.886
The interest bearing assets restrict access to capital markets	3.971	0.354
The retained profits of the bank is large enough to employ the long-term debts	4.328	0.864
Overall Mean	4.144	0.767

Key: Scale 1.0- 1.8 strongly disagree, 1.9- 2.6 Disagree, 2.7- 3.4 Neutral, 3.5- 4.2 Agree, and 4.3- 5.0 strongly agree

4.3.6. Descriptive Analysis for Ownership Structure

The general objective of this study was to examine the effect of ownership structure on capital structure choice of commercial banks in Kenya. Results in Table 4.8 indicate that government plays a pivotal role in making the banks' financial decision with a mean of 3.876. Government policies are merged with strategic plan when making bank's financial decisions with a mean of 4.218. Government gives a positive public image and confidence to investors with a mean of 3.998. Local ownership helps bank to get tax exemptions and subsidies from the government with a mean of 3.768. Local shareholding facilitates bank to have local networks and collaborations with a mean of 3.889. Foreign shareholding helps bank in establishing collaborative linkages and network with a mean of 3.780. The average mean for all the responses was 3.921 and an overall mean of standard deviation was 0.510. Based on the scale of 1 to 5 the average mean of all the responses was 3.921 meaning that most of the respondents agreed with the statements on ownership structure influence on capital structure choice of commercial banks.

The findings of the study are in line with Kiruri (2013) study on ownership structure on banks profitability in Kenya which found that local ownership had positive and significant effects on the banks profitability and concluded that higher local ownership can lead to higher profitability in commercial banks. Ng'ang'a (2017) examined the effects of ownership structure and firm governance on the financial performance with the initial public offering (IPO) and their empirical results showed that higher concentrated local ownership improves firms' IPO performance and have an overall significant impact on firms' financial performance.

Further, the study findings are supported by a number of studies which include Yu, M (2013) who found that a higher degree of state ownership is superior to a dispersed ownership structure because of the benefits of government support and political associations. Wadongo, Odhuno and Kambona, (2010) supported study findings that when the government ownership level is high, government can use the feedback on performance to make adjustments to policies and other modes of organizational operations to avoid negative implications for firm performance. Huyghebaert and Wang, (2012) noted that in Chinese public listed companies when

the state ownership level is high, bureaucrats put more effort into firms leading to improved financial performance.

Table 4.8: Ownership Structure Descriptive Analysis

Statement	Mean	Std.
Government plays a pivotal role in making the banks' financial decision.	3.876	0.654
Government policies are merged with strategic plan when making bank financial decisions	4.218	0.543
Government gives a positive public image and confidence to investors	3.998	0.419
Local ownership helps bank to get tax exemptions and subsidies from the government	3.768	0.548
Local shareholding facilitates our bank to have local networks and collaborations	3.889	0.530
	3.780	0.368
Foreign shareholding helps bank in establishing collaborative linkages and network		
Overall Mean	3.921	0.510

Key: Scale 1.0- 1.8 strongly disagree, 1.9- 2.6 Disagree, 2.7- 3.4 Neutral, 3.5- 4.2 Agree, and 4.3- 5.0 strongly agree

4.4. Inferential Analysis

The study proceeded to carry out statistical tests to establish the existence of relationships or otherwise between the independent variables (collateral value, bank size, volatility of earnings, profitability and ownership) and the dependent variable (capital structure). The tests were also used to test the hypotheses of the study as well as establishing a predictor model of various relationships. The study used correlation and regression analysis.

4.4.1. Correlation Analysis

Correlation is a bivariate analysis that measures the strength of linear association between two variables and the direction of the relationship. According to Gogtay and Thatte (2017), Pearson(*r)* correlation is the most widely used correlation statistic to measure the degree of the relationship between linearly related variables and adopted in this study. To measure the strength of the relationship, the value of the correlation coefficient varies between +1 (positive one) and -1 (negative one).

When the value of the correlation coefficient lies around ± 1, then it is said to be a perfect degree of association between the two variables. As the correlation coefficient value goes towards 0, the relationship between the two variables will be weaker. The direction of the relationship is simply the +sign (indicating a positive relationship between the variables) or −sign (indicating a negative relationship between the variables). Pearson Product moment correlation was used to determine the relationship between independent variables (collateral value of assets, size of bank, earnings volatility and profitability) and dependent variable capital structure choice in commercial banks in Kenya.

Pearson Correlation Coefficient between Collateral Value and Capital Structure

Pearson Correlation Coefficient (PCC) results of this study as indicated in Table 4.9 shows that there is a strong positive and significant 0.862 correlation between collateral value of bank assets and capital structure choice. The strong positive linear relationship between collateral value and capital structure is significant given that the p value equal to 0.005 is less than 0.05 confidence level.

Table 4.9: Pearson Correlation Results on Collateral Value

	Collateral Value	Capital Structure
Collateral Value	1	
Capital Structure	0.862	1
Sig.	.005	

Pearson Correlation Coefficient on Bank Size and Capital Structure

PCC results of this study as indicated in Table 4.10 shows that there is a positive and significant 0.773 correlation between bank size and capital structure. The strong positive linear relationship between bank size and capital structure is significant given the p value equal to 0.005 is less than 0.05 confidence interval.

Table 4.10: Pearson Correlation Results on Bank Size

	Bank Size	Capital Structure
Bank Size	1	
Capital Structure	0.773	1
Sig.	.005	

Pearson Correlation between Volatility of Earnings and Capital Structure

To determine the correlation between volatility of bank earnings and capital structure choice, the study generated the PCC results as indicated in Table 4.11. The findings in this study indicate that there is a negative and significant 0.976 correlation between the volatility of a bank's earnings and capital structure choice. The strong and negative linear relationship between volatility of a bank's earnings and capital structure is significant given the p value equal to 0.003 is less than 0.05 confidence interval.

Table 4.11: Pearson Correlation Results on Volatility of Bank Earnings

	Volatility of Bank Earnings	Capital Structure
Volatility of Bank Earnings	1	
Capital Structure	- 0.976	1
Sig.	0.03	

Pearson Correlation Coefficient between Profitability and Capital Structure

The study determined the correlation between profitability and the capital structure choice for commercial banks operating in Kenya. PCC results as indicated in Table 4.12 were generated to derive the conclusion. The findings in this study indicate that there is a positive and significant 0.931 correlation between profitability and capital structure choice for commercial banks operating in Kenya. The strong and positive

linear relationship between profitability and capital structure is more so significant given the p value equal to 0.000 is less than 0.05 confidence interval.

Table 4.12: Pearson Correlation Results on Profitability

	Profitability	Capital Structure
Profitability	1	
Capital Structure	0.931	1
Sig.	0.000	

4.4.2. Regression Analysis

Regression analysis is a form of predictive modelling technique which investigates the relationship between a dependent and independent variable(s). This technique is used for forecasting, time series modelling and finding the causal effect relationship between the variables (Robson, 2011). With this analysis, one is able to understand how the typical values of the dependent variable change when one of the independent variable is varied, while the other variables are held constant/fixed. This study applied a multiple regression model to identify the role of collateral value of assets, size of bank, earnings volatility, profitability and their impact on capital structure choice of commercial banks in Kenya.

All the four independent variables were measured using the responses on each of the variables obtained from the respondents. The collected data satisfied the assumptions for multiple linear regressions as established in the diagnostics tests. The initial effort to examine the relationships proposed by the research model involved conducting a bivariate analysis between each independent variable and the dependent variable. The second step is conducting a multiple regression analysis by examining the relationship between all independent variables and the dependent variable. The study used moderated multiple regression analysis to estimate the interaction effect and test the moderating effect of ownership on the relationship between collateral value of assets, size of bank, earnings volatility, profitability and capital structure choice of commercial banks in Kenya.

Bivariate regression analysis is used to analyse the relationship between a single dependent variable and single predictor variable (Hair, Black, Babin, & Anderson, 2012). It is one of the simplest forms of statistical analysis, used to find out if there is a relationship two variables X and Y (X = independent variable) and (Y = dependent variable).The study used bivariate analysis to test the first four alternative hypotheses. The F-test was used further to determine the validity of the model while R squared was used as a measure of the model goodness of fit. The regression coefficient summary was then used to explain the nature of the relationship between the dependent and independent variables.

