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The Relationship between bank performance and market returns in listed banks in Kenya

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The Relationship between bank performance and market returns in listed banks in Kenya

By:

John Ndegwa

**Submitted in partial fulfilment of the requirements for the Degree of Master of Business
Administration at Strathmore University.**

Strathmore University Business School

Strathmore University

Nairobi, Kenya

May, 2018

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the thesis itself.

John Ndegwa

Admission Number: MBA/15411



31/05/18

(Signature) (Date)

Approval

This research proposal has been submitted with my approval as the supervisor.

Signature Date

Dr. Thomas Kibua

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ABSTRACT

The aim of this study was to examine the relationship between bank financial performance and stock price returns. The paper serves to address the gap in expected market return projections, from an investor and shareholder point of view, when using reported financial metrics predominantly ROE. A wide body of literature centers on ROE as the predominant measure of bank profitability. This study introduces other metrics as alternatives; efficiency assessed through the total expenditure to total income ratio, liquidity through total loans to total deposits ratio, and asset quality through non-performing loans to gross loans and advances ratio. The study used only secondary data, which covered a period of 10 years from 2006 to 2016. The dependent variable under assessment, market returns, was assessed as the ratio increment between previous year end market price and current year end market price. The resulting relationships were assessed through Pearson's correlation and standard multiple linear regression analysis. The relationship found that ROE had a negative, albeit weak and statistically insignificant relationship with market returns at alpha 0.05; this therefore indicated that the metric could not be deduced, from this study, to be a predictor of market returns. Likewise, liquidity, efficiency and asset quality were not deemed significant predictors of market returns in the Kenyan context as observed through both the multiple regression model and Pearson's correlation. The study is therefore of significance to investors, banks and regulators as it serves to point to the need for alternative reported bank metrics in assessing market return trends.

List of acronyms

CBK: Central Bank of Kenya

CIT: Cost to Income Ratio

CRR: Credit Risk Ratio

DAX: Deutsche Boerse AG German Stock Index

D/E ratio: Debt to equity

ES: Efficiency Structure

NIM: Net Interest Margin

NSE: Nairobi Securities Exchange

RAROC: Risk Adjusted Return on Capital

ROA: Return on Assets

ROE: Return on Equity

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CHAPTER ONE: INTRODUCTION

This paper is about the identification of the most appropriate financial metrics that can be relied upon in the prediction of market returns from a shareholder/investor perspective. Traditionally, REO has been viewed as the go-to metric in assessment of bank performance and though effective, in some cases, it may not be satisfactory in providing a robust picture of the financial propensity of listed banks. This paper addresses this concern by focusing on liquidity, efficiency and asset quality as indicators of performance, alongside ROE, a profitability metric, as potential predictors, of market returns. The forthcoming findings serve to inform on the appropriateness of each metric as a predictor of bank performance by virtue of the relationship between the independent variables and dependent variable; this therefore increases the accuracy of prediction of market return trends among listed banks in Kenya. The dissertation is organized into five chapters – the introduction, literature review, methodology, data analysis and presentation, conclusion and recommendations.

The first chapter – introduction – is delineated into six main sections – background of the study, statement of the problem, objectives, research questions, scope of the study, and significance of the study. The chapter therefore provides a rationale for the study.

1.1 Background of the study

Securities exchange market, also known as the stock market, is one that deals with the exchange of securities issued by publicly quoted companies. Stock market plays a major role in financial intermediation in both developed and developing countries. The stock market makes it possible for companies to access long-term capital pooling funds from different investors and allows these companies to expand business operations (Ashaolu & Ogunmuyiwa, 2010).

The objective of any corporate entity is to maximize the value of its shareholders' return in the firm. Miguel (2015), in highlighting this primary function of firms, opines that ROE is a profitability ratio that is mainly used to assess a company's performance and therefore, investors look to the metric in making investment decisions. Ifeacho and Ngalawa (2014) in an extensive study of data from four top banks in South Africa – ABSA, First National Bank, Nedbank, and Standard Bank – posit that both ROE and ROA as metrics are statistically significant determinants of financial performance. Investment decisions involve the selection of positive net present value projects while financing decisions involve selection of capital structures that

minimize the cost of capital to the operating firm (Ali & Chowdhury, 2010). From a shareholder point of view, although profitability metrics, such as ROE, are often used in making financial projections, these have been observed to be less indicative of market return trends (Donaldson & Davis, 1991) hence necessitating the need for alternative indicators of market return trends.

The premise that various performance financial metrics – predominantly ROE – can be used to assess future financial trends is, however, one widely accepted in the banking industry and in the financial sector in general. Multiple studies propose and support the upholding of projections derived from ROE and ROA as the de facto approach in financial projection (Berger, Clarke, Klapper & Udell, 2005; Bonin, Hasan, & Wachtel, 2005). Other profitability indicators, as reported by Central bank of Kenya include – yield of earning assets, cost of funding earning assets, interest margin on earning assets, yield of advances, cost of deposit, return of assets, overheads to earnings, gross NPLs/Gross loans, net NPLs/Gross loans. Although there is a large body of literature arguing the merits of profitability indicators as an inferential metric as surmised from multiple studies (Bonin, Hasan, & Wachtel, 2000 Bonin, Hasan, & Wachtel, 2005) there is growing concern on the limitations of the same particularly from an investor point of view; (European Central Bank, 2010).

In assessing other market-returns predicting approaches, multiple scholars have proposed different models. Cooper, Groth and Avera (1985) assess the link between liquidity and market returns performance. They posit that the commonly held notion that liquidity contributes to higher earnings is substantiated as findings from their research indicate a positive association between liquidity and price performance of shares. Ben Moussa (2015) conducts a study on determinants of liquidity in Tunisia. The author computes liquidity through two approaches – the ratio between liquid assets and total assets and the ratio between total loans and total deposits. Among the most notable metrics that show correlation with liquidity and can be surmised to be suitable determinants of liquidity are – financial performance, total assets, operating costs, and inflation rate, and delayed liquidity. The robustness of liquidity, as observed from its correlation with other pivotal metrics, indicate its suitability as a metric of interest as a possible indicator of market returns.

Sajnog (2014) in a study of Polish and German countries highlights that German companies listed in the DAX index with higher efficiency indexes posted higher returns than their Polish

counterparts. This therefore indicates that such companies used share capital increases to generate returns in a more efficient manner than their Polish counterpart companies. Focusing on the role of efficiency in companies outside the banking industry, Granzow and Handelstatt (2001) report on Duesseldorf's – a German company – move to focus on efficiency with newly acquired sub-companies as the primary approach to respond to a 45% drop in market returns as indicated in Frankfurt Stock Market's MDAX Index. This therefore serves to show the appreciation of efficiency as an important performance metric as observed from investors' point of view.

In the Kenyan context, Musyoki and Kadubo (2012) highlight bad debt, default rates, and cost-per-loan as determinants of profitability whereas Ongore & Kusa (2013) emphasize the importance of capital adequacy, asset quality and management efficiency in projecting profitability in banks operating in Kenya. The association between bank performance and market returns is established in a number of studies with the understanding being that high performing banks have highly priced stocks (Vazifehdust and Ameleh, 2013; Gatev, Schuermann and Strahan, 2007; Socol & Danuletiu, 2013).

In particular, three main metrics are proposed as alternative indicators of market returns; these are liquidity, efficiency, and asset quality (Cooper, Groth & Avera, 1985; Ben Moussa, 2015; Sajnóg, 2014; Granzow and Handelstatt, 2001). The relationship between bank performance and market returns by listed commercial banks in the NSE is therefore addressed in this study through focusing on the aforementioned alternative indicators of market return trends.

