

**LEVERAGE, LIQUIDITY AND PROFITABILITY OF BANKS  
AND INSURANCE FIRMS LISTED AT THE NAIROBI  
SECURITIES EXCHANGE**

**BY**

**OPUODHO DOROTHY OTUNGE**

**D61/73025/2014**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL  
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF  
THE DEGREE OF MASTERS OF BUSINESS ADMINISTRATION,  
UNIVERSITY OF NAIROBI**

**NOVEMBER 2017**

## DECLARATION

This Research project is my own work and has not been submitted to the University of Nairobi or any other institution of higher learning.

Signed.....Date.....

DOROTHY OTUNGE OPUODHO

REG NO: D61/73025/2014

This Research project is submitted for examination purpose with my approval as the University Supervisor.

Signed.....Date.....

DR. NIXON OMORO

Lecturer, Department of Finance & Accounting

School of Business, University of Nairobi

## **ACKNOWLEDGEMENT**

I give special thanks to Dr. Nixon Omoro for his invaluable guidance from the time of commencement of this work to completion. His suggestions and comments were also very useful.

My sincere gratitude and appreciation goes to Dr. Luther Otieno for his immense contribution to this study. His input has enabled this work to be what it is.

I thank Dr. Sifunjo Kisaka for his useful comments.

I thank God for having seen me go through the program.

## **DEDICATION**

I dedicate this research work to my parents for their encouragement and support that have seen me reach this far. Your invaluable advice was quite helpful.

To friends who encouraged me to soldier on and do the work to completion I say a big thank you.

Thanks to all of you for your inspiration.

## ABSTRACT

Banks and Insurance firms keep the finances of other firms and investors. When these firms engage in leverage activities, the result is felt by other firms and their liquidity levels affect both their performances and those of other investors. The study sought to establish the relationship between leverage and liquidity on profitability and determine the effect of leverage and liquidity on profitability of Banks and Insurance firms listed at the Nairobi Securities Exchange. A census study was done on all the seventeen Banks and Insurance firms listed at the NSE for a six year period beginning the year 2010 to the year 2015. Secondary data was collected from NSE handbooks and individual firms published financial statements for the respective years. Data was analyzed using correlation analysis and General linear models including ANOVA and regression analysis. Profitability was measured by two variables: ROA and ROE, Leverage was measured by use of leverage ratio while Liquidity was measured using liquidity ratio. Pearson correlation was applied to establish the relationship among variables. T-test was employed to determine the significance levels of the coefficient terms for each of the regressions while F-test was carried out at 95% confidence level to determine significance of regressions. R-square coefficient was used to measure the extent to which predictor variables explained the response variable. Durbin Watson statistic was conducted to find out whether there was autocorrelation among variables and analysis done with SPSS software. Findings show that a positive relationship exists between leverage and profitability expressed in terms of ROA while a negative insignificant relationship exists between leverage and profitability expressed in terms of ROE. Liquidity showed a negative relation with profitability when expressed in terms of ROA whereas a positive insignificant relationship exists between liquidity and profitability expressed in terms of ROE. When leverage and liquidity variables are combined, leverage effects are felt more than liquidity on profitability measured in terms of ROA whereas insignificant effects are observed in profitability measured in terms of ROE. The study recommends that managers need to gauge the appropriate leverage and liquidity levels to use for firms given their unique circumstances.

## TABLE OF CONTENTS

<b>DECLARATION...</b>	<b>ii</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>iii</b>
<b>DEDICATION.....</b>	<b>iv</b>
<b>ABSTRACT.....</b>	<b>v</b>
<b>LIST OF TABLES.....</b>	<b>ix</b>
<b>LIST OF FIGURES.....</b>	<b>ix</b>
<b>ABBREVIATIONS AND ACRONYMS.....</b>	<b>x</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.1 Background to the Study .....	1
1.1.1 The Concept of Leverage .....	2
1.1.2 The Concept of Liquidity .....	3
1.1.3 The Concept of Profitability.....	4
1.1.4 Leverage, Liquidity and Profitability.....	4
1.1.5 Financial Firms Listed at the NSE.....	5
1.2 The Research Problem.....	6
1.3 Research Objectives .....	8
1.4 Value of Study .....	9
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>10</b>
2.1 Introduction.....	10
2.2 Theoretical Review .....	10
2.2.1 Modigliani and Miller Theorem .....	10
2.2.2 Trade-Off Theory.....	11
2.2.3 Pecking Order Theory – Leverage and Liquidity.....	12

2.2.4 Market Timing Theory.....	13
2.2.5 Liquidity Preference Theory .....	14
2.2.6 Risk-Return Theory .....	15
2.3 Determinants of Profitability .....	15
2.4 Empirical Studies .....	16
2.5 The Conceptual Framework .....	20
2.6 Summary of Literature Review.....	21
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>22</b>
3.1 Introduction.....	22
3.2 Research Design.....	22
3.3 Population.....	22
3.4 Data Collection .....	23
3.5 Data Analysis .....	23
<b>CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION.....</b>	<b>25</b>
4.1 Introduction.....	25
4.2 Summary of Descriptive Statistics .....	25
4.3 Summary of Demographic effects .....	26
4.4 Relationship between Leverage and Profitability of Banks and Insurance firms listed at the NSE .....	27
4.5 Relationship between Liquidity and Profitability of Banks and Insurance firms listed at the NSE .....	33

4.6 The Effect of Leverage and Liquidity on Profitability of Banks and Insurance firms listed at the NSE. ....	38
4.7 Discussion.....	42
<b>CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>46</b>
5.1 Introduction.....	46
5.2 Summary.....	46
5.3 Conclusion .....	48
5.4 Recommendations for Policies and Practice.....	49
5.5 Limitations to the Study .....	51
5.6 Suggestions for further Research .....	51
<b>REFERENCES .....</b>	<b>53</b>
<b>APPENDIX I: Banks and Insurance Firms Listed at the Nairobi Securities Exchange .....</b>	<b>59</b>
<b>APPENDIX II: Secondary Data Capture Form (Columns as used in excel sheet) .....</b>	<b>60</b>

## LIST OF TABLES

Table 4.1: Descriptive Statistics.....	26
Table 4.2: Correlation: ROA, ROE, Leverage Ratio.....	27
Table 4.3: Regression Analysis: ROA versus Leverage Ratio.....	28
Table 4.4: Regression Analysis: ROE versus Leverage Ratio.....	31
Table 4.5: Correlation: ROA, ROE, Liquidity Ratio.....	33
Table 4.6: ROA versus Liquidity Ratio.....	34
Table 4.7: ROE versus Liquidity Ratio.....	37
Table 4.8: Regression Analysis: ROA versus Leverage Ratio, Liquidity Ratio.....	38
Table 4.9: Regression Analysis: ROE versus Leverage Ratio, Liquidity Ratio.....	41

## LIST OF FIGURES

Figure 4.1: Graph of Leverage Ratio plotted against ROA.....	30
Figure 4.2: Graph of Leverage Ratio plotted against ROE.....	33
Figure 4.3: Graph of Liquidity Ratio plotted against ROA.....	36
Figure 4.4: Scatter diagram showing effects of Liquidity Ratio and Leverage Ratio on ROA.....	40

## **ABBREVIATIONS AND ACRONYMS**

<b>IRA</b>	–	Insurance Regulatory Agency
<b>NSE</b>	–	Nairobi Securities Exchange
<b>CMA</b>	–	Capital Markets Authority
<b>ROE</b>	–	Return on Equity
<b>ROA</b>	–	Return on Asset
<b>NPLs</b>	–	Non-Performing Loans
<b>CEO</b>	–	Chief Executive Officer
<b>NSE i</b>	–	National Stock Exchange Of India
<b>ANOVA</b>	–	Analysis Of Variance

# CHAPTER ONE: INTRODUCTION

## 1.1 Background to the Study

Financial firms obtain leverage in order to purchase assets. Firms shift risks to financial intermediaries due to debt when prices of assets increase, this reduces their liquidity and debt servicing capacity and with high leverage economic activity is heightened, when there is low leverage there is less economic activity. (Geanakoplos, 2010). Liquidity of assets is affected by the entrenchment of leverage and how severe there is asset shock. Adrian and Shin (2010) posit that liquidity is the rate of growth of aggregate balance sheets and leverage reduces when financial firms have surplus capital. Tarus, Chenuos and Biwott (2014) observe that capital structure influence profitability thus affecting firm's return on investment. They note that leverage distribution is endogenous to future expectations. Liquidity is connected to firm's operational requirements. Low liquidity exposes firms to bankruptcy threats thus affecting profitability, whereas surplus liquidity portrays presence of idle funds not put into use to enhance profitability. Kahraman and Tookes (2014) state that when hedge funds and other financial firms do intermediaries role and supply liquid assets to markets, their ability to get leverage influences their liquidity supply. They show that decline in use of leverage reduces both liquidity and profitability.

A firm needs to choose its debt- equity mix and leverage to attain desired financing. Modigliani and Miller (1958, 1961, and 1963) propose that a firm can mix its debt and equity to achieve desired value. They use pie model that views taxes and bankruptcy costs as claims on cash of the firm, thus ignoring tax relevance to firm value. Trade off theory emerged due to debate on Modigliani and Miller theory because of taxes. Tax was added to the irrelevance proposition (Modigliani and

Miller, 1963) bringing about tax benefit for debt. The theory posits that leverage has benefits in a capital structure to a certain level beyond which bankruptcy occurs. Risk return theory explains how leveraged finance entails the possibility that if costs of borrowing could be more than returns from investment then realization of losses could occur and profits would be earned if returns are more than costs of borrowing. This study focuses on the risk return theory.

Financial firms in Kenya hold non- performing loans exposing them to credit and leverage risks (Wangai, Bosire & Gathogo 2012). Non- performing loans reduce profitability of these institutions. Onuonga (2014) observes that bank profitability is declining as profits before tax (PBT) is below 20% on average since size of bank, capital base, ownership, operating expenses and expansion influence bank profitability. Insurance industry in Kenya contributes a percentage of 2.08% to gross domestic product (Mwangi and Murigu, 2015). They advise that insurers in Kenya need to increase leverage and equity capital to perform better. Financial firms face credit risk due to leverage and their liquidity is affected by difficulty to get borrowers.

### **1.1.1The Concept of Leverage**

Adrian and Shin (2010) defined leverage as the ratio of total assets to equity saying that it relates inversely to total assets. Adongo (2012) said that leverage is the use of a fairly little investment or less debt to make profits. Geaneakoplos (2010) says leverage is the ratio of the asset value to cash needed to acquire it. This study defines leverage as the ratio of core capital to resources supplied by the owner then measures leverage as a ratio calculated by tier one capital to adjusted assets.

Leverage comprises of borrowed money used for acquisition of assets. Where the ratio of equity capital to debt capital in a company's capital structure is big there is

conservative financing. Adrian and Shin (2010) said leverage is high when total assets are many. There are three types of leverage as follows; balance sheet leverage based on balance sheet concepts, economic leverage based on market dependent future cash flows and embedded leverage based on market risk. The most recognized leverage is the balance sheet leverage that occurs when a firm's assets exceed its equity base. A firm with debt pays interest as a liability. When the balance sheet side of asset is unchanged, more debt reduces equity.