Regression Analysis between Collateral Value and Capital Structure

A linear regression analysis was run to determine the relationship between Collateral Value and Capital Structure using a scatter plot diagram and the line of best fit as shown in Figure 4.5. The scatter plots results depict a linear positive relationship between the Collateral Value and Capital Structure among the commercial banks operating in Kenya. This suggests that an improvement on the collateral value of assets among the commercial banks will lead to a corresponding increase on the debt-equity ratio (capital structure choice). Anderson et al. (2002) further suggests that to determine how well the model fits the data in question, line of best fit is drawn as in this case as it is a key indicator of the predictive accuracy of the model. According to Figure 4.5, it is observed that there is positive correlation between collateral value of assets and capital structure choice.
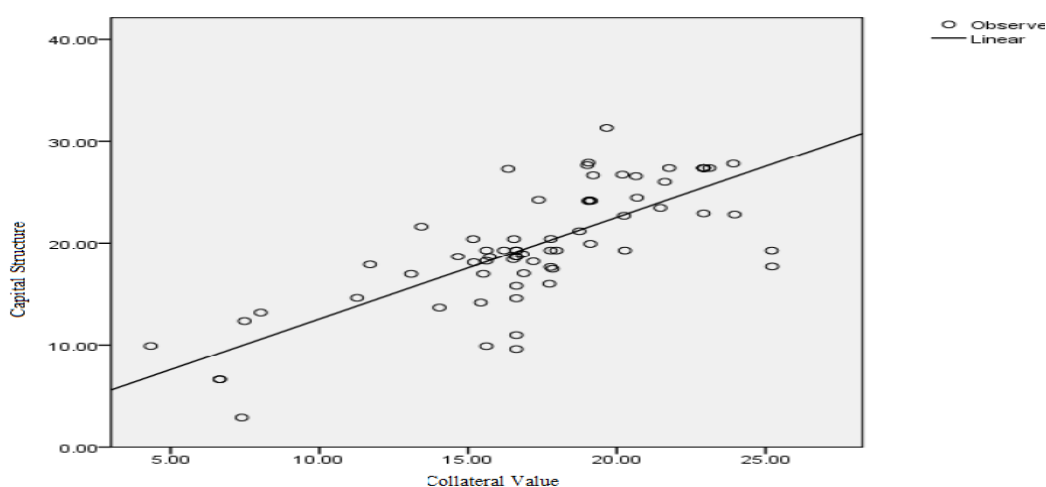
Figure 4.5: Scatter Plots of Collateral Value and Capital Structure

The regression model is as presented in Equation 4.1 below.

$$CAPSTR = \beta_o + \beta_2 CV + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. \quad \text{Equation (4.1)}$$

Where;

CAPSTR = Capital Structure Choice

β_0 = Constant term associated with the regression model,

β_2 = Coefficient of independent variable, collateral value of assets,

CV = Collateral value, independent variable

ε = Error term associated with the regression model

The relationship between collateral value of assets and the capital structure choice was examined by testing the first research hypothesis which stated that:

H_0: *There is no relationship between collateral value of bank assets and capital structure choice for commercial banks in Kenya.*

Using linear regression analysis, the study proceeded to determine the effect of collateral value of assets on the capital structure choice among commercial banks in Kenya. A model summary table results as shown in Table 4.13 present values for the coefficient of correlation and the coefficient of determination, R^2. From the model summary table, the coefficient of determination, R^2 for the model was 74.44% while the R value was 0.862. These values indicate that collateral value greatly explains the variations in capital structure choice in commercial banks in Kenya with only 25.56% of the variations explained by other variables not included in the model.

Table 4.13: Model Summary (Collateral Value of Bank Assets and Capital Structure Choice)

Indicator	Value
R	0.862
R Square	0.743
Sig.	0.000

The study further examined the effect of collateral value of bank assets on capital structure choice for commercial banks in Kenya by generating ANOVA output results as shown in Table 4.14. The results further indicated that the regression model significantly predict the outcome variable given that the F statistics equal to 89.494 is statistically significant because the p-value of 0.000 is less than 0.05. This implies that statistically, the model applied is significant in predicting the capital structure choice for commercial banks in Kenya.

Table 4.14: ANOVA Statistics (Collateral Value of Bank Assets and Capital Structure Choice)

Model	Sum of Squares	d.f	Mean Square	F	Sig.
Regression	1720.788	1	1720.788	89.494	.000
Residual	596.064	31	19.228		
Total	2316.852	32			

The study proceeded to generate Beta coefficients results as represented in Table 4.15 which shows that for every unit of capital structure, collateral value contributes 1.832 which is statistically significant since p value equal to 0.000 which is less than 0.05 confidence interval. The fact that the coefficient of collateral value of bank assets equal to positive means that the collateral value of assets moves in the same direction with the capital structure choice.

Table 4.15: Coefficients of Collateral Value of Bank Assets and Capital Structure Choice

Variable	B	Std. Error	T	Sig.
Constant	19.320	3.126	6.181	0.005
Collateral Value	1.832	0.459	3.991	0.000

Figure 4.6 below shows a histogram of standardized residuals. A visual examination of the histogram suggests a positive skewness of the standardized residuals. As indicated by the statistics at the legend, the residuals have a standard deviation of 1 and a mean of zero as of a standard normal distribution implying the model yields a normal distribution giving normally distributed values. The pattern shown below indicates no problems with the assumption that the residuals are normally distributed at each level of Y and constant in variance across levels of Y and hence the assumptions underlying the model used in this study have not been violated.

Histogram
Dependent Variable: Capital Structure

Mean = -2.70E-15
Std Dev = 0.943
N = 50
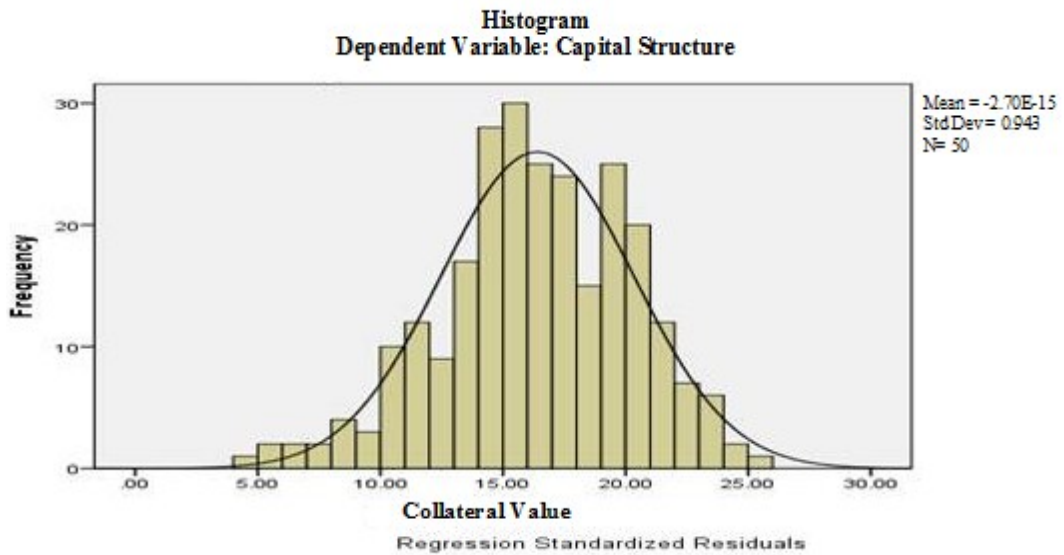
Figure 4.6: Histogram on collateral value and capital structure

Model Prediction

The study evaluated the model based on results presented in Table 4.15 after establishing that there exists a relationship between collateral value and the capital structure. An $R^2 = 0.7444$ implies that the model explains 74.44 % of the variations of capital structure. This implies that commercial banks with huge tangible assets which can be utilized as collaterals have a high potential for debt funding as they can secure their debts de-risking themselves against default risk and hence are found to be good suitors by the lenders. The fitted model is summarized in equation 4. 2 below;

CAPSTR = 19.320 + 1.832 CV…………………………………………..(Equation 4.2)

Given the results from the research findings that showed collateral value of bank assets significantly affects the variations in capital structure choice in commercial banks in Kenya, we reject the research null hypothesis and conclude that collateral value of assets affects the capital structure choice in commercial banks in Kenya.The findings of this study are corroborated by a number of previous studies on capital structure in firms among them; Esperanca and Mohamed (2003) who argue that firms which possess assets that can be used as collateral have the opportunity to issue cheaper and secure debts and should consequently have more debts in their capital structure.

Hovakimian, Opler and Titman (2001) further posited that positive relationship is expected between collateral value of assets and debt-equity ratio in that firms having larger fraction of fixed assets tend to have higher debt financing as they can use their fixed assets as collateral for the underlying risk associated with borrowing. Myers (2001) findings resonates well with this study results in that he found that stockholders of a highly levered firm are likely to overinvest which gives rise to the classical shareholder-bondholder conflict.

According to a study by Myers and Majluf (1984) firms with assets that can be used as collateral may be expected to issue more debt to take advantage of this opportunity which is no different from a study conducted by Booth, Aivazian, Demirguc-Kunt and Maksmivoc (2001) arguing that the more tangible assets a firm have, the higher the long-term debt ratio but the smaller the total debt-equity ratio. The study suggests that the relationship between tangible fixed assets and debt financing is related to the maturity structure of the debt. In such a situation, the level of tangible fixed assets may help firms to obtain more long-term debt. Studies by Bevan and Danbolt (2004) find collateral value of assets to be positively related to both short and long-term debt. These studies confirm the results in this study that the higher the collateral value of assets a bank has, the higher the debt to equity ratio for banks.