1.1.1 Commercial Banks in Kenya

Commercial banks in the country are established under the Banking Act (Cap, 488), the Central Bank of Kenya Act (Cap, 491), Companies Act (Cap, 486), and other prudential guidelines by the CBK. According to CBK Bank Supervision Report (2015), the banking sector comprised of the Central Bank of Kenya, as the regulatory authority, 43 banking institutions (42 commercial banks and 1 mortgage finance company) and 8 representative offices of foreign banks. Omondi and Muturi (2013) state that the capital markets play a vital role in the economy by facilitating mobilization and allocation of capital resources to finance long term productive investments. In this way, it facilitates and promotes the process of economic growth in the country. The Capital

Markets Authority of Kenya was established to oversee the orderly development of Kenya's capital markets. On the other hand, the Nairobi Security Exchange (NSE) which is the only stock exchange in Kenya has a double responsibility for development and regulation of the market operations to ensure efficient trading. Out of 44 commercial banks operating in Kenya as at December 2015, 11 are publicly owned and listed on the Nairobi Securities Exchange (NSE) (NSE, 2015). A list of all privately owned and publicly traded banks in Kenya is shown in appendix A.

1.1.2 Nairobi Securities Exchange

The Nairobi Securities Exchange was founded in 1954 as a voluntary association of stockbrokers registered under the Societies Act. The exchange was initially owned by stockbrokers. The first privatization in the NSE was through a successful sale of a 20% government stake in Kenya Commercial Bank in 1988 which saw the Government of Kenya and its affiliate institutions retaining about 80% of the ownership of the bank (Nairobi Securities Exchange Limited, 2011). However, the NSE demutualized and self-listed in 2014. Currently there are 66 listed companies on the various segments of the NSE eleven of which are commercial banks. The 11 banks currently listed are – Barclays Bank Ltd, Stanbic Holdings Plc, I&M Holdings Ltd, Diamond Trust Bank Kenya Ltd, HF Group Ltd, KCB Group Ltd, National Bank of Kenya Ltd, NIC Group PLC, Standard Chartered Bank Ltd, and Equity Group Holdings, and The Co-operative Bank of Kenya (NSE). The NSE in Kenya is influenced by a number of factors such as the general performance and situation of the economy in the country, government fiscal and monetary policies level and trend of interest rates (Kirui et al, 2014).

1.1.3 Bank performance and market returns

The Kenyan banking sector's average return on equity was 24.4% in 2015 with a high of 47% and a low of -15% reflecting significant divergence in return profiles within the same sector (CBK, 2016). Robust performance was experienced in the same year with total net assets growing by 9% to KES 3,500 Billion as at December 2015 largely supported by growth in loans and advance in the tune of KES 2,165.3 Billion (CBK, 2016). Customer deposits stood at KES 2,490 Billion with the growth mostly attributed to increased deposit mobilization by banks as they expanded their outreach and leveraging on mobile platforms to mobilise lower cost deposits.

Consequently, the sectors pre-tax profits reached their highest ever at KES 141.1 Billion (CBK, 2016).

A wide array of factors affects the performance of banks. These range from external factors such as GDP and inflation (Khan, Tahir & Umer, 2015) to internal factors such as internal management of risk Mankoff (2000) and efficiency of management (Mathuva, 2009). In the Kenyan context, Musyoki and Kadubo (2012) highlight bad debt, default rates, and cost-per-loan as determinants of profitability whereas Ongore & Kusa (2013) emphasize the importance of capital adequacy, asset quality and management efficiency in projecting profitability in banks operating in Kenya. The market performance, as indicated by stock prices of the various listed banks across the period 2006 to 2016 was varied. The highest reported share price, among the listed banks was that of Standard Chartered in 2016, whereas the lowest was that reported by Equity Bank in 2006 at 4.63. The largest standard deviation, as reported over the period, was that of DTB bank at 56.33 whereas the least was that of Barclays Bank at 3.33 (Bloomberg, n.d.). The association between bank performance and stock price is established in a number of studies with the understanding being that high performing banks have highly priced stocks (Vazifehdust and Ameleh, 2013; Gatev, Schuermann and Strahan, 2007; Socol & Danuletiu, 2013).

1.2 Statement of the Problem

Alshubiri (2015) highlights the need to focus on multiple metrics in assessing banks' profitability. This need is front and central for shareholders and investors of listed banks as relying on singular reported metrics may result in misleading projections that may be of detrimental financial consequence. This paper addresses the need – from and investor/shareholder perspective – to make informed decisions on the performance of a listed banks by highlighting the extent to which various metrics can be relied upon in comprehending historic performance and projecting market return trends.

The majority of publications assessing the relationship between various reported banking metrics and market returns performance focus on ROE as the preferred indicator; this notwithstanding concerns on the appropriateness of the metric (European Central Bank, 2010). Whereas the ongoing paper sheds light on ROE, it is not to be understood that this is with bias; rather, following a theoretical and empirical review of literature in the sector, it emerges that ROE is the most frequently quoted metric in this regard. The predominance of the metric in literature

therefore indicates its equal preference in assessment of financial trends in the banking industry. It is however the researcher's intention to provide an analysis of the suitability of the metric - vis-à-vis others – as relates to stocks performance in order to establish which can be used as the best predictor of future market performance from a shareholder point of view.

The analysis of ROE amidst other financial indicators – efficiency, liquidity and asset quality – is therefore to assess each's ability to, if any, to serve as a predictive indicator of market trends from stakeholder and regulatory viewpoints. This paper therefore serves to bridge the gap of unjustified financial projecting in assessing market returns by showing the relative suitability, through relationship analysis, of the four metrics – profitability (ROE), liquidity (total loans to total deposits), asset quality (total non-performing loans to total loans), efficiency (CIT) – as statistically justifiable predictors of market returns (Alshubiri, 2015). The paper therefore serves to shed light on the relative appropriateness of the various metrics. This paper therefore serves to address the gap in market returns projection, from an investor and shareholder point of view, by providing both a comparative and summative assessment of the association of the relationship between the independent variables and the dependent variable.

1.3 Objectives of the Study

The main objective of the study is to establish the relationship between bank performance and market returns by listed commercial banks in the NSE. The specific objectives to be investigated are to:

- I. Determine the extent of association between ROE and market returns among listed banks in Kenya.
- II. Determine the extent of association between liquidity and market returns among listed banks in Kenya.
- III. Determine the extent of association between efficiency and market returns among listed banks in Kenya.
- IV. Determine the extent of association between asset quality and market returns among listed banks in Kenya.

1.4 Research Questions

- I. What is the correlation strength between ROE and market returns among listed banks in Kenya?
- II. What is the extent of association between liquidity and market returns among listed banks in Kenya?
- III. What is the extent of association between efficiency and market returns among listed banks in Kenya?
- IV. What is the extent of association between asset quality and market returns among listed banks in Kenya?

1.5 Scope of the Study

The study is retrospective in nature and focuses on secondary data. The study takes on a census approach as it focuses on data from all 11 listed commercial banks as reported by the Central Bank of Kenya for the period 2006 to 2016.

1.6 Significance of the Study

This study centers on the interests of shareholders and investors of publicly listed banks. In particular, the study seeks to provide a comparison of the relative correlation of various banking metrics and market returns. Findings from this paper are relevant to investors as they allow for informed decision making in light of trend analysis through explanatory variables; to banks as they help predict trends in market returns; and to regulators as they provide a basis for evaluations of possible anomalies in the relationships between the various metrics. Furthermore, the study provides a summary consolidated regression model that serves to provide insight into the relationship between the various dependent variables – profitability, liquidity, efficiency, and asset quality – and the dependent variable market returns; this model will serve to better guide investment decisions by providing a summative predictive model, if any. The study is also of importance to banks particularly because insight into the various relationships between the variables. By focusing of the results yielded from this study, banks will be better positioned to inform investors on possible beneficial positioning for profits as indicated by various internal metrics; this would in turn raise the share price of the bank in question. Furthermore, banks, through focusing on possible relationships derived from the study, or lack thereof, may identify areas of focus in the bid to improve market performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter details the theories, regarding various financial metrics and their relationship with market returns, and also highlights prior empirical research conducted in the field. The conceptual framework to be employed, and variables to be involved in analysis are also presented herein.