High leverage induces the probability of having bankruptcy and financial costs thus lowers profits as equity holders want high returns on investments due to high chance for risk of default. A high debt to equity proportion points to the fact that a company is keen on financing its assets acquisition with debt. Leverage use does not always lead to profitability and the risk of excessive loss is more if there is high leverage.

### **1.1.2 The Concept of Liquidity**

Maina (2011) define liquidity as cash and cash equivalents of a firm including cash inflows and outflows of the assets. Kimathi, Galo and Akenga (2015) relate firm liquidity to meeting of its short-term obligations. More cash indicate that the business can meet its obligations. Therefore, liquidity shows the ability of an economic agent to do exchange Kleopatra (2009). This study defines liquidity as the ability of a firm to meet its obligations as they occur.

Owino (2011) said leverage and liquidity being positively related slows growth of firms. He observes that firms choose high liquidity levels to survive during recession hindering investments in viable opportunities. He notes that incomplete markets and asymmetric information lead to liquidity risk existing in financial systems. Trade off theory suggests that liquid firms venture into promising projects hence increasing

their value. Sibilkov (2007) works out asset liquidity, by computing the liquidity index derived by value of corporate transactions in an industry standardized by the total book value of assets. A firm becomes bankrupt if it cannot meet its obligations. Lack of cash and its equivalents can lead to loss of profitable business ventures. This results to high production cost that eventually affects profitability.

### **1.1.3 The Concept of Profitability**

Profit is derived by deducting all business obligations in a year from its earnings. Profitability is therefore the capacity to make profit (Ngwili, 2014). Olalekan and Adeyinka (2013 pp 89), ``profitability is the ability of a given investment to earn a return from its use.'' Nishanthini (2013) defines profitability as the final surplus of a large number of policies and decisions. This study defines profitability as the ability to generate income on owner-supplied resources.

Ngwili (2014) states that profitability ratios comprise of net profit margin, ROA, ROE, and payout ratio. Net profit margin is arrived at by net income divided by revenues. Profit margin compares similar industries. High profit indicates that a business manages its costs and is profitable. ROA is derived by dividing yearly earnings by average of total assets. It measures firm performance and indicates profitability of a firm relative to its total assets. ROE is derived by dividing net income by average stockholders' equity and measures a firm's profitability with regard to how much return it makes from investments. Payout ratio is realized when dividends is divided by earnings and measures earnings paid out as dividends. In this study, profitability will be measured by return on assets, and return on equity.

### **1.1.4 Leverage, Liquidity and Profitability**

Levered firms hold assets that are liquid or easy to convert into cash as a precautionary measure to enable them pay interest charges of debt when they arise

(Tarus et al. 2014, Owino, 2011.). A high leverage level subjects a firm into liquidity problems as it finances interests thus reducing profitability. Where leverage ratios are fixed, financial institutions limit their liquidity levels. They do this by minimizing cash and its equivalents that they maintain on their balance sheets, thus becoming risky. When a firm maintains high liquidity it points to possibility of having idle funds not invested to generate profits. However low liquidity also destroys firm credit rating and may lead to compulsory liquidation of assets. Sibilkov (2007) notes the relation between asset liquidity and leverage as being stronger for firms having more noncurrent assets relative to debt and a high chance of default. When firms use cash to settle liabilities, they reduce their leverage ratio. However if firms use cash to meet short-term obligations their liquidity is not affected, but if they use cash to meet long-term needs they tend to have low levels of liquidity.

Kahraman and Tookes, (2014) observe that stock volatility increases due to use of leverage and level of risk, which in turn increases return at an ideal level of leverage. A firm's return on equity thus increases. Over-leveraged firms experience decrease in return on equity. Kaya (2014) found that trade firms that are highly levered suffered in terms of liquidity. High debt level of the oil sector led to great financial distress and induced retrenchment (Domanski, Kearns, Lombardi and Shin, 2015).

### **1.1.5 Financial Firms Listed at the NSE**

Financial firms listed at the Nairobi stock exchange (NSE) include banks and insurance companies among other financial firms. There are seventeen listed Banks and Insurance firms and they make about twenty five percent (25%) of firms listed at the NSE. This is a relatively lower proportion given that there are many Banks and Insurance firms not listed but they carry out their operations as per their mandate in

Kenya. This study focused on listed banks and insurance firms. Some financial firms including banks and insurance firms are not listed because they are individual or family owned and they are conservative in diluting ownership and control. These could have an effect on their leverage, liquidity and eventually profitability.

Banks and Insurance firms have reported fluctuations in profits over the past decade, with some reporting high profits at times and decline in profits in other periods. In September 2015, Imperial bank went under receivership followed by Chase bank in April 2016 and there is need to establish whether these occurred due to debt or liquidity issues. Mergers are also common in banks that may indicate need to have a strong capital base among financial firms. Few researches have been done on financial performance in terms of effect of leverage and liquidity on profitability of financial and non-financial firms listed at the NSE. Again, in studying leverage and liquidity effects on profitability there is need to determine whether separation of financial firms from non-financial firms would lead to different observations due to variation in nature of operations and economic circumstances. This prompted this study to try to establish whether leverage and liquidity aspects affect profitability of financial firms and determine the extent to which Nairobi Securities Exchange market data of financial firms reflects on matters of liquidity, leverage and profitability.

## **1.2 The Research Problem**

A firm that uses more debt in its capital structure employs more leverage. High leverage subjects owners' profits to risk but leverage may not affect the cost of capital at times. If a firm's ability to use leverage declines, its liquidity reduces. Leverage is necessary but is linked to risk of bankruptcy costs. Various researchers find conflicting results on profitability, leverage and liquidity. Kimathi et al. (2015) conclude that high profitability encourages use of internal financing and lowering

debt level whereas Mwangi and Murigu (2015) found profitability to be positively related to leverage. Owino (2011) observes that scholars argue on the relationship between liquidity and leverage differently leading to conflicts in findings on effect on returns. This study tries to establish leverage and liquidity implications on profitability.

Financial firms in Kenya have reported fluctuations in earnings with both profits and losses being reported at varying periods. In 2013, nine insurance companies reported losses in earnings due to price undercutting. The putting under receivership of Dubai bank in June 2015, Imperial bank in September 2015, Chase bank in April 2016 and National bank of Kenya having financial problems in April 2016 brings about the question as to whether debt and liquidity factors played a role that calls for credit and liquidity regulation. Some financial institutions opted for mergers and partnerships like Chase bank and Stima Sacco partnered on October 12, 2015 by securing a long-term bond but Chase bank still went under receivership raising concern on its debt and liquidity position. This made it necessary to determine whether firm mergers and partnerships increased capital base due to debt financing in order to enhance liquidity or it exposed them to financial constraints. It is also not certain as to whether financial firms in Kenya prefer to finance their operations through leverage with the hope of venturing into profitable activities but unforeseen events or high risk appetite of managers makes them end up in high debts with low liquidity leading to bankruptcy costs. In addition, the question as to why and how much debt firms should use persists (Otieno, 2015).

A number of local and international studies conducted across the listed firms have concentrated much on non- financial firms leaving out financial firms because of the nature of their balance sheets (Adongo, 2012, Kodongo, Mokoaleli-Mokoteli and

Maina, 2014, Kaya, 2014, Shubita, 2012). Only a few studies have been done on financial firms with respect to leverage, liquidity and profitability, yet the two variables are not jointly studied as evident in Ngwili, 2014, whose study focused on the relationship between liquidity and profitability of insurance companies in Kenya. Mwangi and Murigu, 2015, researched on determinants of financial performance of insurance companies in Kenya, Kebewar, 2013, looks at effect of debt on corporate profitability of French service sector while Velnampy and Niresh, 2012, dealt with the relationship between capital structure and profitability of Srilankan banks. This research bridges the gap by studying the variables jointly to establish the relationships. In addition, financial firms in the banking sector reported increase in non-performing loans (NPLs) to a level of 8.16 % by April 2016 increasing their credit risks and lending risks leading to decline in profitability. It is not clear as to whether debt secured by assets was used to obtain funds (liquidity) issued and now standing as NPLs thereby reducing their profitability thus the reason for this study. Since firms follow different leverage and liquidity policies it is wanting to determine whether this affects their profitability. Also firms use different ways of managing working capital thus affecting their liquidity and eventually profitability calling for need to study this aspect. Some studies have used leverage and liquidity as dependent variables ( Tarus et al. 2014 ), this study uses leverage and liquidity as independent variables and tries to answer the question; Does leverage and liquidity affect profitability of Banks and Insurance firms listed at the Nairobi Securities Exchange?.

### **1.3 Research Objectives**

- i. Establish the relationship between leverage and profitability of financial firms listed at the NSE.

ii. Establish the relationship between liquidity and profitability of financial firms listed at the NSE.

iii. Determine the effect of leverage and liquidity on profitability of financial firms listed at the NSE.

#### **1.4 Value of Study**

This study brings on board additional findings, contribute to the body of knowledge for academics thus help in building knowledge, service delivery, and encourage future research on matters of leverage; liquidity and financial performance of NSE listed financial firms.

Managers practicing in varied areas will be able to determine whether to use leverage in financing asset purchase and gauge the appropriate leverage and liquidity levels to use for firms given their unique circumstances. Firm managers will be able to maintain appropriate debt levels avoiding situations that may lead to bankruptcy costs and have liquidity to sustain operations.

Government will identify shortcomings in financial institutions operations and monitoring thus be informed of policies that manage system wide leverage and liquidity. They will be able to form regulatory mechanisms that enhance improvement of the financial sector.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter discusses theories advanced by other researchers used to explain capital structure choice and effects on business profitability. Section 2.2 discusses theoretical review underpinning the study. Section 2.3 outlines factors determining profitability. Section 2.4 is empirical studies done. Section 2.5 is the conceptual framework. Section 2.6 is a summary to the chapter and supports the review.

### **2.2 Theoretical Review**

Capital structure theories deal with how firms finance their operations, factors that influence choice of finance, possibility of changing firm value by changing mix of securities issued and whether there is an optimal debt-equity ratio that maximizes value of the firm.

#### **2.2.1 Modigliani and Miller Theorem**

Modigliani and Miller (1958) proposed the first theorem of capital structure irrelevance in business finance. It states that debt level and structure do not affect firm value if; no taxes, no bankruptcy or liquidation costs and existence of perfect markets hold. The second theorem (1961) is about dividend policy not affecting a firm's value, that led to the two theories being referred to as "irrelevance propositions". In 1963 MM said a firm using debt has interest payments having tax advantage that increases its value. This research established that use of debt by financial firms in Kenya gives them tax advantage that increases their value by enhancing profitability.

Cline (2015) in testing the theory says that if more capital is required, increased costs of lending occur due to output costs from lower capital formation that need to be compared with benefits so as to get optimal levels of capital. There is an assumption that firms have sets of expected cash flows. A firm divides the cash flows to its

investors by choosing a certain equity and debt mix to finance its assets. They note that it is conducive to use leverage when there is absence of asymmetric information among investors and firms. An investor has the option of creating leverage that is needed though not offered or doing away with leverage that a firm has but is not required. Thus leverage does not affect the market value of the firm.

Pagano (2005) observes that corporate finance has developed by the relaxation of MM three assumptions. The first being no tax assumption by MM themselves who acknowledge that preferential treatment of debt implies that an optimal capital structure require leverage to a great extent than seen in reality. He states further that other researchers relaxed no bankruptcy costs assumption providing an offsetting cost to the tax advantage of debt. This means increasing leverage increases firm value due to tax benefits, but the probability of incurring bankruptcy costs rises. This study determined the extent to which leverage by financial firms in Kenya gives them tax benefits and the magnitude to which it exposes them to probable liquidation.