Regression Analysis between Bank Size and Capital Structure Choice

A linear regression analysis was done to determine the relationship between bank size and capital structure choice using a scatter plot diagram and the line of best fit as shown in Figure 4.7 depicted a linear positive relationship between the bank size and capital structure choice among the commercial banks operating in Kenya. This suggests that a growth in the bank size among the commercial banks leads to a correspondent increase in capital structure choice. A line of best fit on the scatter plots is a further indicator of the predictive accuracy of the model on bank size against capital structure choice. From Figure 4.7, it is observed that there is positive and linear correlation between bank size and capital structure choice.
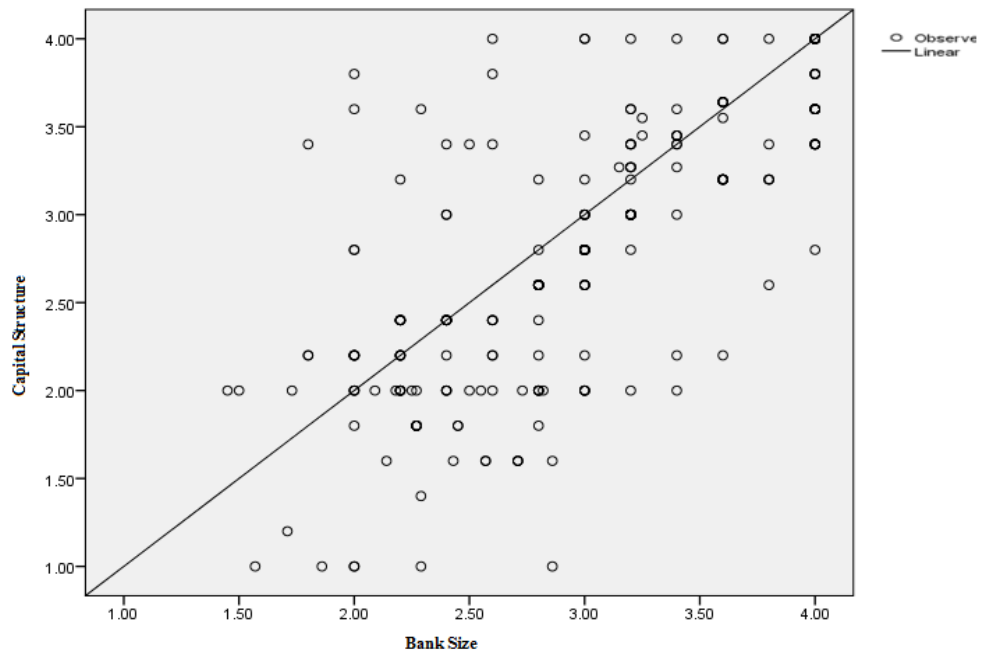

Figure 4.7: Scatter Plots of Bank Size and Capital Structure

The regression model is as presented in equation 4.3 below.

$$CAPSTR = \beta_o + \beta_2 BS + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad \text{Equation (4.3)}$$

Where;

CAPSTR = Capital structure choice

β_0 = Constant term associated with the regression model,

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β_2= coefficient of independent variable, bank size

BS= Bank size, independent variable

ε= Error term associated with the regression model

The relationship between bank size and the capital structure choice was examined by testing the second research hypothesis which stated that:

H_0: There is no relationship between bank size and capital structure choice for commercial banks in Kenya.

Using linear regression analysis, the study proceeded to determine the relationship between size of a bank and capital structure choice for commercial banks operating in Kenya. A table summarizing the model results as shown in Table 4.16 presents values for the coefficient of correlation and the coefficient of determination, R^2. From the model summary table the coefficient of determination, R^2 for the model was 59.80% while the R value was 0.773. These values indicate that bank size greatly explains the variations in capital structure choice in commercial banks operating in Kenya with 40.20% of the variations being explained by other variables not included in the model.

Table 4.16: Model Summary of Bank Size and the Capital Structure

Indicator	Value
R	0.773
R Square	0.598
Sig.	0.000

The study further examined the effect of bank size on capital structure choice for commercial banks operating in Kenya by generating ANOVA output results as shown in Table 4.17 to determine whether the regression model significantly predicts the outcome variable. The ANOVA results generated as indicated by F statistics equal to 46.115 is statistically significant because the p-value of .000 is less than

0.05. This implies that, statistically, the model applied significantly in predicting the capital structure choice in commercial banks operating in Kenya.

Table 4.17: ANOVA Statistics of Bank Size and the Capital Structure

Model		Sum of Squares	d.f	Mean Square	F	Sig.
1	Regression	1385.477	1	1385.477	46.115	.000
	Residual	931.375	31	30.044		
	Total	2316.852	32			

The study further generated Beta coefficients results as represented in Table 4.18 which shows that for every unit of capital structure, bank size contribution is statistically significant since P value equal to 0.000 is less than 0.05 confidence interval. The positive coefficient of bank size means that the bank size moves in the same direction with the capital structure choice and that a 1 unit increase in bank size leads to 2.236 units increase in capital structure.

Table 4.18: Coefficients of Bank Size and the Capital Structure

Variable	B	Std. Error	T	Sig.
Constant	4.356	1.306	3.335	0.002
Bank Size	2.236	0.823	2.716	0.000

Figure 4.8 shows a histogram of standardized residuals. A visual examination of the histogram suggests a positive skewness of the standardized residuals. As indicated by the statistics at the legend, the residuals have a standard deviation of 1 and a mean of zero as of a standard normal distribution implying the model yields a normal distribution giving normally distributed values. The pattern shown below indicates no problems with the assumption that the residuals are normally distributed at each level of Y and constant in variance across levels of Y and hence the assumptions underlying the model used in this study have not been violated.

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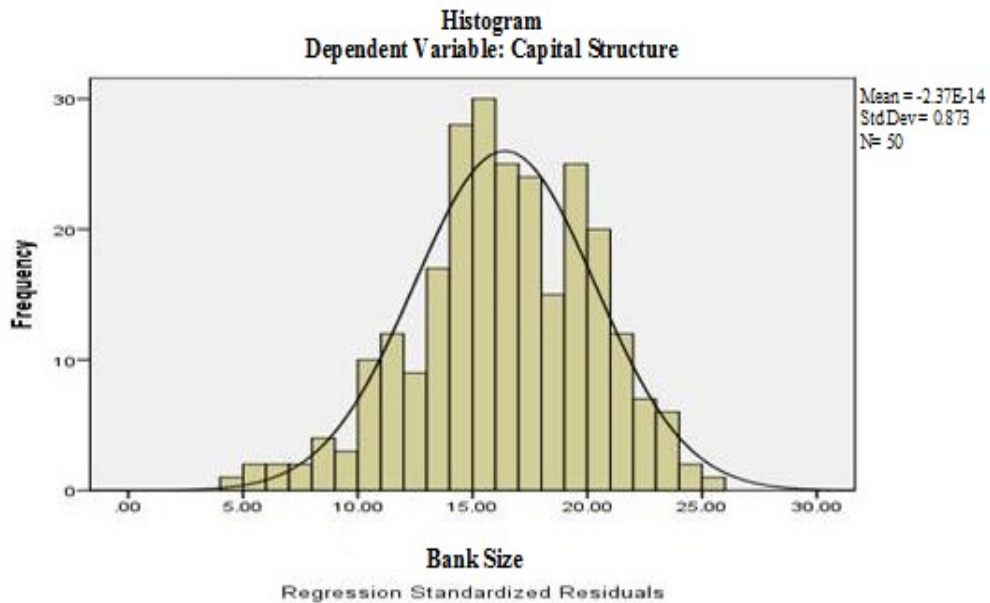
Figure 4.8: Histogram of Bank Size and Capital Structure

Model Prediction

The study further evaluated the study model based on the results presented in Table 4.18 after establishing that there existed a relationship between bank size and the capital structure choice. An $R^2 = 0.5975$ implies that the model explains 59.75 % of the variations of capital structure choice of commercial banks in Kenya as determined by the bank size. The fitted model is summarized in Equation 4.4;

CAPSTR = 4.356 + 2.236BS……………………………….….. (Equation 4.4)

The results from the research findings demonstrate that bank size influence the extent of variations in capital structure choice in commercial banks in Kenya hence we reject the research null hypothesis and conclude that bank size has a significant relationship with capital structure choice for commercial banks in Kenya.

The findings of this study are confirmed by a number of previous studies on capital structure in firms among them; Shah and Hijazi (2004) who found that larger firms employ more debt because they have more strength to absorb the risk of bankruptcy while smaller firms take less debt because of their fear to become bankrupt. Prasad,

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Green and Murinde (2001) further posited that larger firms face lower unit costs of bankruptcy than smaller firms hence they are more indebted which was agreed by Huang and Song (2005) who intimated that larger firms have more access to funds and less chances of default and hence enjoy more borrowings as compared to smaller firms.

Modoulge (2009) posited that small firms have restricted access to capital markets compared to larger firms with studies by Warner (1977) and Ang, Chua, and McConnell (1982) arguing that large firms have more diversified sources which is consistent with the view that larger firms are better diversified and less likely to breach their target debt-equity ratio. Firm size therefore is an inverse proxy of the probability of bankruptcy and hence, larger firms have higher debt capacity and may borrow more to maximize their tax benefits. These findings are in line with the findings of this study.

Consistent with this study, Olayinka (2011) examined the variables of capital structure of 66 firms listed on the Nigerian Stock Exchange and found that debt-equity ratio is positively related to the size of the firm (turnovers) which is consistent with the findings of Mao (2003), and Flannery and Rangan (2008) who concluded that the size of the firm, measured by total sales, appears to be positively related to debt-equity ratio in all. Cassar and Holmes (2003), Esperanca et al. (2003) and Hall, Hutchinson and Michaelas (2004) also found a positive association between firm size and long-term debt ratio which tallies with the findings in this study that debt to equity ratio have a positive relationship with the bank size.