2.2 Theoretical Framework

The Markowitz Portfolio Selection theory put forward by Markowitz (1952) posits that the process of selecting a portfolio involves two distinct steps, the first – and of most importance to the current study – being the observation and experience leading to the belief of the future performance of a stock and the second, involving the actual purchase of a portfolio. According to the theory, investors are involved in the most risk adverse approaches to making the most of other investment. This theory therefore fits with the current study as it is the researchers view that to efficaciously engage in the first step of the market participation process, one has to assess possible trends in the market so as to form an informed opinion of future positions; it is through this process that an investor makes well-structured investments and assumes a risk-averse yet profitable position. This study focuses on the comparison of various reported metrics to assess the suitability of each in informing market return trends.

The Arbitrage Pricing Theory (APT) put forward by Ross (1976) highlights that stock price is determined by a multiplicity of factors; factors that have differing effect on the stock at any given period. The theory therefore points to the need for the accurate deciphering of the market conditions affecting a stock; this can be achieved, in part, by assessing the various metrics available for the traded company as these provide insights into the shaping factors that eventually would affect the market value of the company. For instance, low liquidity reported by a company for a given financial period may be viewed as a potential indicator of decline in productivity of stifled operations and hence, by focusing on this metric, an investor or shareholder may gain insight into possible trends in market share value.

2.3 Empirical Review

Maria et al (2002) state that financial performance measures the efficiency with which a company utilizes its assets to create revenues in its principal mode of doing business. The most

common financial indicators applied by most commercial banks include: return on investment (ROI), earnings per share, return in sales, as well as return on equity (ROE). ROE is currently considered the most ubiquitous indicator of future financial trends in the banking industry Alagidede (2015). According to the European Central Bank, however, there is growing concern on the limitations of the same and therefore a need to indicate other possible reported metrics that better indicate anticipated banking performance, particularly for the benefit of investors and shareholders (European Central Bank, 2010).

Ruiz-Porras (2009) conducts a study utilizing financial data collected across 211 countries over the period 1990 and 2003. The author, considering the effects of the economic downturn, sought to assess the determinants of financial performance across geographical divides. A fixed-effect logit model was employed for analysis of the panel data gathered; a likelihood tests was also conducted. Results indicate that bank stability is enhanced by market-based financial systems whereas financial development within economies presented as having a negative effect on bank stability. The implications of this study are that banks operating in fast-developing environments should be assessed for profitability by including metrics that indicate their susceptibility to decline in the event of unprecedented financial crises. This study addresses this need by focusing on market performance of listed banks in Kenya as informed by metrics other than those centered on profitability. Specifically, the alternative indicators are – liquidity, efficiency, and asset quality. The relationship between these metrics and market returns forms the body of the literature reviewed as depicted in subsequent sections of this chapter.

2.3.1 Profitability metrics and market returns

Miguel (2015), opines that ROE is a profitability ratio that is mainly used to assess a company's performance and therefore, investors look to the metric in making investment decisions. Ahsan (2012) proposes a ROE measurement approach that can be used to predict portfolio performance. The author, from the viewpoint of stakeholders, indicates that the model created presents a limitation in that it cannot be used to satisfactorily assess returns for companies with higher ROEs, but that the association between ROE and returns holds true for companies with normal return rates. This therefore indicates that ROE can be used in modified ways to assess possible financial projections for companies.

Heffernam & Fu (2010) in an analysis of post-reform financial performance of Chinese banks present four main measures of performance for comparison - Economic Value Added (EVA), Net Interest Margin (NIM), Return On Average Equity (ROAE) and Return On Average Assets (ROAA). The EVA, as defined by the authors, is a value-based performance metric with the main defining characteristic being its factoring in of the opportunity cost of capital in its computation. The metric therefore provides insight into the actual gain, to shareholders, resulting from positive value added. This study therefore highlights the traditional assessment of company performance and by extension share performance through focusing on ROE. Rashid & Jabeen (2016) conduct a comparative study to assess the performance of Islamic and non-Islamic (conventional) banks in Pakistan. Panel data over the period 2006 to 2012 is considered. Results indicate that performance of banks is significantly correlated with GDP and lending interest rates with high interest rates characteristic of poor performers. This paper therefore brings to the foreground the need to incorporate lending metrics in assessing the anticipated productivity of a bank in contrast to focusing on ROE and ROA.

Following an assessment of the impact of the global financial crisis, Sharma, Shebalkov and Yukhanaev (2016) assess financial health of banks in Russia and seek to categorize them according to performance. The authors focus on data from 1,279 banks with reports presented over the 10-year period 2000 to 2010. A multivariate analysis approach is effected and performance metrics are categorized into five major indicators of performance are posited ROA, ROE, current ratio, debt to equity (D/E) ratio, Risk Adjusted Return on Capital (RAROC). The authors therefore provide additional metrics to be considered in assessment of possible alternative performance metrics. Batchimeg (2017) provides an across-industry assessment of performance metrics. In particular, six sectors, among which is banking, are considered. All companies considered are listed in the Mongolian stock exchange. As with the study by Khan, Tahir & Umer (2015) ROA is considered as a primary performance metric with the other metrics being ROE and ROS. Asset ratio, current assets and total assets ratio are considered as explanatory variables. Of the chosen independent variables, growth in profit, quick ratio and current ratio were deemed insignificant in determining performance across the six sectors.

Laing and Dunbar (2015) in assessing market value of four major Australian banks focus on Economic Value Added (EVA), Earnings per share (EPS) and Return on Assets (ROA) and

Return on Equity (ROE) as explanatory variables and market value as the dependent variable. The authors employ a longitudinal study with multiple regression as the preferred analysis approach and conclude that of the metrics, EVA is the best indicator of financial performance. This study therefore provides evidence of alternative approaches to performance projection from a stakeholder's point of view.

Diaw and Mbow (2011) take an approach focused on assessing ROE in light of return of Mudhārabah deposits; whereas the former focuses on profits after taxation, the latter assesses productivity as a ratio between Mudhārabah deposits – deposited by investors with the view to be channeled towards entrepreneurship – and bank equity. Their study, focused on an array of Arab countries indicates that the Mudhārabah returns approach provides a better prediction model in comparison to the traditional ROE metric. Van Heerden and Van Vuuren (2015) in assessing the post-Basel-III-Accord project that an ROE downward trend for major banks in the country would be observed and would persist. This downward trend in ROE is therefore viewed as a proxy for general financial deterioration in the industry – and industry which according to Ifeacho and Ngalawa (2014) accounts for more than 20% GDP in the country. It is therefore inferable that a general presupposition of ROE as a proxy indicator of financial propensity, without sufficient evidence, may serve as a source of inherent error in financial reporting and projection, as is evidenced from this study.

Ifeacho and Ngalawa (2014) in an extensive study of data from four top banks in South Africa – ABSA, First National Bank, Nedbank, and Standard Bank – posit that both ROE and ROA show that both metrics are statistically significant determinants of financial performance. Other metrics, however, such as capital adequacy, surprisingly exhibit a negative association as determinants of financial performance. Although this study re-affirms the industry held acceptability of ROE and ROA as performance indicators, it does not provide evidence for the exclusion of other indicators, such as capital adequacy, in assessing financial projections and whether an amalgamation of approaches would yield a more telling and informative model.