### **2.2.2 Trade-Off Theory**

Baxter, 1967 and Kraus Litzenberger , 1973, propagated trade-off theory of capital structure. It deals with the concepts of agency costs (cost of debt that explains why companies cannot have a hundred percent debt) and costs of financial distress (when a firm cannot meet debt holders' obligations). The static trade-off theory by Bradley et al. (1984) states that there is an optimum level of capital structure derived by balancing bankruptcy costs and corporate tax savings. It suggests that profitable firms use more debt and this research sought to prove whether this is the case for financial firms and find out that these firms balance between bankruptcy costs and corporate tax savings too. Dynamic trade-off theory proposes that firms may deviate from their target capital structure but they will tend to adjust towards the target. This study

established that financial firms in Kenya have target capital structures, and they may stick or deviate from it in case of need.

Trade-off theory proposes that firms should balance between marginal costs of borrowing and marginal costs of tax savings. Firms need to maintain a target level of debt consistent with the trade-off theory (Kimathi et al.). In addition, Sibilkov (2007) documents that leverage adjustment costs are positive so managers should trade-off the benefits and costs of leverage adjustments. The target leverage implies that adjustments should be made in case of any deviations. This research determined the extent to which equity/ debt issue costs are considered in making adjustments towards target leverage and liquidity by firms in relation to profitability.

Frank and Goyal (2005) said that the target adjustment theory (dynamic trade-off) receives much empirical support than does the static trade-off theory. They observe that the dynamic models provide some features that enable the trade-off theory to give a good account of how firms fund their operations and this study tried to establish whether this is valid.

### **2.2.3 Pecking Order Theory – Leverage and Liquidity**

Myers and Majluf (1984) propagated this theory. Firm owners and managers are more informed of their prospects more than prospective investors. The pecking order rule is to first use internal financing followed by debt and finally equity. Debt is relatively less risky compared to equity since investors receive a fixed return if financial distress is avoided. This study determined the extent of use of Pecking order rule to find out whether financial firms follow it strictly.

The implication is that there is no target amount of leverage. Firms choose leverage ratio based on financing needs. They first use retained earnings then debt since debt is

expensive to meet more funding need followed by equity (Shubita and Alsawalhah, 2012, Owino, 2011). Leverage need is determined by profitable ventures. Profitable firms prefer less debt as they use retained earnings. This study confirmed the validity of the proposition.

Butt, Khan and Nafees (2013) say that firms in leasing sector of Pakistan use retained earnings more than debt and equity, so this study examined the order of capital choice by financial firms. They say this is consistent with the pecking order theory by showing a negative relationship between leverage and liquidity. Leary and Roberts (2008) test and show that firms followed pecking order theory. However, Fama and French (2005) assert that managers' financial decisions do not consistently follow the pecking order theory. This study tested the claims.

#### **2.2.4 Market Timing Theory**

Lucas and McDonald propagated this theory in 1990. They say firms only issue equity when economy is stable. This study found out that debt will be an option to meet liquidity by firms in need. Baker and Wurgler (2002) find a positive relation between equity issues and the business cycle. Share price performance is important for equity issues decisions.

This theory implies that overvalued firms always issue equity. Undervalued firms do not issue equity until the costs of under valuation are low enough to outweigh the benefits from new projects (Miglo, 2010, Wabwile, Chitiavi, Alala and Musiega, 2014). This study sought to find out whether undervalued financial firms issue debt instead. Timely information reduces asymmetric information, making it favourable to issue equity. Therefore, price decline occurs when a stock issue announcement is made. However, Mansson and Tonell (2010) did not find evidence to support the

theory by the larger firms at the Nordic market. This study aimed at confirming whether firms intending to issue equity do so when economic conditions improve.

Burtler, Grullon and Weston (2005) state that market timing is not based on favourable market performance in comparison to forecasted firm performance, but rather on the market performance prior to the issue. Baker and Wurgler (2002) observe that firms issue equity but not debt when stocks prices are high and repurchase when prices decline. This study establishes whether firms issue equity when stocks prices are high and generate good returns thus improving their liquidity, instead of issuing debt that bears interest charges.

### **2.2.5 Liquidity Preference Theory**

In 1936 Keynes in his book, 'The General Theory of Employment, Interest and Money' developed the concept of liquidity where he explained determination of interest rate by supply and demand for money.

Liquidity preference means choice to hold money readily available for use at any time of need, majorly referred to as liquidity. He says that investors do require premium compensation for securities with longer maturity dates, involve high risks and prefer to hold cash that has minimal risks.

When an investment is liquid it is easily disposed off for a full value as compared to a less liquid one. Premium on short or medium term securities will be greater than those of long term securities. Investors thus do prefer to hold liquid investments.

### **2.2.6 Risk-Return Theory**

The Efficient Market theory says that a direct relationship exists between risk and return. The ideal situation is that the higher the risk connected with an investment the higher the return is and at the same time the potential for incurring losses is high when risk is big.

In real world however due to asymmetric information there is the perceived risk and the potential outcomes that make it cumbersome to predict risk and return with certainty.

High risks do not guarantee high returns hence price paid in an investment determines both risk and returns in future and must be controlled at the onset of investment. This study determined how firms tradeoff between risk and return choices.

### **2.3 Determinants of Profitability**

Profitability of firms is industry specific and generally includes financing decision, operating efficiency, firm productivity/ increased sales and firm size as indicated by some studies as follows;

Velnampy and Niresh (2012) conclude that banks that prudently make better financing decisions have a competitive edge in the industry and make superior profits. This implies that firm managers need to determine the appropriate mixes of debt and equity that can enable them to operate without financial distress and take advantage of profitable ventures.

Kodongo et al. (2014) documents that leverage negatively affect profitability of listed firms in Kenya. When they controlled for other variables results showed firm size, sales growth, and asset tangibility as important determinants of profitability. These variables also influence firms' choice of capital structure.

Stierwald (2010) analyzed the profitability of large Australian firms in the period 1995 to 2005 and found firm profitability as determined by firm level characteristics and productivity persistence. Firm specific characteristics such as strategies or product demand influence profitability. If there is consistency in quality production then profitability is enhanced.

Allen, Shaik and Myles (2011) evaluates the determinants of profitability of class 1 railroads in the United States in the period 1996 to 2009 and conclude that similar firms' concentration affected profitability and time factors representing changes in technology show net profit margins to be positively impacted by technological enhancements.

#### **2.4 Empirical Studies**

Owino (2011) examined liquidity and leverage relationships of quoted companies at the NSE. He studied thirty companies out of forty-seven quoted firms for the years 2006 to 2010. Data was analyzed using multivariate regression analysis that tests for cause- effects but not relationships and test whether this could have led to results realized. Findings are in agreement with other studies done in developing countries revealing a negative insignificant relationship between liquidity and leverage such as Tarus et al. (2014) and Awan (2014). This study used multiple correlation/general linear models to determine variable relationships of financial firms.

Otieno (2015) investigated the relationship between capital structure, performance, and replacement of CEO in firms listed on the NSE. He sampled 37 firms for the period 1990 to 2012, analyzed data using canonical correlation technique, general linear model, and generalized estimating equation to assess effects on the variables. He found a bidirectional relationship between capital structure and debt capital. He

says managers need not be passive in choosing between equity and debt capital. This can be compared with the study in Owino (2011) that does not give direction as to what ought to be done. This research used correlation analysis and general linear models to examine the direction of leverage and liquidity relationship of financial firms and how these variables relate to profitability.

Tarus et al. (2014) studied the effect of profitability, firm size and liquidity on capital structure of 34 firms listed on the NSE for the period 2006 to 2012 excluding commercial banks. They used Pearson correlation coefficient and multiple regression models to test variable relationships and found profitability and liquidity as negatively and significantly related to capital structure. This study used correlation and general linear models to determine variable relationships and Pearson correlation coefficient to test for linearity of variables and confirm validity of findings.

Ngwili (2014) tested liquidity and profitability relationship of insurance companies in Kenya. He studied 49 registered insurance companies with IRA as at December 31, 2013. Data was collected for the periods 2009 to 2013, analyzed using descriptive statistics and multiple linear regression. He found a negative but significant relationship between loss ratio and profitability of insurance industry in Kenya. This study uses correlation/general linear model to examine the relationship among variables and explain decline in profits of financial firms.

Mwangi and Murigu (2015) examined factors that affected profitability of general insurers in Kenya for the period 2009-2012. They used multiple linear regressions for analysis and found profitability to be positively related to leverage, equity capital, management competence index but negatively related to size and ownership structure.

This study used correlation and general linear model to examine whether the extent of use of leverage and liquidity levels influence profitability of financial firms.

Kimathi et al. (2015) studied the effect of leverage on performance of firms listed at the NSE using causal research design and ordinary least square to determine variable relationships. They used a population of 61 listed firms by December 2013 and found no big difference in financial performance between large levered firms and small-levered firms and profitability. This study used correlation research design to examine the relationship between leverage, liquidity

Adongo (2012) studied the effect of financial leverage on profitability and risk of a sample of thirty firms (excluding banks and insurance firms) listed at the NSE for the period 2007 to 2011. Data collected was analyzed by time series, regression and correlation analysis to determine the nature and strength of relationship between variables and found no relation among variables. Results are not inclusive of financial firms yet they play a role of funds distribution and current reports of financial crises called for the need for this study to examine variable relations.

Kodongo et al. (2014) investigates the relationship between leverage and financial performance of listed firms in Kenya. They use correlation analysis to do diagnostic tests of data for the period 2002 to 2011 and find leverage to be negatively, affecting profitability of firms. This is in agreement with the findings of Adongo (2012). This study sought to determine the strength of leverage and liquidity relation on profitability by use of similar research design.

Kahraman and Tookes (2014) examined leverage constraints on market liquidity of listed securities on NSEi of India as at December 2012. Regression design was used

and they observe liquidity as high when stocks are eligible for margin trading and decrease with ineligibility. This concurs with findings of Geanakoplos (2010) that capital constraints drive market liquidity. This study used correlation analysis to determine whether NPLs issued from levered funds by financial firms adversely influence liquidity hence low profitability due to credit risks.

Kaya (2014) studies U.S. trade firms for the period 2000-2005 to determine whether firm leverage explains profitability and liquidity values. He uses descriptive statistics and non parametric tests to analyze the variables. Findings show highly levered firms to suffer in terms of liquidity. This research investigated the negative relation between the variables among firms.