Regression Analysis between Bank Earnings Volatility and Capital Structure

To establish the relationship between volatility of bank earnings and capital structure choice, a linear regression analysis was ran generating a scatter plot diagram and the line of best fit as indicated by the scatter plots in Figure 4.6 above depicted a linear negative relationship between the volatility of bank earnings and capital structure choice among commercial banks operating in Kenya. This suggests that growth of bank capital structure choice is inhibited by changes in its earnings reported on periodic basis. A line of best fit on the scatter plots is a further indicator of the

predictive accuracy of the model on volatility of bank earnings against its capital structure choice. According to Figure 4.9, it is observed that there is negative and linear correlation between volatility of bank earnings and capital structure choice.
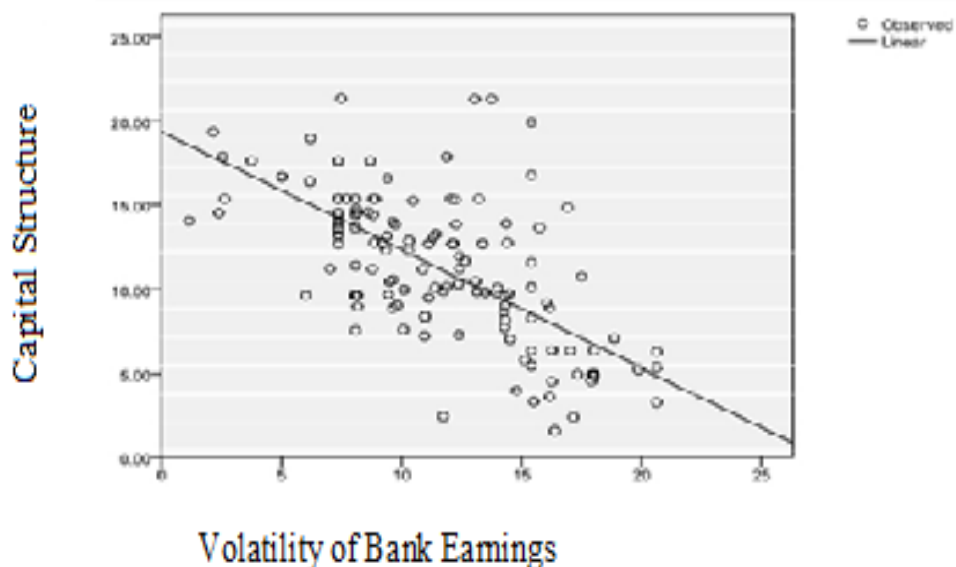
Figure 4.9: Scatter Plots of Volatility of Bank Earnings and Capital Structure

The regression model is as presented in Equation 4.5;

$$CAPSTR = \beta_0 + \beta_2 VBE + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..Equation (4.5)$$

Where;
CAPSTR = Capital Structure
β_0 = Constant term associated with the regression model,
β_2 = coefficient of independent variable, volatility of bank earnings
VBE = Volatility of Bank Earnings, independent variable
ε = Error term associated with the regression model

The relationship between volatility of bank earnings and the capital structure choice was examined by testing the third research hypothesis which stated that:

H_0: There is no relationship between volatility of bank earnings and capital structure choice for commercial banks in Kenya.

Using linear regression analysis, the study proceeded to determine the relationship between volatility of bank earnings and capital structure choice. A model summary Table 4.19 results comprise of the coefficient of correlation and the coefficient of determination, R^2. From the model summary table the coefficient of determination, R^2 for the model was 95.3% while the R value was 0.976. These values indicate that volatility of bank earnings greatly explains the variations in capital structure choice in commercial banks operating in Kenya with 4. 7% of the variations being explained by other variables not included in the model.

Table 4.19: Model Summary on Earnings Volatility and Capital Structure

Indicator	Value
R	0.976
R Square	0.953
Sig.	0.000

The study further examined the effect of volatility of bank earnings on capital structure choice for commercial banks in Kenya by generating ANOVA output results as shown in Table 4.20 to determine whether the regression model significantly predicts the outcome variable. The ANOVA results generated as indicated by F statistics equal to 2.735 is statistically significant because the p-value of 0.000 is less than 0.05 confidence interval. This implies that, statistically, the model applied significantly in predicting the capital structure choice for commercial banks in Kenya.

Table 4.20: ANOVA Statistics on Earnings Volatility and Capital Structure

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.367	1	27.367	2.735	.000[b]
	Residual	12.524	5	2.505		
	Total	2316.852	32			

The study further generated beta coefficients results as represented in Table 4.21 which shows that the relationship between capital structure and volatility in bank earnings is statistically significant given the p value equal to 0.000 is less than 0.05 confidence interval. The negative coefficient in volatility of bank earnings implies that the volatility in bank earnings and the capital structure choice in commercial banks in Kenya move in different direction and that a 1 unit increase in volatility in bank earnings leads to 5.635 units decrease in debt-equity ratio (capital structure choice).

Table 4.21: Coefficients of Volatility of Bank Earnings

Variable	B	Std. Error	T	Sig.
Constant	3.235	1.265	2.557	0.000
Volatility in Banks earnings	-5.635	1.897	-2.907	0.000

Figure 4.10 shows a histogram of standardized residuals. A visual examination of the histogram suggests a positive skewness of the standardized residuals. As indicated by the statistics at the legend, the residuals have a standard deviation of 1 and a mean of zero as of a standard normal distribution implying the model yields a normal distribution giving normally distributed values. The pattern shown below indicates no problems with the assumption that the residuals are normally distributed at each level of Y and constant in variance across levels of Y and hence the assumptions underlying the model used in this study have not been violated.
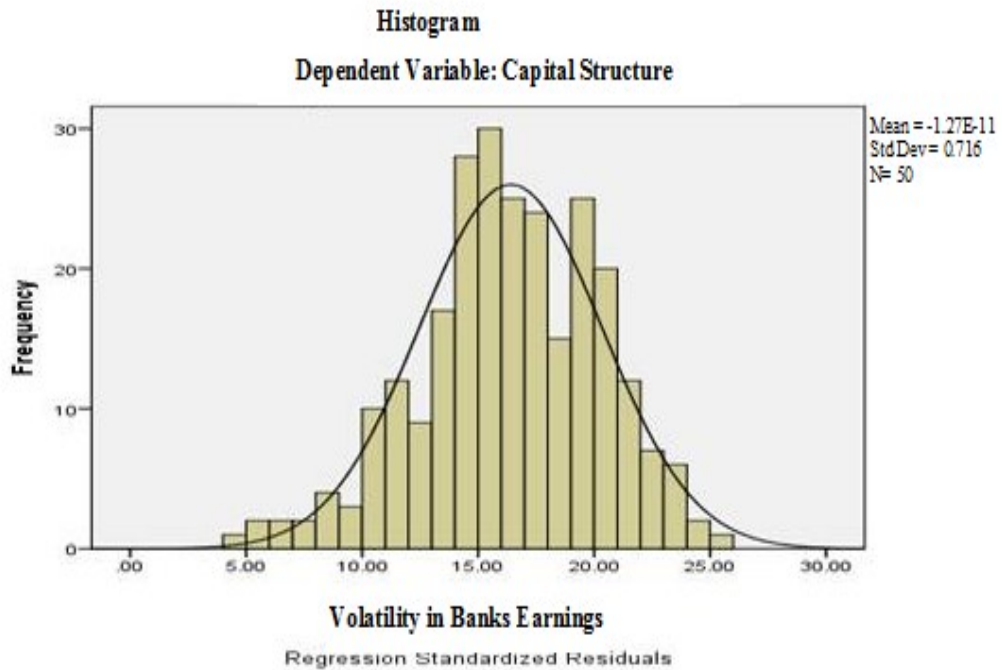
Figure 4.10: Histogram of Volatility in Bank Earnings and Capital Structure

Model Prediction

The study further evaluated the study model based on the results presented in Table 4.21 after establishing that there existed a relationship between volatility of bank earnings and the capital structure choice. An $R^2 = 0.953$ implies that the model explains 95.3 % of the variations of capital structure of commercial banks operating in Kenya. The fitted model is summarized in equation 4. 6 below;

CAPSTR = 3.235 - 5.635 VBE……………………………………….. (Equation 4.6)

The results from the research findings demonstrate that volatility of bank earnings influences the variations of capital structure choice for commercial banks in Kenya hence we reject the research null hypothesis that there is no relationship between volatility of bank earnings and capital structure choice for commercial banks operating in Kenya and conclude that volatility in bank earnings has a significant relationship with capital structure choice in commercial banks in Kenya.

The findings of this study are corroborated by a number of previous studies on capital structure choice in firms among them; Myers (2001) who found that earnings volatility is expected to be negatively correlated with debt-equity ratio given that underinvestment problem increases with the volatility of the firm's cash flow. The findings are in line with both trade-off theory and the pecking order theory which posited that a negative relationship exists between earnings volatility and debt-equity ratio where firms with high earnings volatility carry a risk and therefore should have lower debt capital. As in the case of this study, Titman and Wessels (1988) found a negative relationship between risk and leverage. The study suggested that firms experiencing high volatility in earnings would tend to have low debt-equity ratios to avoid the risk of bankruptcy that is in agreement with the trade-off theory that predicted a negative relationship between debt-equity ratio and earning volatility of a firm in line with the pecking order theory.

Flannery and Rangan (2008) concurred with the findings in this study by showing that bank earnings volatility is not positively related to the excess of book capital over required capital (the cushion), inconsistent with the view that the cushion is chosen to protect the bank against the risk of poor outcomes that would breach the regulatory capital requirement. Byoun (2008) and Flannery and Rangan (2008) suggest existence of asymmetric information where corporate insiders may have private information regarding their own earnings volatility. In such a setting of asymmetric information about earnings volatility, there is a lemons problem in pricing debt claims and the firms are better off issuing equity securities. Issuing levered equity (with call option features) can be justified as a defensive measure or as a signal of low volatility. If the market believes that firms with a high volatility of earnings are also those with a large menu of risky projects that they can adopt after the external financing is in place, it would be important to commit not to do so by issuing levered equity or convertible debt to outsiders. The conventional wisdom that firms with high volatility of earnings should borrow less is not supported by all reported evidence.