Rashid & Jabeen (2016) conduct a comparative study to assess the performance of Islamic and non-Islamic (conventional) banks in Pakistan. Panel data over the period 2006 to 2012 is considered. Results indicate that performance of banks is significantly correlated with GDP and lending interest rates with high interest rates characteristic of poor performers. This paper

therefore brings to the foreground the need to incorporate lending metrics in assessing the anticipated productivity of a bank in contrast to focusing on ROE and ROA. Alam and Brown (2006) observe that the assessment of financial metrics for projection of stock performance should be done through consideration of disaggregated over aggregated earnings data. Disaggregated data refers to that collected through a variety of sources with aggregated data referring to that sourced from single – mostly self-reporting – entities. This is because projections stemming from analysis of disaggregated data vis-à-vis stock price yield more robust and reliable findings (Alam & Brown, 2006). This need is addressed in this study by focusing on financial data collected from the CBK and stock data as reported from Bloomberg.com with minimal inclusion of data from self-reporting bank publications.

1.3.2 Liquidity and market returns

The relationship between bank liquidity and market returns has been explored in a number of studies. Waleed (2016) in assessing the general performance of banks reveals a positive relationship between liquidity and traditional measures of performance – such as ROE and ROA – but does not find a similar relationship between liquidity and market returns. This therefore indicates that liquidity, according to the author, may be a metric meriting further evaluation with regard to its association with market returns through studies conducted in different contexts. Socol and Danuletiu (2013) conducted a study assessing the association between ROE, ROA and CRR. The authors, computed the ratio of total value of loans exposure and related interest under "unlikely to be paid" categories, to total loans and related interest pertaining to non-bank loans with off-balance sheet entities not included. The results indicate that there the CRR, was correlated with banking performance metrics and therefore could be considered as a possible metric to assess the future value of a company given its current credit standings. Using CRR as a proxy for liquidity, it may be concluded that liquidity is positively associated with ROA and ROE in that a decrease in credit risk results in fewer defaults and therefore an increase in total liquidity. Stemming from this inference therefore is the observation that high bank performance, hence high market returns, would result from improved liquidity.

Vazifehdust and Ameleh in a study assessing the effect of monetary policy on stock exchange highlight a novel relationship between bank liquidity and market returns. They posit that an inverse relationship exists between the two metrics in that increased interest-free deposits within

financial markets indicate a decrease in funds available for purchase of stocks. The general effect therefore expected to result in reduced purchase of stocks, which one would infer to cause decrease in stock price due to falling demand. This view can be related with Al-Shattarat W. and Al-Shattarat B. inferences from a study focusing on the Tokyo stock exchange; the authors indicate that liquidity in the stock market can be associated with both high and low stock limits as indicated by the Tokyo stock exchange; the association with both high and low limits may be attributed to the increase and decrease of liquidity in banks as a mediation factor in stock market behavior.

Menkhoff (2000) focuses on Thailand's banking sector highlighting the fact that the region is generally considered to have relatively weak financial institutions. The need for highlighting of accurate financial predictors is underlined by the authors assertion that banks were primarily to blame for the financial crisis in Asia. In particular, Menkhoff points to poor credit-risk analysis as a possible reason for wanting performance. This study therefore introduces risk-assessment related measures as possible indicators of future financial performance. Bannister, Cho & Newman (2010), provide insight into the preferability of stock-return-based performance metrics over earning-based performance metrics. The authors opine that executive compensation plans based on accounting earnings to stock metrics were increasingly seldom. This is in comparison to the increase in uptake of stock-performance-based compensation plans. This therefore indicates the disparity between accounting earnings and actual stock performance as indicators of a banks health. The study serves to justify the need for a shift to more risk-revealing indicators of financial performance in assessing performance of banks.

Gatev , Schuermann and Strahan (2007) further point to a positive relationship between liquidity and stock price by highlighting that policy as evidenced a delayed implementation of liquidity requirements by the Basel Committee on Bank Supervision; a delay that saw the improvement of stock prices as companies was deemed to be satisfactorily equipped with regard to liquidity following delayed implementation of the higher liquidity caps. Ongore and Kusa (2013), in assessing financial determinants in Kenya's banking industry identify the metrics pertaining to capital adequacy, asset quality and management efficiency as significant determinants of profitability in banks. Surprisingly, the authors posit that liquidity does not have much of a

bearing on bank profitability. Mathuva (2009) further highlights capital and cost-income ratios as pivotal in assessment of financial trends in the Kenyan market.

2.3.3 Efficiency and market returns

Hadad, Hall, Kenjegalieva, Santoso & Simper, 2011 observe that bank efficiency ratings, as assessed through two efficiency models - efficiency and super efficiency - varies among Indonesian banks. The variation was also seen across tiers with higher tiered banks showing higher efficiency ratings. In general, however, it was found that efficiency was directly related to market performance across all tiers. This finding therefore supports the inclusion of efficiency as a dependent variable in the assessment of market returns as a dependent variable. Pasiouras, Liadaki and Zopoundisis (2008) focus on bank efficiency with a particular emphasis on efficiency as pertains to technical aspects of banking defining technical efficiency as follows - By how much can input quantities be proportionally reduced without changing the output quantities produced? Results from the study indicate a positive relationship between efficiency and share performance. Sufian and Haron (2009) further assert this relationship in a study of the banking industry in Kuala Lumpur indicating that banks with high rates of return, a proxy for stock performance, also posted highly in efficacy stores.

Alnaa, Adongo and Juabin (2016) in a study of the banking industry in Ghana identify the metrics return on assets, capital adequacy, return on equity and management efficiency as the main profit indicator pertinent in foreign and local bank performance assessment. Their study highlights the presupposition of applicability of the metrics in assessment of bank performance propensity as no prior justification is provided for their suitability. The same trend is observed in multiple studies evaluating the phenomenon in the African context (Mlambo & Ncube, 2011; Van Heerden & Van Vuuren, 2015). Mlambo and Ncube (2011), in a study in South Africa, however apply efficiency scores as a preferred measure of bank performance indicating that reporting for various banks in the sector tended to show an upward trend in efficiency prior to the 2008 economic downturn; this trend was also apparent for ROE reporting for various banks observed in the same period. Maria et al (2002) state that financial performance measures the efficiency with which a company utilizes its assets to create revenues in its principal mode of doing business. The most common financial indicators applied by most commercial banks include: return on investment (ROI), earnings per share, return in sales, as well as return on

equity (ROE); these are also the most commonly used in making projections on stock performance (Socol and Danuletiu, 2013).

2.3.4 Asset quality and market returns

Alshubiri (2015), in a study of the banking sector in Muscat Security Market, posits the need to focus on an integration of metrics in assessing market performance of listed banks. Through a regression analysis, the author shows that asset quality has an inferable impact on stock market performance of listed banks. The author specifically posits assessment of non-performing loans, as an indicator of asset quality, serves as a useful indicator of projected performance. He however also highlights the need to focus on multiple variables to avoid misleading projections in anticipated market performance. Iannotta, Nocera and Siron (2007) posit that public banks generally have poorer loan quality and higher insolvency risk - factors that directly affect their asset quality. Furthermore, the authors indicate that comparatively, mutual and government-owned banks generally are less profitable than privately owned banks. This therefore indicates a link between performance of banks and asset quality. Particularly for publicly traded companies, the authors observe that concentration of ownership has a direct effect on market performance - banks with concentrated ownership are associated with better loan quality, lower asset risk and lower insolvency risk.