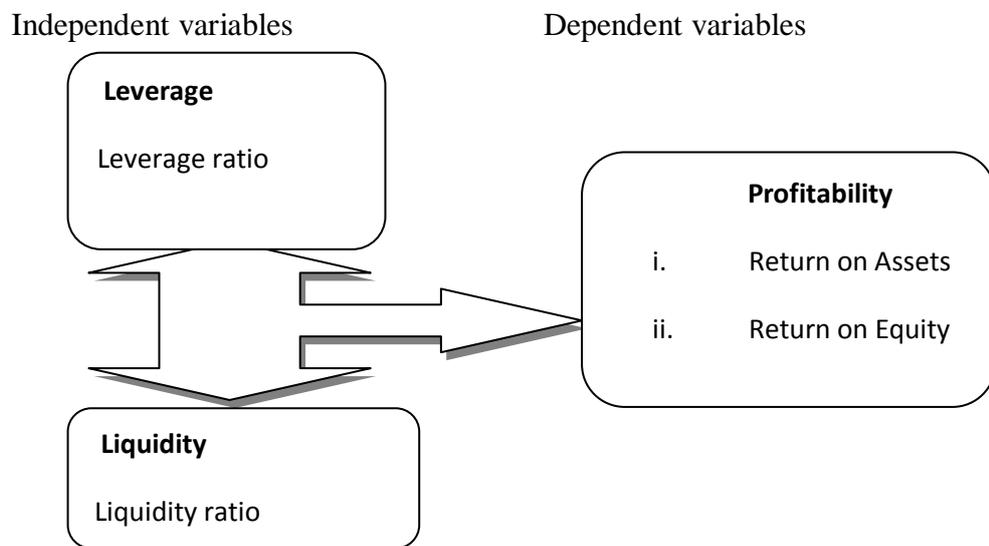
Kebewar (2013) studied debt impact on corporate profitability. He sampled 2240 French non listed companies of service sector during 1999-2006, collected data and analyzed it using generalized method of moments (GMM) econometric technique on three measures of profitability ratio. He found debt ratio to have no effect on corporate profitability in agreement with Kodongo et al. (2014). This study examined whether decline in profits of financial firms occur due to leverage and liquidity aspects using correlation/general linear models.

Shubita and Alsawalhah (2012) examined the effect of capital structure on profitability of industrial companies listed on Amman Stock Exchange during 2004-2009. They sampled 39 companies and did analysis using correlations and multiple regression analysis. Findings show negative relation between debt and profitability.

This study used correlation/general linear model to investigate whether high debts pose liquidity problems causing crisis in financial firms.

Velnampy and Niresh (2012) investigated the relationship between capital structure and profitability of ten listed Srilankan banks over the period 2002 to 2009, using descriptive statistics and correlation analysis. Results just like in (Shubita, 2012, Adongo, 2012) showed a negative association between capital structure and profitability except the association between debt to equity and return on equity. This study verified whether financial firms finance their operations through leverage hoping to venture into profitable activities and examined how unforeseen events put them in high debts lowering their liquidity.

## 2.5 The Conceptual Framework



Author: Source

Adrian and Shin (2010) argue that when firms have surplus funds (high liquidity) their asset prices increase (hike) thus reducing leverage. This occurs because firms have cash to use in carrying out routine operations as well as invest in profitable opportunities in the short term hence the tendency to avoid high leverage levels.

Kahraman and Tookes (2014) observe that decline in use of leverage reduces both liquidity and profitability of firms as returns on assets and returns on equity reduces because cash from trade is used to pay for firm expenses while sales revenue declines.

## **2.6 Summary of Literature Review**

Studies on firms' capital structure and liquidity show that firm-specific characteristics such as size, debt level, products may exhibit similar tendencies. This study examined the relationship between leverage, liquidity and profitability of financial firms, with focus on banks and insurance companies, bearing in mind that their liquidity and leverage ratio are regulated and just few studies on these firms have been done on listed firms at the NSE. Some studies find positive relation between leverage, equity capital, liquidity and profitability whereas others find negative relationships among the variables. This study was done to determine whether banks and insurance firms that use own earnings or issue equity instead of debt, earn more profit due to less leverage costs as compared to firms that rely more on debt or leverage level or whether the firms that employ more use of leverage (note that banks also borrow from other banks or the main lender, Central Bank) do well in terms of profitability.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter outlines the research design, study population, data collection methods, source of data to be collected and data analysis techniques. The chapter presents the methodologies to be used both in data collection and those to be used in testing the relationships between leverage and profitability, liquidity and profitability and the effect of leverage and liquidity on profitability of banks and insurance firms.

### **3.2 Research Design**

The study adopted correlation research design that assesses the relationship or covariance among variables in a group or data set and general linear models including ANOVA and regression that assess effects among variables. These designs fit my study, since they relate and determine the relationships among variables and gauge the effect of relationship in liquidity and leverage variables to profitability thus helps to determine the extent of relationship.

Otieno, 2015, Kodongo et al., 2014, Shubita and Alsawalhah, 2012 and Velnampy and Nireesh, 2012, have successfully used these research designs. These designs were therefore used in this study to establish whether there is correlation and effects between the dependent and independent variables.

### **3.3 Population**

The study comprised of seventeen financial firms listed at the Nairobi Securities Exchange as at the year 2016. These financial firms consist of insurance companies and banks.

Listed banks and insurance firms are seventeen in number and therefore the entire population will be taken for study. The entire population was studied and as it is less than thirty, thus a census study was done.

**3.4 Data Collection**

This study used secondary data captured from Capital Markets Authority reports, individual firm’s financial reports and Nairobi Securities Exchange handbooks for listed companies and annual reports for the period 2010 to 2015. Secondary data comprised of data from published financial statements of the listed category of firms.

Data was collected using secondary data capture form appendix II for the period 2010 to 2015. Leverage measures were derived from the statements of financial positions of individual firms, Liquidity and profitability measures were calculated using information from both statements of incomes and statements of financial positions.

**3.5 Data Analysis**

Pearson correlation and General linear models were used to establish the relationship between leverage and profitability, liquidity and profitability and the effect of leverage and liquidity on profitability. The results were tested for normality, linearity, homoscedasticity and multi-collinearity using F-tests, Confidence interval at 5% level of significance, scatter plots, Pearson coefficient and ANOVA. Profitability is the dependent variable while leverage and liquidity are independent variables. Therefore, the proposed analysis model is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \epsilon_i \dots \dots \dots 3.1$$

Where; Y = The dependent variable (Measured by ROA and ROE)

$\beta_0$  = Constant

$\beta_1 \dots \beta_3$  = correlation coefficients

$X_1 \dots X_2$  = Independent variables

$X_1$  = Liquidity Ratio

$X_2$  = Leverage Ratio

$\epsilon_i$  = Error term

Leverage ratio is a measure of leverage mostly used for regulatory purposes. The ratio is expressed as Tier 1 capital as a proportion of total adjusted assets where, Tier 1 capital is the sum of capital and reserves minus some intangible assets such as goodwill, software expenditure and deferred tax assets.

Liquidity ratio is derived by division of total assets by the difference between total liabilities and conditional reserves. Insurance companies and other financial institutions use this ratio for analysis and. It measures a company's ability to settle liabilities with its assets.

Return on Asset (ROA) is a measure of profitability which measures returns in terms of the gains realized on an asset from trading in a given financial period and leads to increase in asset value as compared to cost of acquisition or amount invested. It is measured by dividing net income by total assets.

Return on Equity (ROE) is a measure of profitability which measures returns in terms of shareholders return on equity in any year of trade. It is measured by net income after interest and tax less distributions due to preference shareholders if any divided by total outstanding shareholders equity.

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter discusses data analysis, data interpretation and discussion of findings. It presents the descriptive statistics giving details of number of observations, mean, median and standard deviation. Pearson correlation is used to determine relationships while regression analysis is done to establish predictor variable effects on response variables. Secondary data was collected from all the seventeen firms comprising of Banks and Insurance companies listed at the NSE for a six-year period in between the years 2010 to 2015. Two insurance firms; Britam and Liberty Holdings were not operational in the year 2010, thus there was no data collected for the two firms in that year.

The banking and insurance sectors provides mediums through which money flows in and out of an economy and enables distribution and circulation of finances. These firms' activities show the general operations and performance of all listed firms in the named sectors with regard to leverage and liquidity matters. These have both direct and indirect effects in a total economy as non-financial firms depend on financial firms for leverage and liquidity engagements.

### **4.2 Summary of Descriptive Statistics**

This summarizes details of ROA, ROE, Leverage Ratio, Liquidity Ratio and Profitability variables. The numbers of observations were 102, drawn from seventeen banks and insurance firms for a consecutive time period, beginning the year 2010 to 2015 for each of the firm. Table 4.1 shows the descriptive statistic summary for the variables. The results however, show 101 observations indicating the likelihood of

non usage of one row. There were no entries in the year 2010 for Britam and Liberty Holdings.

**Table 4.1: Summary of Descriptive Statistics**

Variable	N	N*	Mean	Std Dev	Minimum	Q1	Median	Q3	Maximum
ROA	101	1	3.74	2.421	-5.81	2.71	3.48	4.71	11.78
ROE	101	1	19.013	9.044	-17.42	15.08	20.24	25.13	37.45
Lev Ratio	101	1	0.177	0.1244	0	0.1228	0.1378	0.1658	0.6061
Liq Ratio	101	1	0.873	2.424	-9.422	1.325	1.428	1.544	3.35

### 4.3 Summary of Demographic effects

NSE listed Banks and Insurance firms differ in terms of years of operation and assets size. Most of these firms have been in operation for over fifty years with assets worth billions and millions of shillings and even those with less than ten years in experience were part of a large group of holdings before separation from the parent companies. Asset size and firm age seem to have had effects on leverage and liquidity levels on the financial firms.

#### 4.4 Relationship between Leverage and Profitability of Banks and Insurance firms listed at the NSE

The first objective intended to determine the relationship between Leverage and Profitability of financial firms. The study conducted entailed use of correlation for analysis of the variables to determine the relationship. Results are shown in table 4.2 as follows:

**Table 4.2: Correlation Results**

	ROE	ROA
ROA	0.460	
	0.000	
Lev Ratio	-0.165	0.705
	0.098	0.000

Author: Source SPSS Excel Analysis

This study used Pearson correlation to determine relationships at 95% significance level and derived the correlation between ROA and ROE as 0.460 and statistically significant hence a significant relationship between the measures of profitability. The correlation between ROA and leverage ratio is 0.705 and statistically significant thus showing that a significant relation exists between leverage ratio and ROA. There is an insignificant relationship between Leverage ratio and ROE since the p-value is 0.098 and statistically insignificant. The relationship between ROA and Leverage ratio is presented in table 4.3

**Table 4.3: Analysis of variance in ROA and Leverage Ratio**

Data Source	Degee of Freedom	Adj Sum of Squares	Adj Mean Square	F-value	P-value
Leverage Ratio	1	290.8	290.836	97.56	0.000
Error	99	295.1	2.981		
Total	100	586.0			
<b>Model Summary</b>					
S	R-sq	R-sq(adj)	R-sq(pred)		
1.72656	49.63%	49.13%	47.48%		
<b>Coefficients</b>					
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	1.312	0.300	4.38	0.000	
Leverage Ratio	13.71	1.39	9.88	0.000	1.00
<b>Regression Equation</b>					
ROA= 1.312 + 13.71 LEVERAGE RATIO					
<b>Fits and Diagnostics for Unusual Observations</b>					
Observation	ROA	Fit	Residual	Std Resid	
68	-5.810	5.660	-11.470	-6.72R	
72	-1.300	3.786	-5.086	-2.96R	
85	8.940	9.479	-0.539	-0.33X	
86	10.030	9.298	0.732	0.45X	
87	11.780	9.231	2.549	1.57X	
88	10.110	9.417	0.693	0.43X	
89	9.750	9.623	0.127	0.08X	
90	9.650	9.511	0.139	0.09X	