Regression Analysis between Profitability and Capital Structure

To establish the relationship between profitability and capital structure, a linear regression analysis was ran generating a scatter plot diagram and the line of best fit as shown in Figure 4.11, the study depicted a linear positive relationship between profitability and capital structure choice for commercial banks in Kenya. This suggests that growth of bank capital structure choice is propelled by positive changes in bank profitability. A line of best fit on the scatter plots further demonstrates a predictive accuracy of the model on profitability against bank capital structure choice. According to Figure 4.11, it is observed that there is positive and linear correlation between profitability and capital structure choice for commercial banks in Kenya.
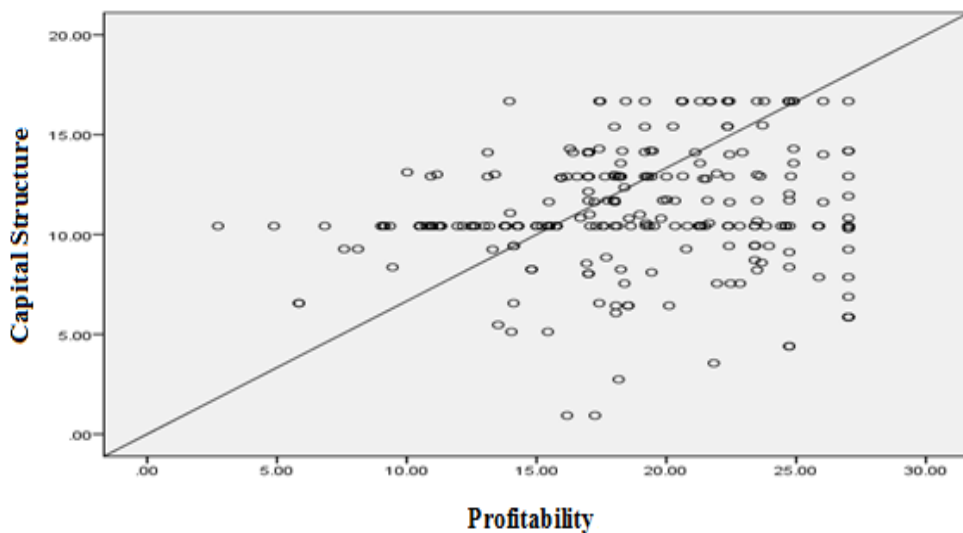
Figure 4.11: Scatter Plots of Profitability and Capital Structure

The regression model is as presented in Equation 4.7 below.

$$CAPSTR = \beta_0 + \beta_4\,PROF + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad \text{Equation (4.7)}$$

Where;
CAPSTR = Capital Structure
β_0= Constant term associated with the regression model,
β_4= Coefficient of independent variable, Profitability
ε= Error term associated with the regression model
PROF= Profitability, independent variable

The relationship between profitability and capital structure choice was examined by testing the fourth research hypothesis which stated that:

H_0: *There is no relationship between bank profitability and capital structure choice for commercial banks in Kenya.*

Using linear regression analysis, the study proceeded to determine the relationship between profitability and capital structure choice. A model summary Table 4.22 results comprising of the coefficient of correlation and the coefficient of determination, R^2 was generated. From the model summary table the coefficient of determination, R^2 for the model was 86.7% while the R value was 0.931. These values indicate that profitability greatly explains the variations in capital structure choice for commercial banks in Kenya with only 13.3% of the variations being explained by other variables not included in the model.

Table 4.22: Model Summary on Profitability and Capital Structure

Indicator	Value
R	0.931
R Square	0.867
Sig.	0.000

The study further examined the effect of profitability on capital structure choice for commercial banks operating in Kenya by generating ANOVA output results as shown in Table 4.23 to determine whether the regression model significantly predicts the outcome variable. The ANOVA results generated as indicated by F statistics equal to 202.083 is statistically significant because the p-value of 0.000 is less than 0.05 confidence interval. This implies that, statistically, the model applied significantly in predicting the capital structure choice for commercial banks in Kenya.

Table 4.23: ANOVA Statistics on Profitability and Capital Structure

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	2008.710	1	2008.710	202.083	.000[b]
1	Residual	308.142	31	9.94		
	Total	2316.852	32			

The study further generated Beta coefficients results as represented in Table 4.24 which shows that the relationship between capital structure choice and profitability is statistically significant given the p value equal to 0.000 is less than 0.05 confidence interval. The positive coefficient in profitability implies that component of capital structure for commercial banks in Kenya is determined by profitability and both move in the same direction. The positive beta implies that a 1 unit increase in profitability leads to 10.261 units increase in capital structure.

Table 4.24: Coefficients of Profitability and Capital Structure

Variable	B	Std. Error	T	Sig.
Constant	2.956	0.810	3.649	0.000
Profitability	10.261	4. 315	2.378	0.000

Figure 4.12 shows a histogram of standardized residuals. A visual examination of the histogram suggests a positive skewness of the standardized residuals. As indicated by the statistics at the legend, the residuals have a standard deviation of 1 and a mean of zero as of a standard normal distribution implying the model yields a normal distribution giving normally distributed values. The pattern shown below indicates no problems with the assumption that the residuals are normally distributed at each level of Y and constant in variance across levels of Y and hence the assumptions underlying the model used in this study have not been violated.
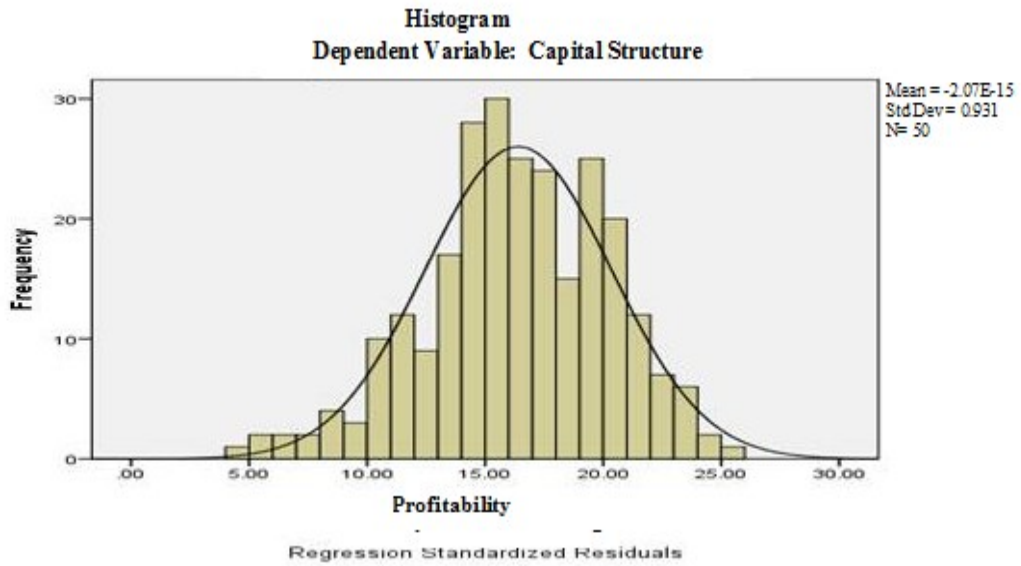
Figure 4.12: Histogram of Profitability and Capital Structure

Model Prediction

The study further evaluated the study model based on the results presented in Table 4.22 after establishing that there existed a relationship between profitability and capital structure choice. An $R^2 = 0.931$ implies that the profitability model explains 93.1 % of the variations of capital structure of commercial banks in Kenya. The fitted model is summarized in equation 4. 8 according to Table 4.24;

CAPSTR = 2.956 + 10.261PROF…….………………………….... (Equation 4.8)

The results from the research findings demonstrate that profitability affects capital structure choice for commercial banks in Kenya hence we fail to accept the research hypothesis that there is no relationship between profitability and capital structure choice for commercial banks in Kenya and conclude that there is a significant relationship between profitability and capital structure choice for commercial banks in Kenya.

The findings of this study are corroborated by a number of previous studies on capital structure in firms among them; the trade-off theory by Myers (1984) which posit that firms generally prefer debt for tax considerations. Profitable firms would, therefore, employ more debt because increased debt would increase the value of their debt tax shield. High debt levels attract high tax shields, implying a positive

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relationship between profitability and debt (Mazur, 2007). The study finds that more profitable firms use more debt as they have better ability to take on debt.

There are, however, a number of studies which disagree with the findings in this study among them; Murinde et al. (2004) who observe that retentions are the principal source of internal finance and hence profitable firms take less debt with Titman and Wessels (1988) and Barton et al. (1989) agreeing that firms with high profit rates, all things being equal, would maintain relatively lower debt-equity ratios since they are able to generate such funds from internal sources. The pecking order theory of Myers and Majluf (1984) predicts similar results of a negative association between debt-equity ratio and profitability because high profitable firms will be able to generate more funds through retained earnings and then have less debt.