In an assessment of the effects of mergers and acquisitions on bank performance, Altunbas and Marques (2008) opine that bank performance may generally be buoyed by the coming together of different organizations. Specifically, the disparity within their capabilities with regard to their loan and credit risk strategies serve to directly improve overall performance and financial propensity. This therefore indicates that banks with relatively favorable non-performing loan ratings may be inferred to have robust and balanced risk and loan management strategies which positively affect market performance. Bongini, Laeven and Majnoni (2002) conduct a study of East Asia banks over the period 1996 to 1998 and conclude that share price serves as a more reliable indicator of possible financial crisis than focusing on credit ratings and accounting data. Viewing credit ratings as possible indicators of asset quality given that credit ratings factor in non-performing loans, it may be surmised that the comparative difference in correlation with performance between the two metrics - credit ratings and share price - serve to show a discrepancy in using either metric as a predictor of performance. Furthermore, the authors posit

that market returns data seem to react more quickly, than credit rating and accounting data, to market conditions. An assessment of the correlation between asset quality as informed by credit rating, and market share would therefore be inferred, from this study, to show a lack of sufficient correlation to justify prediction of market performance through focusing on credit ratings.

2.3.6 Summary of Literature Review

The studies highlighted in this section point to the predominance of ROE as the main indicator of profitability and stock performance for listed banks. It is however apparent that these metric is not always an accurate predictor of financial trends. An array of alternative metrics are also presented with the most notable and applicable for the Kenyan context – given similar studies in the field Ongore and Kusa (2013) – being liquidity, efficiency and asset quality. The literature therefore points to a need to assess the identified metrics so as to determine their predictive ability in determining future market returns.

2.4 Research gap

The main gap identified in this literature review is highlighted by the European Central Banks' (2010) observation that although ROE is widely used as an indicator of financial performance financial projections, it is not always sufficient, particularly from stakeholder and investor points of view. The metric is also used extensively in the assessment of stock price fluctuation (Socol & Danuletiu, 2013). It is therefore necessary, particularly from an investor and shareholder point of view, to explore alternative reported metrics as possible indicators of financial trends. Studies conducted in Kenya, as highlighted in the empirical literature review primarily, center on ROE and related metrics as financial trends – including stock performance. Little has been done to assess the suitability of the metric, alongside others, in determining financial trends in the banking industry in Kenya. This study addresses this gap by establishing the relationship between ROE, Liquidity and Efficiency, and Asset quality, with market returns so as to highlight the most predictive financial metric.

Increases in the profitability, liquidity, efficiency, and asset quality are positively associated with higher market returns using company returns as a proxy (Cooper, Groth & Avera,1985; Sajnóg, 2014; Laing & Dunbar ,2015). Other authors however indicate a lack of association between the variables, most notably Waleed (2016) who finds a lack of significant relationship between

liquidity and market returns and Ongare and Kusa (2013) who do not find a relationship between liquidity and revenues. There are therefore mixed findings as regards the association between the metrics – a gap that this study seeks to contribute in addressing from a stakeholder and investor perspective in the Kenyan market.

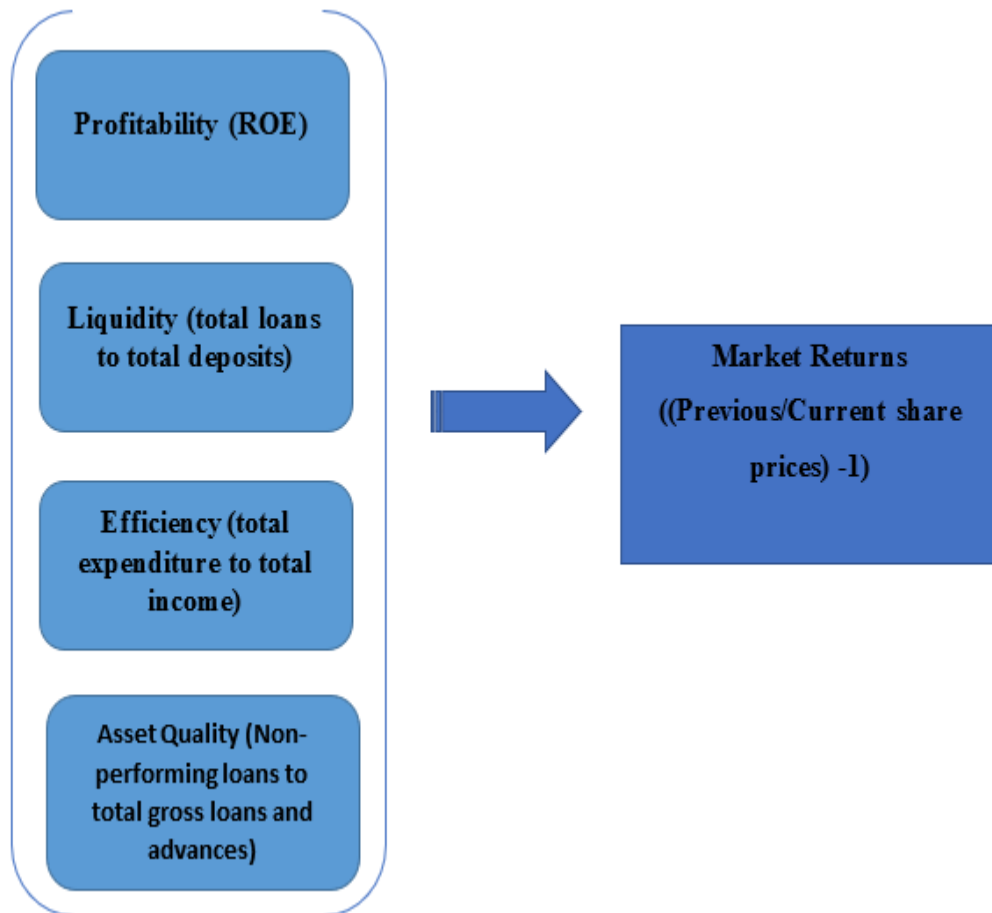
2.5 Conceptual Framework

According to the market power and efficiency structure theories, the determinants of profitability and therefore stock performance within banks can be grouped into either external or internal factors. The metrics considered in this study are the explanatory variables ROE, liquidity, efficiency and asset quality whereas the dependent value is market returns. The conceptual framework used to analyze this relationship is diagrammatically represented in figure 2.1.

Figure 2.1 Conceptual Framework

Independent Variables

Dependent Variable



2.6 Operationalization of the variables

Market returns will be operationalized through computation of the yearly returns ratio through the formula – (previous annual average price/ current average annual price)-1. Efficiency will be assessed through the total expenditure to total income (revenue) ratio – CIT; liquidity through total loans to total deposits ratio; profitability through ROE - net income after taxes divided by total equity capital, and asset quality through non-performing loans to gross loans and advances ratio. The effect of each independent variable will be assessed through one-to-one (correlation analysis), and aggregative (multiple regression) analysis with market returns (the dependent variable) after which respective correlation, and regression coefficients will inform the extent of relationship, hence predictive potential, of the various independent variables on the dependent variable.

Table 2.1 Operationalization of variables

Variable	Measurement	Source
Market returns	(Previous/current market price) -1	(CBK, 2016)
Efficiency	Cost-to-income, CIT	(CBK, 2016)
Liquidity	Total loans to total deposits ratio; profitability through ROE	(CBK, 2016)
Asset Quality	Non-performing loans to gross loans and advances ratio	(CBK, 2016)
Profitability	ROE	(CBK, 2016)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the manner by which data will be collected and analyzed. The chapter is structured to address the following aspects – The research design, population, sample, research quality, and ethical considerations.

3.2 Research Design

The study takes on an explanatory design with qualitative data collected for an 11-year period. The study is explanatory in that it assesses the relationship between independent and a dependent variable with a previously unobserved combination of independent variable and using data that has not previously been used in a like manner in the Kenyan context – financial report data from the Kenyan market and Bloomberg market returns (Creswell, 1994). The data is collected over the period 2006-2016 years from the Central Bank of Kenya repository (CBK, 2018) and where missing, from the company's financial reports.