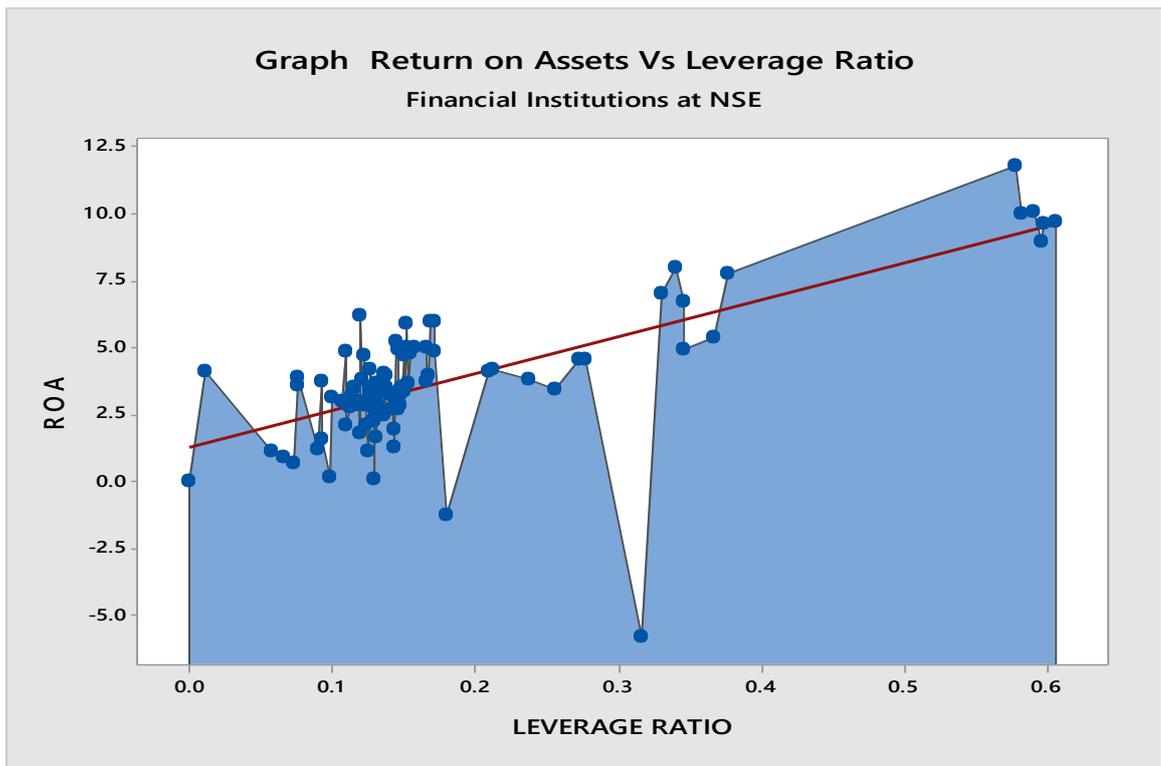
The leverage ratio has a p-value of 0.000 in ANOVA analysis indicating that the model estimated by the regression equation is significant at an alpha level of 0.05. This implies that there is a 95% confidence level that leverage ratio significantly explains the changes that occur in ROA.

The Variance Inflation Factor (VIF) is near 1.00, suggesting that the causal variables are uncorrelated. The coefficients are properly estimated, stable and can adequately be

interpreted. The  $R^2$  value in ANOVA analysis results above indicates that leverage ratio explain 49.63% of the variance in ROA. The adjusted  $R^2$  is 49.13%, and is also close to R-square, hence indicating model fitness.. Other factors account for changes in ROA besides leverage for the remaining percentages. The predicted  $R^2$  value is 47.48% and is near the value of  $R^2$  and adjusted  $R^2$  value, the model seems to be fit and capable of giving appropriate predictions. The T-value of 9.88 and a p-value of zero (0.000) indicate that the model has predictive ability; leverage thus, explains changes in ROA.

A number of observations are identified as not usual because the absolute values of the residuals are higher than 2. This shows that they are outliers. There seems to be a non clear pattern in the fits and diagnostics for residuals in the analysis of data between leverage ratio and ROA in table 4.3 in terms of values and sign directions implying that the data set is random, hence suggesting fitness of model.

**Figure 4.1: Graph of Leverage Ratio plotted against ROA**



The Graph shows the relationship between leverage ratio and ROA. Most observations are closer to the line of fit. However some observations are quite far from the straight line and show presence of outliers.

The ANOVA analysis between ROE and Leverage ratio is shown in table 4.4.

**Table 4.4: Analysis of Variance**

Source	DF	Adj SS	Adj MS	F-value	P-value
Leverage Ratio	1	223.7	223.74	2.78	0.098
Error	99	7955.3	80.36		
Total	100	8179.0			
<b>Model Summary</b>					
S	R-sq	R-sq(adj)	R-sq(pred)		
8.96417	2.74%	1.75%	0.00%		
<b>Coefficients</b>					
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	21.14	1.56	13.58	0.000	
Leverage Ratio	-12.03	7.21	-1.67	0.098	1.00
<b>Regression Equation</b>					
ROE = 21.14 - 12.03 LEVERAGE RATIO					
<b>Fits and Diagnostics for Unusual Observations</b>					
Observation	ROE	Fit	Residual	Std Resid	
68	-17.42	17.33	-34.75	-3.92 R	
72	-5.71	18.97	-24.68	-2.77 R	
77	-15.60	17.86	-33.46	-3.76 R	
85	14.58	13.98	0.60	0.07X	
86	16.61	14.14	2.47	0.29 X	
87	19.17	14.20	4.97	0.59 X	
88	14.41	14.03	0.38	0.04 X	
89	15.69	13.85	1.84	0.22 X	
90	15.74	13.95	1.79	0.21 X	
91	0.00	21.14	-21.14	-2.39 R	
100	37.45	19.32	18.13	2.03 R	
102	0.72	19.58	-18.86	2.12 R	

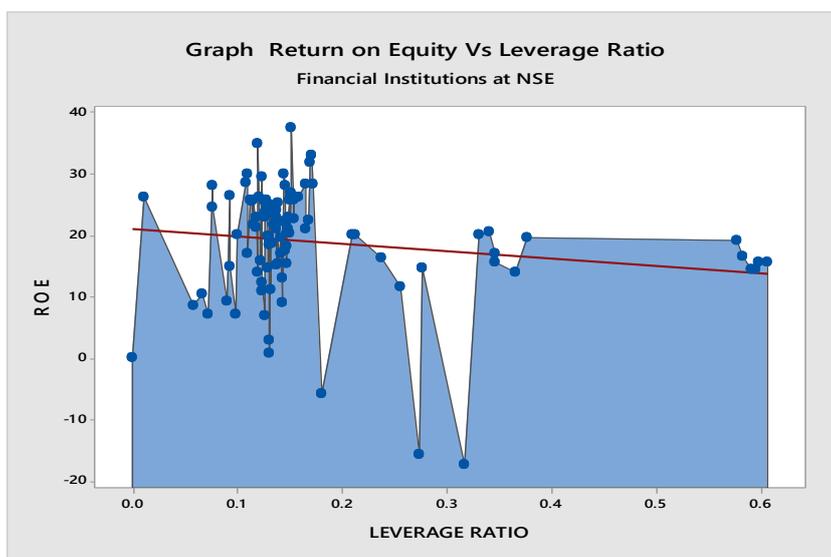
The leverage ratio has a p-value of 0.098, indicating a non-significant relation to ROE at a significance level of 0.05. This implies that there is a 95% confidence level that leverage ratio does not explain much of the changes that occur in ROE. The negative relationship that is seen between leverage ratio and ROE in the regression equation is thus insignificant.

It suggests that the leverage ratio is not very different from zero and even though there is a negative relation between leverage ratio and ROE in the regression equation, not much explanation is seen. The VIFs are low at 1.00, and show stability in the regression coefficients, properly estimated and can valuably be interpreted. The results thus show that leverage coefficients are properly estimated and are uncorrelated.

The R-square value indicates that the leverage ratio explain 2.74% of the variance in ROE. The adjusted R-square is 1.75% accounting for predictability level of the model. The two values show that the model explains 2.74% in R-square and 1.75% of adjusted R-square of the percentage of the response variable variances. This implies that only 2.74% change in the leverage ratio explains the change in ROE and other factors could be involved in determining the remaining percentage of the results. The predicted R-square value is 0.00% thus the model is not able to predict any new variation on response and the model may need improvement.

T-value is low at -1.67 whereas the p-value is 0.098 for the coefficients indicating leverage ratio is insignificant on ROE. The observed T-value of -1.67 and a p-value of zero (0.098) indicate that the model may not have precise predictive ability; the leverage ratio, does not explain much of the changes observed in ROE. Some observations are depicted as unusual since their residuals are greater than 2, indicating that they are outliers.

**Figure 4.2: Graph of Leverage Ratio plotted against ROE**



The observations in figure 4.2 show that there are unusual observations and outliers far from the line of fitness.

#### **4.5 Relationship between Liquidity and Profitability of Banks and Insurance firms listed at the NSE**

The relationship between liquidity, ROA and ROE are presented in table 4.5.

**Table 4.5: Correlation Results**

	ROE	ROA
ROA	0.460	
	0.000	
Liquidity Ratio	0.098	-0.421
	0.332	0.000

This study used Pearson correlation to establish relationships at 95% significance level and derived the correlation between ROA and ROE as 0.460 and thus a significant relationship exists between the variables. There is a significant negative relation between ROA and liquidity ratio at -0.421. An insignificant relationship is found between the liquidity ratio and ROE.

Table 4.6 presents regression analysis between ROA and liquidity ratio

**Table 4.6: Regression Analysis**

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-value	P-value
Liquidity Ratio	1	103.9	103.863	21.33	0.000
Error	99	482.1	4.870	-	-
Total	100	586.0	-	--	-
<b>Model Summary</b>					
S	R-sq	R-sq(adj)	R-sq(pred)		
2.20672	17.73%	16.89%	7.61%		
<b>Coefficients</b>					
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	4.107	0.234	17.59	0.000	
Liquidity Ratio	-0.4204	0.0910	-4.62	0.000	1.00
<b>Regression Equation</b>					
ROA = 4.107 - 0.4204 LIQUIDITY RATIO					
<b>Fits and Diagnostics for Unusual Observations</b>					
Observation	ROA	Fit	Residual	Std Resid	
31	1.300	8.068	-6.768	-3.41	R X
37	2.440	7.433	-4.993	-2.44	X
68	-5.810	2.869	-8.679	-3.97	R
72	-1.300	3.338	-4.638	-2.11	R
73	7.800	2.698	5.102	2.34	R
75	8.010	2.992	5.018	2.29	R
85	8.940	7.119	1.821	0.88	X
86	10.030	7.375	2.655	1.30	X
87	11.780	7.347	4.433	2.16	R X
88	10.110	6.627	3.483	1.65	X
89	9.750	6.339	3.411	1.61	X
90	9.650	6.480	3.170	1.50	X