Overall Model without Moderation Effect of Ownership Structure

The overall model without moderation effect of ownership structure is specified as follows;

$$CAPSTR = \beta_0 + \beta_1 CV + \beta_2 BS + \beta_3 VBE + \beta_4 PROF + \varepsilon \ldots\ldots\ldots(Equation\ 4.9)$$

Where;

CAPSTR = Capital Structure

CV= Collateral value of a bank assets,

BS = Size of a bank,

VBE= Volatility of a bank earnings,

PROF = Profitability of a bank, and

ε = Error term

The null hypothesis for the model is: H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

The overall model combines the effect of the firm specific variables on the capital structure choice for commercial banks in Kenya. To establish this, a multiple linear regression analysis was used to determine the effect that each independent variable had on the composition of capital structure choice on a joint model. The result in Table 4.25 shows that R Square was 0. 943. This implies that 94.3% of the variation in capital structure can be explained by the independent variables jointly, that is; collateral value of assets, bank size, volatility in earnings and profitability. Only a

mere 5.7% could not be explained by the variables used in this study which demonstrates a very good fit of the multiple data on the regression model given the higher R Square results than all the levels of individual variables.

Table 4.25: Correlation Coefficients of all Independent Variables

Model	R	R Square	Adjusted R Square	Sig.
1	0.971	0.943	0.938	0.000

The ANOVA results, as shown in Table 4.26 below for the full model is significant given that the p value equal to 0.000 is less than 0 .05 confidence interval. This implies that the null hypothesis $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ is rejected and the alternative hypothesis that at least one $\beta_j \neq 0$ is taken.

Table 4.26: ANOVA Statistics (Overall Regression)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2184.791	4	546.198	130.795	.000[b]
	Residual	132.061	28	4.716		
	Total	2316.852	32			

The study further generated Beta coefficients results as represented in Table 4.27 , the remodelled regression equation is:

CAPSTR= 2.368 + 3.279CV + 2.568BS – 1.447VBE + 3.867PROF… (Eq. 4.10)

The results show the relationship between collateral value of assets, bank size, volatility in bank earnings and profitability is statistically significant given the p value equal to 0.000, 0.000 , 0.000 and 0.000 are less than 0.05 confidence interval. The positive coefficient on collateral value of assets, bank size and profitability implies that component of capital structure choice for commercial banks in Kenya are determined largely by these variables and that these variables move in the same

direction with capital structure choice. 1 unit change in collateral value of assets, bank size and profitability leads to an increase in capital structure choice components equal to $B_1 = 2.368$, $B_2 = 3.279$, $B_3 = -1.447$ and $B_4 = 3.867$ units respectively. The negative beta on volatility of earnings equal to 1.447 implies that volatility in earnings move in the opposite direction with capital structure choice with a 1 unit increase in volatility leading to 1.447 units decrease in capital structure choice.

Table 4.27: Coefficients of Joint Model (Overall)

	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
(Constant)	2.368	0.505	4.689	.000
Collateral Value	3.279	1.176	2.788	.000
Bank Size	2.568	0.898	2.859	.000
Volatility	-1.447	0.334	-4.332	.000
Profitability	3.867	0.586	6.599	.000

The findings of this study are corroborated by a number of previous studies on capital structure in firms among them; Esperanca and Mohamed (2003) who argue that firms which possess assets that can be used as collateral have the opportunity to issue cheaper and secure debts and should consequently have more debts in their capital structure. Hovakimian, Opler and Titman (2001) also find a positive relationship between collateral value of assets and debt-equity ratio and that firms having larger fraction of fixed assets tend to have higher debt financing as they can use their fixed assets as collateral for the underlying risk associated with borrowing. Myers and Majluf (1984) find that firms with assets that can be used as collateral may be expected to issue more debt to take advantage of this opportunity which is no different from a study conducted by Booth, Aivazian, Demirguc-Kunt and

Maksmivoc (2001) arguing that the more tangible assets a firm have, the higher the long-term debt ratio but the smaller the total debt-equity ratio. Studies by Bevan and Danbolt (2004) find collateral value of assets to be positively related to both short and long-term debt. These studies confirm the results in this study that the higher the collateral value of assets a bank has, the higher the debt to equity ratio for banks.

Shah and Hijazi (2004) find that larger firms employ more debt because they have more strength to absorb the risk of bankruptcy while smaller firms take less debt because of their fear to become bankrupt. Prasad, Green and Murinde (2001) further posit that larger firms face lower unit costs of bankruptcy than smaller firms hence they are more indebted which was agreed by Huang and Song (2005) who find that larger firms have more access to funds and less chances of default and hence enjoy more borrowings as compared to smaller firms. Modoulge (2009) posits that small firms have restricted access to capital markets compared to larger firms with studies by Warner (1977) and Ang, Chua, and McConnell (1982) arguing that large firms have more diversified sources which is consistent with the view that larger firms are better diversified and less likely to breach their target debt-equity ratio. Firm size therefore is an inverse proxy of the probability of bankruptcy and hence, larger firms have higher debt capacity and may borrow more to maximize their tax benefits.

Olayinka (2011) examined the variables of capital structure of 66 firms listed on the Nigerian Stock Exchange and found that debt-equity ratio is positively related to the size of the firm which is consistent with the findings of Mao (2003), and Flannery and Rangan (2006) conclude that the size of the firm is positively related to debt-equity ratio in all. Cassar and Holmes (2003), Esperanca et al. (2003) and Hall, Hutchinson and Michaelas (2004) also find a positive association between firm size and long-term debt ratio. Myers (2001) find that earnings volatility is negatively correlated with debt-equity ratio given that underinvestment problem increases with the volatility of the firm's cash flow. The findings are in line with both trade-off theory and the pecking order theory which posit that a negative relationship exists between earnings volatility and debt-equity ratio where firms with high earnings volatility carry a risk and therefore should have lower debt capital.

Consistent with this study, Titman and Wessels (1988) find a negative relationship between risk and leverage. The study suggests that firms experiencing high volatility in earnings would tend to have low debt-equity ratios to avoid the risk of bankruptcy. Flannery and Rangan (2008) concur with the findings in this study by showing that bank earnings volatility is not positively related to the excess of book capital over required capital (the cushion), inconsistent with the view that the cushion is chosen to protect the bank against the risk of poor outcomes that would breach the regulatory capital requirement. The conventional wisdom that firms with high volatility of earnings should borrow less is, however, not supported by all reported evidence. Ang and Peterson (1986) and Titman and Wessels (1988) find that the role of an effective tax rate on debt-equity ratio determination is not statistically significant in any country and argue that this observation may be caused by the lack of variation in the rate of corporate tax across firms.

Consistent with the prediction of the trade-off theory and the findings of Leary and Roberts (2005), firms with higher non-debt tax shields borrow less. Myers (1984) posits that firms generally prefer debt for tax considerations. Profitable firms would, therefore, employ more debt because increased debt would increase the value of their debt tax shield. High debt levels attract high tax shields, implying a positive relationship between profitability and debt (Mazur, 2007). Further findings by Cheng and Shui (2007) are also in agreement with this study that more profitable firms use more debt as they have better ability to take on debt. There are, however, a number of studies which disagree with the findings in this study among them; Murinde et al. (2004) who observe that retentions are the principal source of internal finance and hence profitable firms take less debt with Titman and Wessels (1988) and Barton et al. (1989) agreeing that firms with high profit rates, all things being equal, would maintain relatively lower debt-equity ratios since they are able to generate such funds from internal sources. The pecking order theory of Myers and Majluf (1984) predicts similar results of a negative association between debt-equity ratio and profitability because high profitable firms will be able to generate more funds through retained earnings and then have less debt.

Moderating Effect of Ownership Structure

The relationship between bank ownership structure and the capital structure choice was examined by testing the fifth research hypothesis which stated that;

H_0: There is no significant moderating effect of ownership on relationship between collateral value of bank assets, bank size, volatility of earnings and profitability and capital structure choice for commercial banks in Kenya.

The overall measurement model is specified as follows;

CAPSTR= $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4) Z + \varepsilon$ …………….... (Equation 4.11)

Where:

X_1 = Collateral Value (CV)
X_2 = Bank Size (BS)
X_3 = Volatility of Bank Earnings (VBE)
X_4 = Profitability (PROF)
Z = Ownership: If local ownership= (1) otherwise = (0)
ε = Error term

The null hypothesis for the model is: H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

The study generated the ANOVA statistics shown in Table 4.28 below. The results show that the overall model was significant given that the p value equal to 0.000 is less than 0.05 confidence interval. This implies that the null hypothesis $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ is rejected and the alternative hypothesis that at least one $\beta_j \neq 0$ is taken.

Table 4.28: ANOVA Statistics on the Overall Model

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	53.529	1	53.529	6.031	.000
1	Residual	22. 634	5	4.527		
	Total	76.163	6			

To test the moderation effect of ownership structure on the variables studied, a joint model was regressed with the moderating effect to generate the changes as a result of the moderator and generated results are as shown in Table 4.29.The study results indicated ownership has a positive and significant moderating effect as the p value equal to 0.000 was less than 0.05 confidence interval. The results also show that R Square was equal to 0.675. This implies that 67.5% of the variation in capital structure can be explained by the independent variables jointly, that is; collateral value of assets, bank size, volatility in earnings and profitability. Only 32.5% could not be explained by the variables used in this study which demonstrates a very good fit of the multiple data on the regression model given the higher R Square results.