3.3 Population and sampling

The population of the study is all NSE listed banks in Kenya – a total of 11; the study therefore takes on a census approach. Data for the banks will be collected over the period 2006 to 2016. The period was chosen as financial reports on all the banks under consideration within this period are available with metrics reported sufficiently as pertains to the purposes of this study. The general repository (Central Bank of Kenya) however lacks reported figures for a number of years – most notably metrics pertaining to liquidity and asset quality – and for these years, where possible, the data will be collected from the affect companies' publicly listed financial reports.

3.4 Data Collection Method

The study is retrospective in nature and focuses on secondary data as reported by the CBK and collected from Bloomberg market returns reports (Croswell, 1994). Financial data for all the banks will therefore be obtained from annual reports. All banks currently listed were in existence for the specified time period and are therefore sufficiently reported on. However, in the event that data was lacking from the central repository, the same, where possible, was sourced from the companies' websites as part of reported financials.

3.5 Data analysis approach

The main analysis approach to be employed involves a Pearson's correlation coefficient analysis approach whereby the relationship between the various independent variables will be inferred – as reported through respective Pearson's correlation coefficient values – to indicate the importance and nature of effect of the particular independent variables under consideration. A multiple regression model was used for it allows simultaneous investigation of the effect of two or more variables. The equation is depicted below.

$$\text{MARKET RETURN} = b_0 + b_1\text{CIT} + b_2\text{L/D} + b_3\text{ROE} + b_4\text{NPL/GL} + e_i$$

Where

b_0 - the y intercept

b_1 - rate of change of MARKET RETURN as CIT changes.

CIT – Cost income ratio

b_2 - rate of change of MARKET RETURN as total loans total deposits ratio changes.

L/D - total loans to total deposits ratio

b_3 - rate of change of MARKET RETURN as ROE changes.

X_3 - ROE

b_4 – rate of change of MARKET RETURN as non-performing loans to gross loans and advances changes.

NPL/GL – non-performing loans to gross loans and advances

e_i - the random error form.

3.4 Research Quality

Reliability and validity of data collected for the study was ensured through the sourcing of the data from CBK and Bloomberg. Given the standing of the bodies as ratified institutions, the data were pre-assumed to be rigorously collected and crosschecked. The data are also presented in a

standardized manner hence reducing error that would result from further manipulations to ensure compatibility of data prior to analysis. According to Tavakol and Dennick (2011) reliability involves an assessment of how consistently an approach of collecting and analyzing data is. Research validity was ensured in this study through the use of data from government-ratified and audited company financials. Validity, the assessment of whether a contract measures that which it is intended ((Tavakol & Dennick, 2011)), was ensured by collecting data pertinent to the specific measures under study – market returns, efficiency, liquidity, and asset quality – as depicted in literature and as reported by the central governing body – Central Bank of Kenya.

3.5 Ethical considerations

In the context of research, ethics refers to the standards of behaviors that guide the researcher's conduct in relation to the rights of those who become subject to the researcher's work or are affected by it (Mark et al. 2012). Given that data will be collected from public sources and inferences made in a generalized manner indicating industry-wide relevance of findings, it is anticipated that no ethical violations will be forthcoming in both the collection and reporting process involved in this research.

CHAPTER 4: DATA ANALYSIS, RESULTS AND PRESENTATION

4.1 Response rate

The study took on a census approach with targeted financial data collected over the period 2006 to 2016. Data was primarily collected from the Central Bank of Kenya repository. It was however observed that the standard reporting approach varied over the years and as such, data on particular ratios could not be sourced from the primary repository; these were sourced, from company annual reports where possible.

4.2 Descriptive statistics

The study focused on the 11 banks listed in the NSE as of April 2018. These are – KCB, Equity, Cooperative, Barclays, Standard Chartered, DTB, CFC-Stanbic, NIC, I&M, NBK and Housing finance. Of the 11, six – KCB, Equity, Cooperative, Barclays, Standard Chartered and DTB – were ranked as lying in the large peer group whereas the remaining – NIC, I&M, NBK, CFC-Stanbic and Housing Finance – were in the medium peer group. The large-peer group have >5 ratings in market share index scores whereas the medium peer group have ratings of between 1 and 5 (Central Bank of Kenya, 2016). The various descriptive statistics deduced from the collected data were computed for the five variables. These are reported on, per variable, in subsequent sections. A table with the full descriptive statistics is presented in Appendix B; the descriptive statistics as pertains to each metric (for simplicity of explanation) are depicted subsequently.

4.2.1 Profitability (ROE)

Equity Bank and Standard Chartered Bank had the highest median (0.376), with Barclays Bank coming in third at 0.368. Housing Finance had the lowest median (0.148), followed by National Bank (0.192) and Diamond Trust Bank (0.245). Equity Bank had the highest mean (0.374), with Barclays Bank (0.363) and Standard Chartered (0.359) coming in second and third respectively. Housing Finance had the lowest mean (0.143), followed by National Bank (0.160) and NIC Bank (0.264). National Bank had the highest standard deviation (0.153) followed by Equity Bank (0.117) and Standard Chartered (0.068). The lowest standard deviation was of KCB (0.026), with Co-operative Bank (0.032) and NIC (0.031) following respectively. Equity bank was therefore viewed as the most profitable over the reported period whereas Housing Finance was the least profitable. The various descriptive statistics are depicted in table 4.1 below.

Table 4.1 Profitability descriptive

Statistic	KCB	Equity	COOP	Barclays	STANCHART RT	DTB	STANBIC	NIC	I&M	NBK	HF
Nbr. of observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	0.264	0.159	0.239	0.248	0.219	0.186	0.184	0.221	0.232	-0.15	0.053
Maximum	0.352	0.500	0.336	0.446	0.453	0.356	0.356	0.306	0.355	0.324	0.214
1st Quartile	0.282	0.329	0.275	0.323	0.354	0.244	0.229	0.237	0.285	0.110	0.090
Median	0.290	0.376	0.295	0.368	0.376	0.245	0.260	0.269	0.312	0.192	0.148
3rd Quartile	0.301	0.472	0.300	0.403	0.379	0.300	0.313	0.286	0.335	0.272	0.191
Mean	0.294	0.374	0.291	0.363	0.359	0.265	0.268	0.264	0.305	0.160	0.143
Variance (n-1)	0.001	0.014	0.001	0.004	0.005	0.003	0.003	0.001	0.001	0.023	0.003
Standard deviation (n-1)	0.026	0.117	0.032	0.065	0.068	0.050	0.058	0.031	0.038	0.153	0.058

4.2.2 Liquidity

The overall variation in liquidity across the period (2006 to 2016) was between 0.071 and 0.576 as indicated by the standard deviations for the various banks. Housing Finance had the highest median (1.229), I&M (1.073) and Equity (0.97) coming in second and third respectively. The lowest median was of National Bank (0.507), followed by Standard Chartered (0.757). The highest mean was of equity (1.146), with I&M (1.075) and NIC (0.936) coming in second and third respectively. NBK had the lowest mean (0.372), followed by Standard Chartered (0.688). Based on the mean value, equity bank was viewed as having the most liquidity whereas NBK was the last rated on the basis of liquidity.