Durbin-Watson Statistic = 1.35812

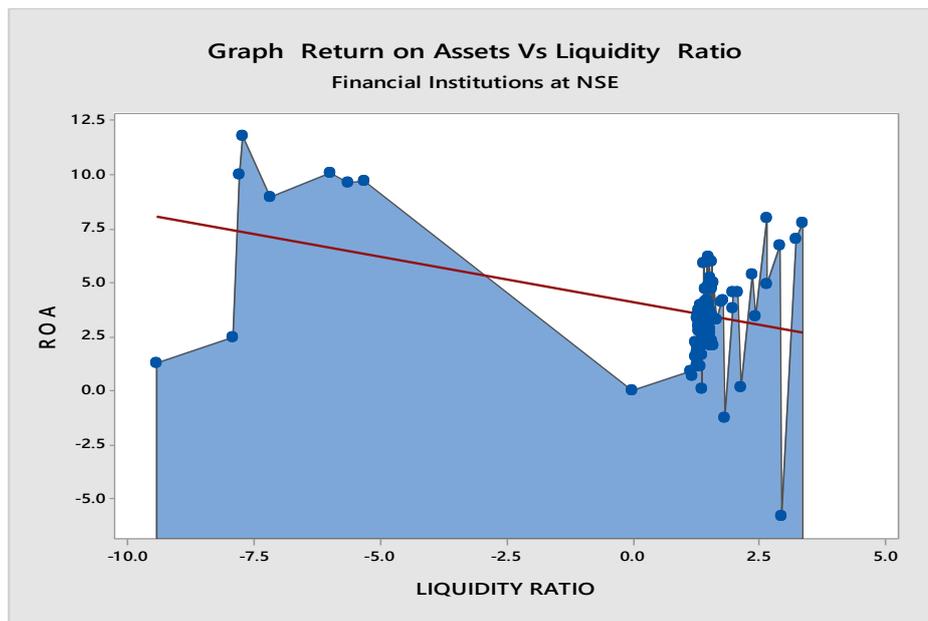
The liquidity ratio has a p-value of 0.000, indicating that it is significantly related to ROA at an alpha level of 0.05. This implies that there is a 95% confidence level that liquidity ratio significantly explains the changes that occur in ROA. Liquidity ratio thus explains profitability of firms. There is a negative relationship between liquidity ratio and ROA as one unit change in liquidity ratio causes a -0.4204 change in ROA.

The VIFs are near to 1.00, indicating no co-linear relation among the predictors. The R-square value in the model summary in table 4.6 indicate that the liquidity ratio explain 17.73% of variance in ROA. The adjusted R-square is 16.89% indicating the percentage at which the predictors explain the observations seen in the model. The values indicate that the model fits the values by the stated percentages. Other factors also explain the observations in ROA. The predicted R-square is 7.6% and since it has predictive ability the model does not appear to be over fit. The value of the predicted R-square shows that the model can predict new observations in the model.

T-value is -4.62 while p-value is 0.000 for the coefficients indicating significance of liquidity ratio on ROA. Some observations are shown as outliers since the standardized residuals are greater than 2. There is an unclear pattern in the fits and diagnostics for residuals in the analysis of data between liquidity ratio and ROA above implying that the data set is random, hence suggesting the fitness of the model.

Durbin Watson statistic is 1.35812 which suggests that there is no autocorrelation in the data used. The data collected for the various financial firms are not related to each other over successive time periods even for the same firm.

**Figure 4.3: Graph of Liquidity Ratio plotted against ROA**



Extreme values far from the line of fit in figure 4.3 indicate presence of outliers.

Regression analysis of Liquidity ratio on ROE is presented in table 4.7

**Table 4.7: Regression Analysis**

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-value	P-value
Regression	1	77.87	77.87	0.95	0.332
Leverage Ratio	1	77.87	77.87	0.95	0.332
Error	99	8101.15	81.83		
Total	100	8179.02			
<b>Model Summary</b>					
S	R-sq	R-sq(adj)	R-sq(pred)		
9.04598	0.95%	0.00%	0.00%		
<b>Coefficients</b>					
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	18.696	0.957	19.53	0.000	
Liquidity Ratio	0.364	0.373	0.98	0.332	1.00
<b>Regression Equation</b>					
ROE = 18.696 + 0.364 LIQUIDITY RATIO					
<b>Fits and Diagnostics for Unusual Observations</b>					
Observation	ROE	Fit	Residual	Std Resid	
31	9.00	15.27	-6.27	-0.77 X	
37	15.29	15.82	-0.53	-0.06 X	
68	-17.42	19.77	-37.19	-4.15 R	
72	-5.71	19.36	-25.07	-2.79 R	
77	-15.60	19.41	-35.01	-3.89 R	
85	-14.58	16.09	-1.51	-0.18 R	
86	16.61	15.87	0.74	0.09 X	
87	19.71	15.89	3.28	0.39 X	
88	14.41	16.51	-2.10	-0.24 X	
89	15.69	16.76	-1.07	-0.12 X	
90	15.74	16.64	-0.90	-0.10 X	
91	0.00	18.70	-18.70	-2.08 R	
100	37.45	19.21	18.24	2.03 R	
102	0.72	19.19	-18.47	-2.05 R	

Durbin-Watson Statistic = 1.37277

The estimated p-value of the liquidity ratio is 0.332 in ANOVA analysis and is insignificantly related to ROE at alpha level 0.05. There is a 95% probability that the actual value of the liquidity ratio is equal to zero. This implies that changes in liquidity ratio do not lead to observable responses in changes in ROE. It further

suggests that the liquidity ratio can be done away with without significantly changing the results.

#### 4.6 The Effect of Leverage and Liquidity on Profitability of Banks and Insurance firms listed at the NSE.

Regression analysis of leverage ratio and liquidity ratio on ROA is presented in figure 4.8

**Table 4.8: Regression Analysis**

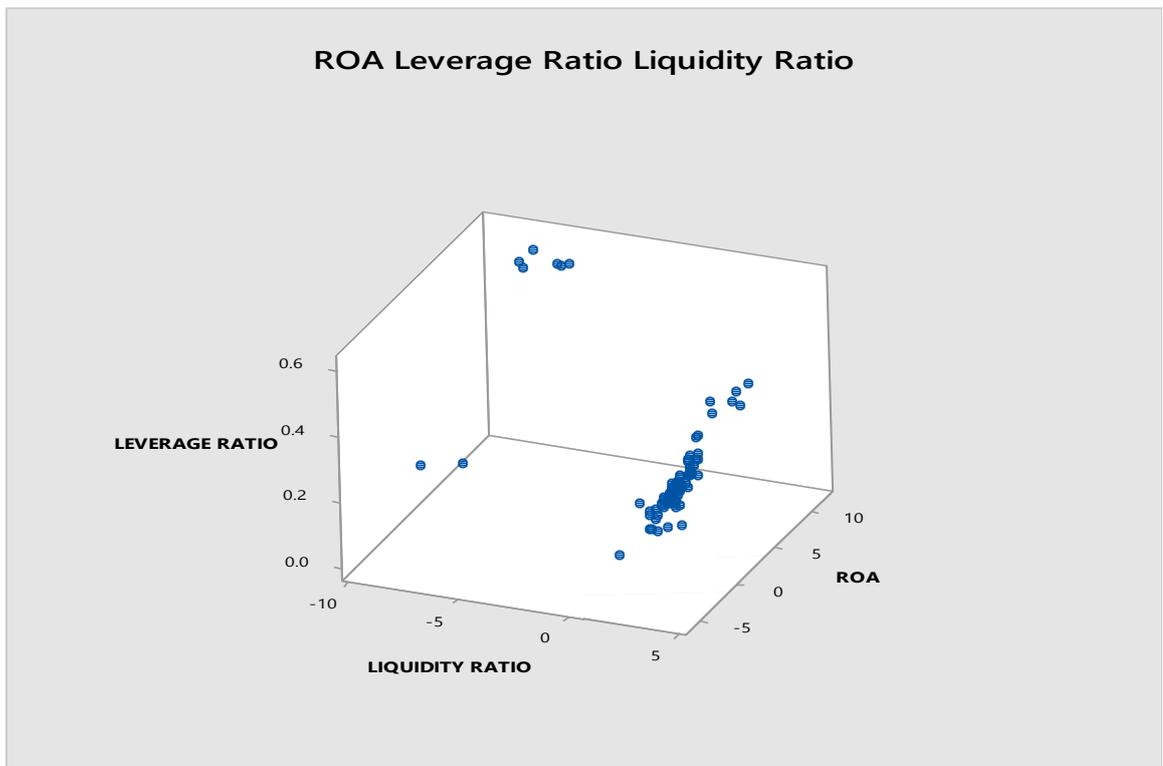
Analysis of Variance Source	DF	Adj SS	Adj MS	F-value	P-value
Regression	2	291.447	145.724	48.49	0.000
Leverage Ratio	1	187.584	187.584	62.42	0.000
Liquidity Ratio	1	0.611	0.611	0.20	0.653
Error	98	294.509	3.005		
Total	100	585.956			
<b>Model Summary</b>					
S	R-sq	R-sq(adj)	R-sq(pred)		
1.73355	49.74%	48.71%	44.58%		
<b>Coefficients</b>					
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	1.421	0.386	3.68	0.000	
Leverage Ratio	13.29	1.68	7.90	0.000	1.46
Liquidity Ratio	-0.0389	0.0863	-0.45	0.653	1.46
<b>Regression Equation</b>					
ROA = 1.421 + 13.29 LEVERAGE RATIO - 0.0389 LIQUIDITY RATIO					
<b>Fits and Diagnostics for Unusual Observations</b>					
Observation	ROA	Fit	Residual	Std Resid	
31	1.300	3.689	-2.389	-1.64	X
37	2.440	3.550	-1.110	-0.73	X
68	-5.810	5.520	-11.330	-6.72	R
72	-1.300	3.747	-5.047	-2.93	R
73	7.800	6.294	1.506	0.91	X
85	8.940	9.614	-0.674	-0.91	X
86	10.030	9.463	0.567	0.36	X
87	11.780	9.394	2.386	1.50	X
88	10.110	9.509	0.601	0.37	X
89	9.750	9.682	0.068	0.04	X
90	9.650	9.586	0.064	0.04	X

Durbin-Watson Statistic = 1.68781

The p-value for the leverage ratio in the equation is significantly related to ROA. Changes in the leverage ratio elicit responses in the value of ROA. The p-value for the liquidity ratio on the other hand is 0.653 implying that it is insignificantly related to ROA at an alpha level of 0.05. Thus changes in liquidity ratio do not explain responses observed in the value of ROA. When the two variables are combined to study effects, leverage ratio elicits responses in ROA while liquidity ratio does not thus a negative insignificant relation exists among the variables.

The R-square value indicates that both the leverage ratio and liquidity ratio together explain 49.74% of the variance in ROA while the adjusted R-square is 48.71%, a figure that is close to R-square value contributing to the percentage that explains the changes observed in ROA. The two values imply that the model fits the data well and accounts for the stated percentage of predictors in the model.

**Figure 4.4: Scatter diagram showing effects of Liquidity Ratio and Leverage Ratio on ROA**



The scatter diagram shows the effect of Leverage ratio and Liquidity ratio on Return on Assets. It shows presence of outliers or factors that may have brought about the observed outcomes.

Table 4.9 presents regression analysis of leverage ratio and liquidity ratio on ROE.