The generated Beta coefficients presented in Table 4.29 show the relationship between collateral value of assets, bank size, volatility in bank earnings and profitability. The Betas equal to β_1= 2.324, β_2 = 4.685, β_3 = -2.357 and β_4 = 2.449 were statistically significant given the p value equal to 0.025, 0.000, 0.002, 0.005, and 0.000 are less than 0.05 confidence interval. The positive coefficient on collateral value, bank size and profitability implies that component of capital structure choice for commercial banks in Kenya are determined largely by these variables and that these variables move in the same direction with capital structure choice. Indeed, 1 unit change in collateral value, bank size and profitability leads to an increase in capital structure choice equal to β_1= 2.324, β_2 = 4.685, and β_4 = 2.449 units respectively. The negative beta on volatility of earnings equal to 2.357 implies that volatility in earnings move in the opposite direction with capital structure components with a 1 unit increase in volatility leading to 2.357 units decrease in capital structure choice.

Table 4.29: Coefficients of Determination after Moderation

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	6.443	2.785	2.313	0.005
Collateral Value*Z	7.256	3.834	1.893	0.000
Bank Size*Z	2.855	1.306	2.186	0.005
Volatility*Z	-3.252	1.236	-2.631	0.000
Profitability*Z	5.254	2.456	2.139	0.000
R^2	0.786			
Adjusted R^2	0.765			

The remodeled regression equation with moderation is;

CAPSTR= 3.221 +2.324 CV + 4.685BS − 2.357VBE + 2.449PROF…. (Eq. 4.12)

The remodeled regression equation before moderation (Equation 4.10) was;

CAPSTR= 2.368 + 3.279CV + 2.568BS − 1.447VBE + 3.867PROF

Examination of these two models indicates that ownership structure has moderating effect on the capital structure choice for commercial banks operating in Kenya. R^2 before moderation was 0.943 (Table 4.29) and after moderation R^2 is 0.786 (Table 4.29) resulting to a change of $R^2 = 0.187$ indicating a change of relationship arising from the moderating effect of ownership structure. In addition, the model constant increased from 2.368 to 3.221, Beta coefficients for collateral value of assets changed from 3.279 to 2.324, for bank size from 2.568 to 4.685, for volatility in bank earnings from -1.447 to -2.357 and for profitability from 3.867 to 2.449.

The findings from this study demonstrate that ownership structure affects capital structure choice for commercial banks in Kenya hence we fail to accept the research

hypothesis that there is no significant moderating effect of ownership on relationship between collateral value of bank assets, bank size, volatility of earnings and profitability and capital structure choice for commercial banks in Kenya and conclude that there is a significant moderating effect of ownership on relationship between collateral value of bank assets, bank size, volatility of earnings and profitability and capital structure choice for commercial banks in Kenya.

The findings of this study are consistent with the theoretical literature on ownership and capital structure which predicts either higher or lower levels of debt-equity ratio depending on the managers' risk aversion, the costs of monitoring and bankruptcy, the threat of takeovers, and the growth opportunities of the firm (Thomsen, Pedersen & Kvist, 2006). Foreign shareholders are endowed with good monitoring capabilities, but their financial focus and emphasis on liquidity results in them unwilling to commit to a long-term relationship with the firm and to engage in a process of restructuring in case of poor performance. Foreign shareholders prefer strategies of exit rather than voice to monitor management (Aguilera & Jackson, 2003). Foreign ownership is postulated to have a moderate impact on firm's capital structure choice, and tend to favour low debt-equity mix.

Local owners possess characteristics that represent the worst of both worlds. According to Claessens, Djankov and Lang (2000), and Dharwadkar, George and Brandes (2000) their financial focus leads to short-term behaviour and a preference for liquid stocks while their domestic affiliation often results in a complex web of business relationship with the firm and other domestic shareholders. Local ownership's moderating effect would lead to either higher or lower levels of debt-equity ratio depending on the bank manager's risk aversion, the costs of monitoring and bankruptcy, the threat of takeovers, and the growth opportunities of the firm (Thomsen, Pedersen & Kvist, 2006).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study sought to establish and indeed established the factors influencing capital structure choice for commercial banks in Kenya. Among the variables studied includes; collateral value of assets, volatility of earnings, bank size, profitability and ownership. A summary of the study findings, conclusions, relevant recommendations as well as suggestions for further studies are documented to fill the existing gap in this field of study. The conclusions are well aligned to the specific objectives outlined in this study.

5.2. Summary of Findings

The study findings anchored on the specific objectives are well stipulated in this section. This study found that collateral value of assets, volatility of earnings, bank size, profitability and ownership influence capital structure choice of commercial banks in Kenya. While every factor studied portrayed significant effect on the capital structure, a joint effect of the variables indicated significant effect on the capital structure to a greater extent. Moderating effect of ownership revealed either higher or lower levels of debt-equity ratio depending on the bank managers' risk aversion, the costs of monitoring and bankruptcy, the threat of takeovers, and the growth opportunities of the bank.

5.2.1 Collateral Value of Assets and Capital Structure Choice

This objective was built on the hypothesized statement that 'There is no relationship between collateral value of bank assets and capital structure choice for commercial banks in Kenya.' The study findings rejected the null hypothesis and established that capital structure choice for commercial banks in Kenya was significantly influenced by collateral value of assets positively. The findings imply that collateral value of bank assets explains great percentage of the variations of capital structure choice among commercial banks in Kenya. The regression model fitted in this study to

establish the relationship between collateral value and capital structure, statistically predicted the capital structure composition significantly well.

5.2.2. Bank Size and Capital Structure Choice

This objective was built on the hypothesized statement that 'There is no relationship between bank size and capital structure choice for commercial banks in Kenya.' The study findings rejected the null hypothesis and established that capital structure choice for commercial banks in Kenya was significantly influenced by bank size positively. The regression model fitted in this study to establish the relationship between bank size and capital structure choice, statistically, predicted the capital structure composition significantly well.

5.2.3. Volatility of Bank Earnings and Capital Structure Choice

This objective was built on the hypothesized statement that 'There is no relationship between bank earnings volatility and capital structure choice for commercial banks in Kenya.' The study findings rejected the null hypothesis and established that capital structure choice for commercial banks in Kenya was significantly influenced by bank earnings volatility positively. The regression model fitted in this study to establish the relationship between volatility of bank earnings and capital structure choice, statistically, predicted the capital structure composition significantly well.

5.2.4. Profitability and Capital Structure Choice

This objective was built on the hypothesized statement that 'There is no relationship between profitability and capital structure choice for commercial banks in Kenya'. The study findings rejected the null hypothesis and established that capital structure choice for commercial banks in Kenya was significantly influenced by profitability positively. The regression model fitted in this study to establish the relationship between profitability and capital structure choice, statistically, predicted the capital structure composition significantly well.

5.2.5 Ownership and Capital Structure Choice

This objective was built on the hypothesized statement that 'There is no moderating effect of ownership on the relationship between collateral value of bank assets, size

of the bank, earnings volatility, profitability and capital structure choice for commercial banks in Kenya'. The study findings rejected the null hypothesis and established that ownership significantly moderated the relationship between collateral value of assets, size of the bank, earnings volatility, profitability and capital structure choice for commercial banks in Kenya. Further, the examination of the two models one before and the other after moderation indicates that ownership structure has moderating effect on the capital structure choice for commercial banks operating in Kenya.

5.3 Conclusion

Based on the findings, this study concludes that capital structure in commercial banks remains a key driver in the banking business in Kenya given that the economy depends on the banking sector for financing. The correct application of capital structure theory and compliance with regulations will decrease the risk profile among banks in Kenya and in turn result in a more stable monetary system to lubricate the economy. Adequate capital levels enable commercial banks to pursue capital investment strategic growth measures among them regional expansion, robust IT platforms to drive innovative products that improve efficiency and effectiveness in bank operations generating lower cost to income ratio suitable for increasing the investors' returns. To overcome stiff competition a cost effective mix of capital is an important decision to sustain bank operations into the future. With globalization, commercial banks are susceptible to financial crisis hence above sufficient capital adequacy levels will remain important to safeguard the banks against such external shocks. This is only attainable given an appropriate mix of debt to equity by the bank management.

Management of commercial banks need to employ a robust strategy to grow core capital in line with regulatory requirements to remain in business without sanctions. Alignment of core capital structure in line with Basel III Accord will further enable banks remain afloat even during period of stress. Capital structure further builds strong financial muscles buoyed enabling the banks to tap into emerging opportunities, mergers and acquisition, as well as attracting high net worth

individuals and frontier markets requiring massive capital injections which is a preserve for the well capitalized banks.

Commercial banks in Kenya need to pursue big bank strategy. The larger the bank the greater the uptake of debt given that large banks have more collateral assets indicating the ability to repay their debt commitments as and when they are due. Big means a bank has more assets to keep it afloat in case it gets into trouble, all else equal, and therefore a loan to a big bank is more likely to be repaid than a loan to a small bank. Increasing bank size further increases bank profitability as the bank is able to realize economies of scale. For example, increasing size allows banks to spread fixed costs over a greater asset base, thereby reducing their average costs. Increasing banks' asset size can also reduce risk by diversifying operations across product lines, sectors, and regions. Big banks have lower risk which is able to promote profitability directly by reducing losses or indirectly by making liability holders willing to accept lower returns, thereby reducing banks' funding cost. The big banks are able to obtain a larger share of their income in the form of non-interest income such as trading income and fees. Commercial banks in Kenya need to lay strategies towards becoming big banks through consolidation, mergers and acquisition as well as organic growth to take advantage of big ticket businesses without necessarily taking advantage of the too big to fail advantage that can end up causing systemic crisis.