Table 4.2 Liquidity

Statistic	KCB	Equity	Coop	Barclays	Standard Chartered	DTB	Stanbic	Nic	I&M	NBK	Hf
Nbr. of observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	0.633	0.664	0.700	0.700	0.560	0.729	0.742	0.754	0.615	0.032	0.122
Maximum	0.965	1.861	0.930	0.988	0.836	0.877	0.971	1.080	1.338	0.708	1.488
1st Quartile	0.862	0.757	0.740	0.769	0.595	0.760	0.871	0.887	1.005	0.048	0.282
Median	0.930	0.970	0.807	0.790	0.690	0.795	0.879	0.913	1.073	0.507	1.229
3rd Quartile	0.946	1.510	0.865	0.875	0.757	0.827	0.935	1.024	1.236	0.650	1.316
Mean	0.881	1.146	0.801	0.823	0.688	0.796	0.886	0.936	1.075	0.372	0.909
Variance (n-1)	0.011	0.202	0.007	0.009	0.010	0.002	0.005	0.010	0.049	0.099	0.332
Standard deviation(n-1)	0.103	0.449	0.081	0.093	0.100	0.047	0.071	0.100	0.222	0.315	0.576

4.2.3 Efficiency

Efficiency ratios varied significantly by bank. I&M bank had the highest median (2.793), followed by Standard Chartered (2.243) and NIC Bank (2.094). The lowest median was of Housing Finance (0.577), followed by Co-operative Bank (0.610) and National Bank (1.405). The highest mean was of I&M bank (39.609), with Equity (14.198) and Standard Chartered (2.300) taking second and third place. The lowest mean was of Co-operative Bank (0.611), followed by Housing Finance (0.828) and National Bank of Kenya (1.513) respectively. The highest standard deviation (78.694) was of I&M Bank, with Equity Bank coming in second at 38.153. Third was Stanbic with 1.709. The lowest standard deviation was of Co-operative Bank (0.019), followed by Barclays Bank (0.111) and KCB (0.142). Table 4.3 provides a depiction of the descriptive statistics. I&M was viewed as the most efficient bank, on the basis of mean, over the period; Cooperative bank was however viewed as the least efficient.

Table 4.3 Efficiency descriptive statistics

Statistic	KCB	Equity	Coop	Barclays	Stanchart	DTB	Stanbic	Nic	I&M	NBK	Hf
Observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	1.369	1.048	0.583	1.649	2.012	1.344	0.024	1.781	2.202	1.178	0.336
Maximum	1.758	128.831	0.640	1.947	2.524	3.427	6.864	2.316	222.975	2.538	1.723
1st Quartile	1.447	1.493	0.594	1.747	2.194	1.889	1.533	2.000	2.498	1.270	0.470
Median	1.593	1.824	0.610	1.874	2.243	1.985	1.799	2.094	2.793	1.405	0.577
3rd Quartile	1.684	2.223	0.625	1.930	2.436	2.697	2.019	2.235	21.759	1.597	1.196
Mean	1.572	14.198	0.611	1.835	2.300	2.218	2.113	2.086	39.609	1.513	0.828
Variance (n-1)	0.020	1455.663	0.000	0.012	0.027	0.422	2.921	0.032	6192.775	0.158	0.219
SD (n-1)	0.142	38.153	0.019	0.111	0.164	0.649	1.709	0.179	78.694	0.398	0.468

4.2.4 Asset Quality

Variations among the banks were reported between 0.008 (DBT) to 4.652 (Stanbic) as indicated by the standard deviation in asset quality. The highest median was of NBK (0.328), followed by Stanbic (0.153). The lowest median was of DTB (0.012) followed by Barclays (0.011). Stanbic (3.084) had the highest mean, followed by NBK (0.466). The lowest mean was of Diamond Trust Bank (0.015), followed by Barclays (0.020). Table 4.4 presents a summary of the descriptive statistics for the variable asset quality. With regard to Asset quality, Stanbic bank had the highest rating for the period with DTB being least favourable as an investment option as assessed through asset quality.

Table 4.4 Asset quality descriptive

Statistic	KCB	Equity	Coop	Barclays	Stanchart	DTB	Stanbic	Nic	I&M	NBK	HF
Nbr. of observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	0.025	0.020	0.034	0.000	0.010	0.007	0.012	0.004	0.003	0.077	0.038
Maximum	0.090	0.070	0.370	0.065	0.120	0.031	9.607	0.119	1.714	1.804	0.382
1st Quartile	0.030	0.027	0.043	0.010	0.025	0.011	0.042	0.018	0.005	0.106	0.090
Median	0.045	0.030	0.050	0.011	0.050	0.012	0.153	0.035	0.014	0.328	0.125
3rd Quartile	0.056	0.036	0.140	0.029	0.082	0.019	6.468	0.051	0.042	0.437	0.257
Mean	0.048	0.035	0.113	0.020	0.058	0.015	3.084	0.045	0.188	0.466	0.183
Variance (n-1)	0.000	0.000	0.012	0.000	0.001	0.000	21.638	0.001	0.288	0.302	0.016
Standard deviation (n-1)	0.021	0.015	0.112	0.019	0.038	0.008	4.652	0.038	0.536	0.550	0.127

4.2.5 Market Returns

The highest median was of NBK (0.162) followed by I&M (0.111) and Barclays (0.054). The lowest median was of Diamond Trust Bank (-0.213), followed by Equity Bank (-0.188) and Stanbic Bank (-0.139). The highest mean was of National Bank (0.183) followed by Housing Finance (0.174) and I&M (0.106). The lowest mean was of Diamond Trust Bank (-0.082) followed by Equity Bank (-0.078) and KCB (-0.041). The highest standard deviation was of Housing Finance (0.698), followed by Stanbic Bank (0.558) and NBK (0.528). The lowest standard deviation was of I&M (0.127), followed by Barclays (0.325) and KCB (0.363). Table 4.5 presents a summary representation of the descriptive statistics for the variable.

Table 4.5 Returns descriptive statistics

Statistic	Equity	KCB	Barclays	Nic	DTB	Stanchart	Stanbic	Coop	HF	I&M	NBK
Observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	-0.691	-0.669	-0.539	-0.506	-0.632	-0.388	-0.517	-0.529	-0.757	-0.024	-0.598
Maximum	0.631	0.522	0.564	0.742	0.441	0.718	1.150	0.551	1.357	0.230	1.186

1st Quartile	-0.366	-0.271	-0.138	-0.419	-0.320	-0.281	-0.304	-0.252	-0.316	0.043	-0.097
Median	-0.188	-0.097	0.054	-0.075	-0.213	-0.071	-0.139	-0.039	0.049	0.111	0.162
3rd Quartile	0.244	0.238	0.213	0.383	0.250	0.141	0.418	0.229	0.694	0.171	0.334
Mean	-0.078	-0.041	0.049	0.016	-0.082	0.012	0.099	-0.005	0.174	0.106	0.183
Variance (n-1)	0.175	0.132	0.105	0.234	0.134	0.143	0.311	0.134	0.487	0.016	0.278
SD (n-1)	0.418	0.363	0.325	0.483	0.366	0.378	0.558	0.366	0.698	0.127	0.528

4.4 Overall Regression and correlation analysis

A standard multiple linear regression model was used to assess the relationship between the dependent variable (market return) and the independent variables – profitability, liquidity, asset quality, and efficiency. The generated model is presented in table 4.6.

Table 4.6 Regression analysis output

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.197 ^a	.039	-.003	.4185
a. Predictors: (Constant), PROFITABILITY, ASSET QUALITY, EFFICIENCY, LIQUIDITY				

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.114	.146		-.783	.436
	LIQUIDITY (Total loans/Total deposits)	.181	.160	.119	1.129	.262

ASSET QUALITY (Non-Performing Loans/Total Loans)	.019	.033	.060	.586	.559
EFFICIENCY (CIT)	.000	.002	.028	.274	.785
PROFITABILITY (ROE)	-.024	.020	-.121	-1.156	.251
a. Dependent Variable: Market RETURNS					

The generated model accounted for, as indicated by the R square value, 3.9% of the variability in the dependent variable. The variable liquidity had the highest modulus coefficient although this was not significant at alpha 0.05; none of the resulting coefficients, as indicated by their p-values, was significant at alpha 0.05. There was therefore deemed to be no significant inferable relationship between the variables at alpha 0.05. The overall correlation analysis output is given in table 4.7. From the table it is evident that none of the correlations were significant at alpha 0.05 and hence none of the indicators was deemed as satisfactory indicator of market performance. The results for each objective are discussed subsequently.