**Table 4.9: Regression Analysis**

Analysis of Variance	DF	Adj SS	Adj MS	F-value	P-value
Regression	2	224.04	112.019	1.38	0.256
Leverage Ratio	1	146.17	146.168	1.80	0.183
Error	98	7954.98	81.173		
Total	100	8179.02			
<b>Model Summary</b>					
S	R-sq	R-sq(adj)	R-sq(pred)		
9.00962	2.74%	0.75%	0.00%		
<b>Coefficients</b>					
Liquidity Ratio	1	0.30	0.300	0.00	0.952
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	21.07	2.01	10.49	0.000	
Leverage Ratio	-11.73	8.74	-1.34	0.183	1.46
Liquidity Ratio	0.027	0.448	0.06	0.952	1.46
<b>Regression Equation</b>					
ROE = 21.07 - 11.73 LEVERAGE RATIO + 0.027 LIQUIDITY RATIO					
<b>Fits and Diagnostics for Unusual Observations</b>					
Observation	ROE	Fit	Residual	Std Resid	
31	9.00	19.13	-10.13	-1.34	X
37	15.29	19.24	-3.95	-0.50	X
68	-17.42	17.43	-34.85	-3.98	R
72	-5.71	19.00	-24.71	-2.76	R
73	19.63	16.74	2.89	0.34	X
77	-15.60	17.91	-33.51	-3.77	R
85	14.58	13.88	0.70	0.08	X
86	16.61	14.02	2.59	0.31	X
87	19.17	14.08	5.09	0.62	X
88	14.41	13.97	0.44	0.05	X
89	15.69	13.81	1.88	0.22	X
90	15.74	13.90	1.84	0.22	X
91	0.00	21.07	-21.07	-2.40	R
100	37.45	19.33	18.12	2.02	R
102	0.72	19.58	-18.86	-2.11	R

Durbin-Watson Statistic = 1.44561

The leverage ratio has a p-value of 0.183 while the liquidity ratio has a p-value of 0.952 in respect of ROE in the regression model in the Analysis of variance table which shows that the model estimated by the regression procedure is insignificant at an alpha level of 0.05. These values indicate that the coefficients of these ratios could be zero. This suggests that the changes in the variables do not explain much of the responses in the dependent variable. These results are in agreement with that of Adongo (2012) which found no relation in effect of leverage on profitability measured in terms of ROE.

#### **4.7 Discussion**

The analysis of findings show that there is a positive relationship between leverage and profitability expressed in terms of ROA as seen in the significant Pearson correlation values, however there is an insignificant Pearson correlation value between leverage ratio and ROE. The significant relationship between profitability expressed in terms of ROA and leverage ratio is explained by the Pecking order theory, where managers prefer to use leverage instead of equity since it involves lower risk, thus when investment is made to acquire assets for production purposes return on assets is enhanced. The relationship between leverage ratio and ROE is -0.165 and statistically insignificant thus use of leverage does not explain what is available as returns to equity holders. When firms use high leverage, equity declines given the authorized level of capital at the point of incorporation and vice versa. The balance sheet either expands or contracts on the equity and capital side depending on level of leverage or liquidity use. These findings are in agreement with Otieno (2015) who found a bilateral relationship between capital structure and debt capital. Leverage or debt is positively related to ROA, while it is insignificantly related to ROE. High

leverage levels if used to finance acquisition of assets generate returns on assets whereas high leverage levels do not explain what is paid to equity holders' as dividends. ANOVA analysis values show that change in leverage ratio leads to positive change in profitability expressed in terms of ROA, thus increase in leverage level by firms leads to increase on return on assets. This could be due to increase in debt use applied by firms to acquire assets used for productive purposes thereby enhancing profitability on acquired assets. On the other hand increase in leverage has no significant effect on profitability expressed in terms of ROE. Again as return on assets increase, return on equity decrease as funds borrowed are immediately used to acquire assets used for production and productivity increases. On one hand high levels of leverage expose the firms to probabilities of bankruptcy or liquidation when returns dwindle in economic recessions making it difficult for them to meet compulsory debt financing costs while on the other hand high leverage leads to increase in productivity in good economic times availing funds to finance debt costs and leaving high returns for re-injection into business and for distribution to equity holders. Hence the agreement, with the Risk- Return theory, that states that the higher the risk the higher the return and vice versa.

Liquidity has a significant negative relationship with profitability expressed in terms of ROA as shown in the correlation values whereas there is an insignificant relationship between liquidity and profitability expressed in terms of ROE. High liquidity is synonymous with low returns on assets due to lack of investments whereas high liquidity does not show significant relations with distribution of equity holders dividends. Analysis of Variance of effect of liquidity on profitability indicates that there is a negative relation between liquidity and ROA. This shows that as liquidity

levels increase, return on assets decrease because funds held in liquid form are not put into productive purposes such as asset acquisition to generate returns in agreement with findings in Ngwili (2014). There is no significant relationship between liquidity ratio and ROE. This shows that as liquidity levels change, return on equity remains unaffected by obligations as they occur.

When leverage ratio and liquidity ratio are jointly regressed to observe probable joint effect on profitability, they show dissimilar effects on profitability variables. The leverage coefficient indicates that change in leverage ratio leads to change in return on assets hence increase in leverage level leads to increase in ROA and vice versa, whereas liquidity ratio does not contribute to significant changes seen in ROA when combined with leverage, thus a negative insignificant relation exists among the variables. This is in agreement with the Risk-Return theory proposition, which states that high leverage has premium costs due to inherent risks, thus in boom times high returns on assets is realized while in recession periods, high leverage reduces liquidity levels and bankruptcy costs may set in. This is in agreement with findings in Owino (2011) which showed a negative insignificant relationship between liquidity and leverage. The coefficient of leverage ratio is high in the equation explaining debt costs surge and may plunge firm into bankruptcy or even liquidation depending on leverage level used. The leverage ratio has a p-value of 0.183 while the liquidity ratio has a p-value of 0.952 in respect of ROE in the regression model in the Analysis of variance table which shows that the model estimated by the regression procedure is insignificant at an alpha level of 0.05. These values indicate that the coefficients of these ratios could be zero. This suggests that the changes in the variables do not explain much of the responses in the dependent variable. These results are in

agreement with that of Adongo (2012) which found no relation in effect of leverage on profitability when measured in terms of ROE. The insignificant effects could have occurred due to non-linear effects or other factors in the model.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The chapter gives an outline of findings in earlier chapters and provides conclusions and recommendations for use by academicians, managers and policy makers. It is a summary of the entire report of the study.

### **5.2 Summary**

This study sought to find out the relationships between; leverage and profitability, liquidity levels and profitability and to examine the effects that leverage and liquidity have on profitability when they are jointly regressed or considered in a model. The desire to determine the joint effects of leverage and liquidity on profitability was informed on earlier research works and propositions that when the two variables are combined in a model or practical use by firms they have opposite effects on each other and on firms' profitability. All these were done with focus on seventeen banks and insurance firms listed at the Nairobi Securities Exchange each for a period of six years from the year 2010 to the year 2015. Various theories that propagate how and when firms use leverage to finance acquisition of assets and how or when firms prefer to hold liquid assets are discussed. Other recent research works and findings are also discussed and compared with this study for similarities or dissimilarities in techniques and findings to contribute to the existing body of knowledge.

The study entailed use of correlation design and general linear models including ANOVA and regression analysis to establish variable relationships and effects of the variables on profitability of banks and insurance companies. These methods provide measures that gauge existence of relationships between variables as well as determine

effects on responses. Findings show that there is a positive relationship between leverage and profitability expressed in terms of ROA and a negative insignificant relationship between leverage and profitability expressed in terms of ROE. Liquidity has a negative relation with profitability expressed in terms of ROA whereas there is a positive insignificant relation between liquidity and profitability expressed in terms of ROE. Change in leverage ratio leads to positive change in profitability expressed in terms of ROA, hence increase in leverage use by firms increase return on assets. This happens when firms increase leverage level to acquire assets. When leverage and liquidity aspects are combined to observe probable joint effects on profitability, they portray dissimilar effects on firm profits. High leverage level leads to increase in ROA, whereas high liquidity levels show no effect in ROA in the regression equation. High leverage and liquidity level use do not show observable results on equity holders returns.

The study confirms the Risk-Return theory that states that when leverage is high, there are implications of finance costs and if economic times are favourable firms' reap in high profits, whereas when economic times are deplorable firms easily plunge into bankruptcy or even liquidation when they employ high leverage levels. Also the study alludes to need by financial firms to hold certain levels of cash balances to meet both recurring liquidity needs as well as long term financial requirements. If leverage is high while liquidity is low Banks and Insurance firms face the likelihood of being rendered bankrupt or being deemed into liquidation as they struggle to meet financial obligations.

### **5.3 Conclusion**

This study provides new evidence on the relationship between leverage and liquidity to profitability and the effects of the predictor variables on profitability when combined in an equation to provide joint observations. Previous research works show that there is either positive relation or negative relation of leverage to profitability. This study found out that the results of leverage relationship to profitability and the effects of the explanatory variable to profitability vary depending on which measure of profitability is applied for use in the course of study or during firms' choice on leverage level and financial reports as strategy for making investment decisions or dividend distribution, this not leaving out the short-term financial needs. Findings show that there is a positive relationship between leverage and profitability expressed in terms of ROA and a negative insignificant relation exists between leverage and profitability expressed in terms of ROE as different measures of profitability. Liquidity has a negative relation with profitability when expressed in terms of ROA whereas there is a positive insignificant relation between liquidity and profitability when expressed in terms of ROE. Change in leverage ratio leads to positive change in profitability expressed in terms of ROA, hence increase in leverage use by firms increase return on assets. This happens when firms increase leverage level to acquire assets employed to generate returns. When returns increase as a result of new asset acquisitions, there is increase in profitability in form of return on assets (ROA). Increase in leverage level does not lead to significant effects in profitability expressed in terms of ROE. Observations from analysis of leverage effects on profitability using the two different measures are dissimilar.

Similarly increase in liquidity levels leads to decrease in profitability when expressed in terms of ROA whereas when there is increase in liquidity position by firms' there seems to be unclear observations in profitability when expressed in terms of ROE due to insignificant variable relations and regression results. The observations seen in reduction in ROA could be attributed to non-acquisition of investment assets to generate returns hence high liquidity but low returns. These findings form the basis of argument and support for proposition that liquidity effects on profitability varies when different measures of profitability are applied.

Combining leverage and liquidity aspects to determine probable joint effects on profitability brings about varying observations on firm profits. When leverage and liquidity variables are combined, leverage effects are felt more than liquidity on profitability measured in terms of ROA whereas insignificant effects are observed in profitability measured in terms of ROE when the two variables are combined.

#### **5.4 Recommendations for Policies and Practice**

This study brings on board additional findings and contributes in building the body of knowledge by focusing on leverage use by banks and insurance firms that for a long time have been left out in study of debt implications with proponents saying that banks are lenders only and do not engage in leverage while insurance companies receive premiums and do not engage in leverage activities. This study confirms that all financial firms including banks and insurance firms engage in leverage activities and since they create the means through which all other firms including non financial firms distribute, allocate, stores and use finances for investments they form the basis of operations in economic activities. Their engagement in leverage and liquidity aspects, are paramount to a nations economic well being and thus academicians can encourage further fact finding in this area to help build on the existing literature.