Volatility of earnings has been found to have a negative relationship with capital structure choice in that shareholders are better off if a firm maintains smooth cash flows which greatly enable commercial banks to reduce reliance on costly external finance. Earnings volatility is costly as it affects a firm's investment policy by raising external capital. Firms with smoother earnings should be more highly valued and hence attract funding competitively. Commercial banks with high earnings volatility are susceptible to negative earnings surprises keeping away competitively priced funding and therefore increasing firm's borrowing costs. Firms with greater earnings smoothing have a lower cost of capital even after accounting for cash flow volatility. Highly volatile firms are also unable to attract institutional investors given the risk of loss of value to their investors.

Profitability was found to have a positive correlation with capital structure. Commercial banks need to devise effective strategies to maximize profits given that highly profitable banks are able to attract variety of capital sources both internally from accumulated retained earnings as well as statutory reserves as well as external sources like debts. Highly profitable banks are able to crowd in various forms of investors like debt providers at competitive prices. For low profitable firms, investors lose confidence on their earnings and may withdraw their investments while profitable banks attract long term and possibly convertible debts critical in any capital structure. Cost minimization through proper utilization of available resources, adherence to budget vote heads, innovation driven by technology to enhance efficiency, management of cost of deposits as well as quality loan book management driven by performance management will enable banks grow the profits making raising of capital favourable.

This study found that ownership has a moderating effect on capital structure choice which could either point to higher or lower levels of debt-equity ratio depending on the bank manager's risk aversion, the costs of monitoring and bankruptcy, the threat of takeovers, and the growth opportunities of the bank. Both local and foreign shareholders have a high regard for debt in their capital structure choice given that a positive correlation exists between ownership and capital structure choice. Shareholders see debts to possibly serve as active monitors that reduce the scope of managerial opportunism resulting in lower direct agency conflicts between management and shareholders. Debt policy is used by such shareholders as an internal control mechanism to lower agency conflicts between managers and shareholders given instances of presence of free cash flow. Managerial share-ownership may reduce managerial incentives to consume perquisites, expropriate shareholders' wealth and to engage in other non-maximising behaviour and thus helps in aligning the interests of management with those of the shareholders. In short term, raising equity is generally seen to be costly while creating dilution costs for existing shareholders and imposes floatation costs. In some instances, new shares might be sold at a discount if the issuance is interpreted as a bad signal of the bank's prospects hence turning for debts. Firms with higher external block-holding however have a lower appetite for debt because large debt increases the risks of bankruptcy

which could be as a result of control of operations model different from the locally owned banks.

5.4. Recommendations

Based on the findings, this study recommends that commercial banks' management need to instill high level of confidence in the minds of the depositors to ensure continued banking business. This will also help overcome the potential challenges of panic withdrawals resulting to bank runs which may lead to contagion effect. Commercial banks' management need to employ capital growth strategies to enhance their capital conservation buffer that require banks to build up extra buffers outside periods of stress. Bank managers need to deploy efficiency-led strategies to enable them implement cost management approaches measured by the ratio of cost to income which will give rise to greater profitability of the banks.

Management of commercial banks need to constantly review their loan growth strategies continuously taking into consideration the market dynamics affecting their capital structure. Financial innovations can be deployed anchored on modern technology to deliver efficiency in loan appraisal, disbursement, monitoring and repayment. Loan product features need to be customized specifically for different target clients. Further, quality of the assets on bank balance sheet; that is, poor credit quality has a negative effect on bank profitability and hence credit risk management practices are important to avert potential possibilities of Non-Performing Loans growth which may result to annual loss on assets through provisions made towards bad debts and doubtful debts.

Banks need to employ effective assets and liabilities management system to reduce the chances of non-compliance of assets and liabilities which in turn would raise bank returns. This also leads to a perfect balance between liquidity and profitability. To mitigate volatility in earnings, the banks need to ring fence their customers from competitors like Fintechs, Saccos, MFIs, peer banks and those who are encroaching their business territories. Cross selling and upselling using technology platforms like customer relationship management (CRM) will further enable the banks increase

their customers' wallet size, increase product uptake as well as sell new and substitute products.

On the deposit front, commercial banks require to mobilize cheap deposits from both individual as well as corporate customers by leveraging on technology. The use of technology like mobile banking, agency banking, deposits taking ATMs as well as internet banking thus facilitating customers to access banking services as and when they need them. Rolling out innovative deposit products among them unit trusts and government securities like T-bills and bonds will help banks net additional deposits. Given the risk of insolvency arising from spiralling debts in banks, commercial banks need to rally their shareholders to inject additional core capital. Strategic drivers among them bonus issue and rights issue will enable equity investors put in additional capital allowing more growth capacities in the bank. The banks as well as the regulator need to implement policies on compulsory statutory transfer to general reserves which will see commercial banks go through a dividend dry spell to allow ploughing back part of their profits for future investments.

For some banks in Kenya weighing heavily on debts due to inability to attract deposits as well as equity investors, bank management need to explore the possibilities of mergers and acquisition in order to meet the capital requirements. With the recent capping of interest rate regulations and the risk of insolvency facing tier III banks in Kenya, consolidation through mergers and acquisition can offer a great rescue plan. For the banks, ownership structure and corporate governance structure influence performance to a great extent. Banks with more stringent and value based owners will likely have better profitability than mutual, co-operative or state-owned banks. Bank supervisors are unable to control the complex risks of banks directly, thus their supervision focus on ratios and minimum capital requirements mostly obtained from the balance sheet. Central banks need to re-look at their risk supervision approach to include risk based supervision driven by technology. The asset liability management in commercial banks need to be innovative on offshore based loan products to beef up their capital given some are less costly yet lend at competitive margins thus driving bank growth. Possibilities of

debt mix riding on short term, long term as well as convertible debts will be useful to banks. This will further enable banks to enjoy tax benefits through tax shield effect.

Bond markets in Kenya have also attracted high appetite for customers with excess liquidity given the assured returns and tax benefits. Diversification strategy in banks will also enable banks' management shield the banks from concentration risk which affects profitability. Bank management need to make strategic decisions on periodic basis to safeguard the banks against exposure from industry risks. This can be achieved through regular research from the think tanks in the bank as well as researchers advising on strategy sustainability as well as new market frontiers.

5.4.1 Contribution to Theory and Literature

Contribution of the current study would include the addition to knowledge of business administration and finance. The exploration of the linkage between collateral value of assets, size of the bank, earnings volatility, profitability and capital structure choice in commercial banks particularly in developing countries provides not only significant contribution to the business administration and finance literature but also enables managers to employ the right factors for their banks to compete in the fast changing environment. In this context, pecking order theory and agency theory widely used in theoretical frameworks in the management literature, remains outstanding because of how they focus on the internal forces of the bank and internal strengths and weaknesses to enhance competitive advantage by employing the right factors.

Another major contribution is the introduction of critical element of ownership in the relationship between collateral value of assets, size of the bank, earnings volatility, profitability and capital structure choice in commercial banks. This thesis contributed to the knowledge by investigating the moderating effect of ownership as an environmental variable in order to analyse the reactions of commercial banks in their choice of capital structure when the environment is intense. Despite the known fact that external environment impacts on capital structure choice and the need to have a fit between the collateral value of assets, size of the bank, earnings volatility, profitability and the environment, there had been a gap in the empirical knowledge in

literature. Therefore, the findings of this study have contributed to filling this knowledge gap.

The study generally aimed to fill the gap in the literature by empirically examining the factors which may influence the capital structure choices of commercial banks in Kenya. In a specific way this study aims to achieve the following objective: To examine the factors influencing capital structure of commercial banks in Kenya. For this purpose, firm-specific factors or determinants, including collateral value of bank assets, bank size, volatility of earnings and profitability are tested to see their relationship with different measurements of capital structure. The study findings have shown that collateral value of bank assets, bank size, volatility of earnings and profitability influence capital structure choice of commercial banks in Kenya and the results taken from this study can generalize the capital structure behaviour of all commercial banks especially for the Kenyan banking industry.

5.4.2 Recommendations for Policy

The underlying assumption of pecking order theory and agency theory as used in this study is that collateral value of assets, size of the bank, earnings volatility, and profitability when used exclusively, they influence bank's competitiveness and thus banks must make capital structure choice by considering either collateral value of assets, size of the bank, earnings volatility, profitability. The findings of this study equally revealed that collateral value of assets, size of the bank, earnings volatility, or profitability influenced capital structure choice in commercial banks in Kenya. The study also found out that ownership had significant moderating effect on the relationship between collateral value of assets, size of the bank, earnings volatility, profitability and capital structure choice in commercial banks in Kenya. The study recommends that policy managers of these commercial banks pay careful consideration to aligning collateral value of assets, size of the bank, earnings volatility, profitability and in consideration with the ownership as one of the environmental variables so as to remain competitive in this ever changing business global world.

5.5 Areas for Further Research

In this study, the research focused on the effect of collateral value of assets, size of the bank, earnings volatility, and profitability on capital structure choice of commercial banks in Kenya. A replica of this study can be carried out with a further scope to include other commercial banks and see whether the findings hold true. Future studies should apply different research instruments like interview guide, focus group discussions to involve respondents in discussions in order to generate detailed information which would help in bringing out better strategies for performance of commercial banks in Kenya. Conceptual model of this study can also be extended by considering other aspects of external environmental factors since the current study limited itself to ownership as the moderating variable. The finding of this study on the moderating effect of ownership on the relationship between collateral value of assets, size of bank, earnings volatility, profitability and capital structure choice in commercial banks showed significant moderating effect. Future research may replicate this variable in similar study to find out whether the finding is different from the current results.

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