Managers practicing in different skill areas are advised to determine whether use of leverage in financing asset purchase will be tenable in light of economic situations and whether the decision to acquire the asset will be desirable in terms of leverage costs. Managers are encouraged to gauge the appropriate leverage and liquidity levels to use for firms given their unique circumstances. This will see firms seek to maintain appropriate debt levels while avoiding situations that may lead to bankruptcy costs and have liquidity to sustain operations. Firm managers should establish the relation between liquidity of assets and leverage and their effects on profitability especially when assets are used as collateral for securities. They need to understand the effect of liquidity of asset on leverage and vice versa if assets are applied as collaterals so as to enable them make appropriate decisions when they have discretion to either dispose or not to dispose assets. This will help protect the interests of lenders to the firms. Managers should to be informed and be restricted on use of assets. Managers also need to be aware of advantages of managing firm assets instead of selling to meet liquidity needs in order to gain from avoiding costly assets sales.

Policy makers need to put in place policies that specify beneficial effects on firms' leverage levels and liquidity levels. Tax implications are felt by levered firms in terms of finance costs and liquidity aspects thus appropriate tax rates need to be used to enable firms not to sacrifice too much thus minimizing what is left for investment opportunities while at the same time enabling tax authorities to collect enough revenue for economic advantage. Also policy makers should in addition to specifying the regulatory requirements for banks and insurance firms, put in place mechanisms for monitoring their operations to ensure full compliance with minimum requirements. This should also be applied to non listed banks and insurance firms due to their contributory nature of operations affecting the whole economy. In addition

they need to fix and alter interest rates as appropriate depending on economic times. Flexible interest rates and different interest rates for corporations and individuals need to be considered for use to enable all parties to benefit from economic activities bearing in mind their financial abilities.

### **5.5 Limitations to the Study**

The study concentrated only on listed banks and insurance firms due to difficulties in obtaining data from these categories of non-listed firms thus conclusions are a representation of banks and insurance firms and are not fully applicable to all financial firms in the specified sectors in the country.

Secondary data was used and during the period of study beginning the year 2010 to the year 2015, different inflation rates prevailed and could have affected interest rates thereby affecting liquidity, leverage and profitability levels. The observed results for the period of study may bear these significant components.

Classification of reserves as obtained from financial statements was not quite distinct for some firms with regard to disclosure or non-disclosure instead there was general statement of reserves. Where it was unclear as regards this and in computation of Tier 1 capital total reserves were included.

### **5.6 Suggestions for further Research**

Some firms were declared bankrupt during the period of study, future further study could be designed to determine whether only leverage or liquidity aspects played a role to inform their distress situations or whether some other factors like management decisions in terms of choices of leverage and liquidity levels contributed to this.

Only seventeen listed banks and insurance firms were studied. Non-listed categories of these firms were left out because of difficulties in obtaining their data. In future if

more listing of these firms is done or if some means could be used to obtain their data further research could be done to determine findings, since the larger the sample or use of population for study the more valid the findings become.

Some findings showed insignificant relationships and negative values or effects thus other non-linear models could be employed to determine fit of model or further incorporate other variables that are likely to influence responses to establish whether they contribute to results observed.

Insurance firms receive premiums from policy holders which they invest in assets such as real estates, marketable securities, if they do these without some minimum liquidity retention ratio they end up in liquidity problems and fail to repay both the policy holders interests as well as the principal sum when they become due for repayment. This is an area of study that could be explored in future to help inform authorities of regulatory agencies in this sector on best practices as regards their unique nature of operations as well as provide managers of these firms' with valuable insights on courses of actions that can be adopted for effective results.

Non- Performing loans were identified as a factor that curtail the maximization of profits by Banks and even lead to realization of losses, but by the end of this research it was not clear as to whether these loans were eventually recovered or whether they were written-off as bad debts. Future research can follow up on this matter to determine their aftermath in order to give favourable recommendations.

## REFERENCES

Adongo, J. (2012). The effect of financial Leverage on profitability and risks of firms.

Unpublished MBA research project submitted to the University of Nairobi.

Adrian, T., & Shin, H.S.(2010). Liquidity and Leverage. *Federal Reserve Bank of New York Staff reports* no. 328, May 2008; revised December 2010 JEL classification: E32, E44, G10, G20

Allen, J.A., Shaik, S., & Myles, A.E.(2011). Determinants of Profitability JEL Performance: An Analysis of Class 1 Railroads in the United States. *Selected Paper presented at the Southern Agricultural Economics Association Annual Meeting, Corpus Christi, TX, February 5-8, 2011.* JEL Classification: L25, L92

Awan, M.R. (2014). Impact of liquidity, leverage, inflation of firm profitability: an empirical analysis of food sector in Pakistan. *Journal of Business and Management*, 16(1)104- 112

Baker, M., & Wurgler, J. (2002). `` Market timing and Capital Structure.`` *Journal of Finance* 57, 1-32

Burtler, A.W, Grullon, G., & Weston, J.P. (2005). Stock Market Liquidity and Cost of Issuing Equity. *Journal of Financial and Quantitative Analysis*. Vol. 40. No.2.

Butt,S., Khan, Z.A., & Nafees, B. (2013). Static Trade-off theory or Pecking order theory which one suits best to financial sector. Evidence from Pakistan. *European Journal of Business and Management*. Vol 5, No 23.

Cline, W.R. (2015). Testing the Modigliani-Miller Theorem of Capital Structure

Irrelevance for Banks. *Working Paper 15-8 Series*. Peterson Institute for International Economics.

Domanski, D., Kearns, J., Lombardi, M.J., & Shin, H.S. (2015). Oil and Debt- Bank for International Settlements. *BIS Quarterly Review*. JEL Classification: D24, L71, Q02, Q43.

Fama, E.F., & French, K.R. (2005). Financing Decisions: Who Issues Stock?. *Journal of Financial Economics*, 76 (3), pp 549.

Frank, M.Z., & Goyal, V.K. (2007). Trade-Off and Pecking Order theories of Debt. Available at SSRN: <https://ssrn.com/abstract=670543>

Geanakoplos, J. (2010). ``The leverage Cycle. *Cowles Foundation Discussion Paper No.1715R*.

Kahraman, C.B., & Tookes, H. (2014). Leverage constraints and liquidity: What can we learn from margin trading?. *World federation of exchange December 2012 Seminar Presentation reports*.

Kaya, H.D. (2014). The Impact of Leverage on Trade Firms Profitability and Liquidity Measures. *International Journal of Business and Social sciences vol.5 No. 3*

Kebewar, M. (2013). The effect of debt on corporate profitability, Evidence from French service sector. Laboratoire d'Economic d'Orleans – UMR CNRS 7322.

JEL Classification: C33, G32, L25.

- Kimathi, M.K., Galo, M.N., Akenga, G.M. (2015). Effect of Leverage on Performance of Non- financial Firms Listed at the Nairobi Securities Exchange. *Journal of Finance and Accounting. Vol.3 No. 5, pp 132 –139.*
- Kleopatra, N. (2009). Liquidity (Risk) Concepts; Definitions, and Interactions. *Working Paper Series No. 1008.*
- Kodongo, O., Mokoaleli- Mokoteli, T., & Maina, L. (2014). Capital structure, Profitability and Firm value: Panel evidence of listed Firms in Kenya. MPRA Paper No. 57116,
- Leary, M.T., & Roberts, M.R. (2008). The Pecking Order, Debt Capacity and Information Asymmetry. Available at SSRN:<https://ssrn.com/abstract=555805>
- Maina, H.K. 2011. Relationship between Liquidity and Profitability of Oil Companies in Kenya. MBA Research Project UoN.
- Mansson, E. & Tonell, J.(2010). Market Timing and Capital Structure. Available at Available at: <http://lup.lub.luse/student-papers/record/1625042>
- Miglo, A. (2010). The Pecking Order, Trade-Off, Signaling and Market Timing Theories of Capital Structure. MPRA No. 46691. University library of Munich.
- Mwangi, M., & Murigu, J.W. (2015). The determinants of Financial

Performance in general insurance companies in Kenya. *European Scientific Journal* January 2015 edition, Vol. 11, no. 1 ISSN: 1857- 7881.

Ngwili, K.P. (2014). The relationship between Liquidity and Profitability of Insurance companies in Kenya. Unpublished MBA Research Paper submitted to UoN.

Nishanthini, A. & Nimalathan, B. (2013). Determinants of Profitability: A case study of listed manufacturing companies in Srilanka. *Merit Research Journal of Art, Social Science and Humanities*. Vol.1 (1) pp 001- 006.

Olalekan, A., & Adeyinka, S. (2013). Capital Adequacy and Banks Profitability: An empirical evidence from Nigeria. *American International Journal of Contemporary Research*. Vol. 3 No 10

Onuonga, S.M.(2014). Analysis of Profitability of Kenya's Top six Commercial banks; internal factor analysis. *American International Journal of Social Science* vol.3, No. 5; October 2015

Otieno, O.L.(2015). The Relationship between Capital Structure, Performance and Replacement of CEO in Firms Listed on the Nairobi Securities Exchange. Dissertation submitted to University of South Africa, Pretoria, <<http://hdl.handle.net/10500/18746>>

Owino, E.O. (2011). The Relationship between Liquidity and Leverage of Companies quoted at the NSE, Kenya. Unpublished MBA Research project UoN.

- Pagano, M. (2005). The Modigliani- Miller Theorems: A Cornerstone of Finance. CSEF, Working Paper No. 139.
- Shubita, M.F., & Maroof, J.A. (2012). The relationship between Capital Structure and Profitability. *International Journal of Business and Social Science. Vol. 3 No. 16*
- Sibilkov, V. (2007). Asset Liquidity and Capital Structure. Working paper submitted to University of Wisconsin- Milwaukee, W1532111
- Stierwald, A. (2010). Determinants of Profitability: An Analysis of Large Australian Firms. *Melbourne Institute Working Paper No. 3/10. ISSN 1328- 4991 (Print).*
- Wabwile, E.S, Chitiavi, M.S, Alala, O.B, Musiega, D (2014). Financial Leverage and Performance Variance Among Banks. Evidence of Tier 1 Commercial Banks Listed on Nairobi Securities Exchange Kenya. *International Journal of Business Management Invention. Vol. 3 Issue 4 pp 01-13*
- Wangai, D.K., Bosire, N., & Gathogo, G.(2012). Impact of Non- performing loans on Financial Performance of Microfinance Banks in Nakuru Town. *International Journal of Science and Research ISSN(Online):2319-7064*
- Tarus et al.,(2014). Do Profitability, Firm size and Liquidity affect Capital Structure? Evidence from Kenyan listed Companies. *European Journal of Business Management, ISSN 222- 19059 Paper, Vol. 6, No 28.*
- Velnampy, T., & Niresh, J.A (2012). The Relationship between Capital Structure &

Profitability. *Global Journal of Management and Business Research. Vol.12*  
*Issue 13,1.*

**APPENDIX I: Banks and Insurance Firms Listed at the Nairobi  
Securities Exchange**

1. Kenya Commercial Bank Ltd.
2. Barclays Bank of Kenya Ltd.
3. CFC Stanbic Bank Ltd.
4. Equity Bank Ltd.
5. Standard Chartered Bank Ltd.
6. I & M Holdings Ltd.
7. National Bank of Kenya Ltd.
8. NIC Bank Ltd.
9. Cooperative Bank of Kenya Ltd.
10. Diamond Trust Bank of Kenya Ltd.
11. Housing Finance (HF) Group Ltd.
12. Jubilee Holdings Ltd.
13. Pan Africa Insurance Holdings Ltd.
14. Kenya Re- Insurance Corporation Ltd.
15. Liberty Kenya Holdings Ltd.
16. British – American Investments Company Ltd.
17. CIC Insurance Group Ltd.