Table 4.7 Pearson correlation coefficients

		Market Returns	Liquidity	Asset Quality	Efficiency	Profitability
Market returns	Pearson Correlation	1	0.144	0.045	0.028	-0.132
	Sig. (2-tailed)		0.152	0.653	0.775	0.171
	N	109	100	100	107	109
Liquidity	Pearson Correlation	0.144	1	-0.103	0.062	-.214*
	Sig. (2-tailed)	0.152		0.285	0.521	0.024
	N	100	111	109	108	111
Asset Quality	Pearson	0.045	-0.103	1	-0.028	0.006

	Correlation					
	Sig. (2-tailed)	0.653	0.285		0.777	0.948
	N	100	109	111	108	111
Efficiency	Pearson Correlation	0.028	0.062	-0.028	1	-0.011
	Sig. (2-tailed)	0.775	0.521	0.777		0.910
	N	107	108	108	116	116
Profitability	Pearson Correlation	-0.132	-.214*	0.006	-0.011	1
	Sig. (2-tailed)	0.171	0.024	0.948	0.910	
	N	109	111	111	116	121
*. Correlation is significant at the 0.05 level (2-tailed).						

4.5 The relationship between ROE and market returns among listed banks in Kenya

This section provides analysis of data in accordance with the first objective of the study – To determine the extent of association between ROE and market returns among listed banks in Kenya. To assess the relationship between ROE and Market Returns, two analyses were performed – standard linear multiple regression analysis and Pearson correlation analysis. Regression results depicted in table 4.8 indicate that there was not a significant relationship between ROE and market returns at alpha 0.05. Table 4.8 provides the correlation analysis results for the variables. Profitability was observed to have a negative, albeit weak, relationship with market returns (-0.132). This correlation was however not significant at alpha 0.05.

Table 4.8 Correlation analysis – Market returns and ROE

		MARKET RETURN	LIQUIDITY (Total Loans/Total Deposits)	ASSET QUALITY (Non-Performing Loans/Total Loans)	EFFICIENCY (CIT)	PROFITABILITY (ROE)
MARKET RETURN S	Pearson Correlation	1	0.144	0.045	0.028	-0.132
	Sig. (2-tailed)		0.152	0.653	0.775	0.171
	N	109	100	100	107	109

4.5 The relationship between liquidity and market returns among listed banks in Kenya.

Overall correlations of the data for the period did not indicate a significant correlation between bank liquidity – assessed through the ratio Total Loans/Total Deposits – and market returns. Table 4.9 provides a summary of the output of correlation analysis for the variable as correlated with market returns.

Table 4.9 Overall liquidity and market returns correlation

		MARKET RETURN	LIQUIDITY (Total Loans/Total Deposits)	ASSET QUALITY (Non-Performing Loans/Total Loans)	EFFICIENCY (CIT)	PROFITABILITY (ROE)
MARKET RETURN S	Pearson Correlation	1	0.144	0.045	0.028	-0.132
	Sig. (2-tailed)		0.152	0.653	0.775	0.171
	N	109	100	100	107	109

The overall regression analysis for the dataset indicated a coefficient of 0.144 for the explanatory variable liquidity; the value was however not significant at alpha 0.05. Liquidity was not viewed

as having a statistically justifiable relationship with market returns as indicated by both the regression and correlation analyses.

4.6 The relationship between efficiency and market returns among listed banks in Kenya.

Overall correlations of the data for the period did not indicate a significant correlation between bank efficiency – assessed through the ratio Total Expenditure/Total Income – and market returns. Table 4.10 provides a highlighted correlation analysis for the variable as correlated with market returns.

Table 4.10 Overall efficiency and market returns correlation

		MARKET RETURN	LIQUIDITY (Total Loans/Total Deposits)	ASSET QUALITY (Non-Performing Loans/Total Loans)	EFFICIENCY (CIT)	PROFITABILITY (ROE)
MARKET RETURNS	Pearson Correlation	1	0.144	0.045	0.028	-0.132
	Sig. (2- tailed)		0.152	0.653	0.775	0.171
	N	109	100	100	107	109

The 0.028 correlation coefficient between market returns and efficiency indicated that there was a very weak relationship between the variables; moreover, the correlation was not statistically significant at alpha 0.05. The regression results indicated a coefficient of less than 0.001 for the variable as an explanatory variable for market returns. The coefficient was not significant at alpha 0.05. It was therefore deduced that there was no significant relationship between the two variables as observed through both correlation and regression analyses.

4.7 Bank correlations between asset quality and market return

There was no significant correlation between asset quality (non-performing loans/total gross loans and advances) and market returns over the period 2006 to 2016 as surmised from the cumulative data from the 11 banks. The correlation results are depicted in table 4.11.

Table 4.11 Market return and asset quality correlation

		MARKET RETURN	LIQUIDITY (Total Loans/Total Deposits)	ASSET QUALITY (Non-Performing Loans/Total Loans)	EFFICIENCY (CIT)	PROFITABILITY (ROE)
MARKET RETURNS	Pearson Correlation	1	0.144	0.045	0.028	-0.132
	Sig. (2- tailed)		0.152	0.653	0.775	0.171
	N	109	100	100	107	109

From the regression model, asset quality presented a coefficient of 0.019 therefore indicating a weak relationship between the two variables. The coefficient was however not deemed significant at alpha 0.05. The analyses – multiple linear regression and Pearson correlation – therefore indicate that there is no statistically significant relationship between the variables at alpha 0.05.

4.8 Summary of analysis

Analysis of the overall dataset for the years 2006 to 2016 indicated that there were no significant statistically inferable relationships between the variables and therefore, none of the variables could be used to successfully predict market returns in the Kenyan context for the period under study. As was the case with the regression model, the overall correlation model did not present a valid relationship between the variables for the period of study.

CHAPTER FIVE: DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1: Introduction

The main focus of the study was to establish the relationship between bank performance and market returns by listed commercial banks in the NSE. The particular objectives employed to this end were – To determine the extent of association between ROE and market returns among listed banks in Kenya; to determine the extent of association between liquidity and market returns among listed banks in Kenya; to determine the extent of association between efficiency and market returns among listed banks in Kenya; to determine the extent of association between asset quality and market returns among listed banks in Kenya. This chapter presents a discussion of the findings from the study, provides a conclusion, and highlights recommendations.

5.2 Discussion

This section is delineated into four sub-sections each addressing a particular objective.

5.2.1. The extent of association between ROE and market returns among listed banks in Kenya.

Findings from this study indicate that the metric ROE was not correlated with market returns. Furthermore, regression analysis indicated that none of the variables was significantly inferred to be a predictor of market returns. It therefore emerged, from this study, that there is need to focus on non-ROE metrics in estimation of market return trends; however, the preferred variable could not be found among those considered in this study. The wider body of literature, both in the international scene and in the local scene indicate that ROE is the most ubiquitously used predictor of market trends and financial trends in general (Berger, Clarke, Klapper & Udell, 2005; Bonin, Hasan, & Wachtel, 2005). This metric has however been viewed as lacking, most notably by the European Central Bank, therefore necessitating research into finding alternative predictor metrics (European Central Bank, 2010). The results, given the negative relationship between ROE and market returns as indicated in the regression model, therefore substantiate the view that ROE cannot be viewed as the only predictor metric in assessing the performance of listed banks in Kenya. However, it is noteworthy that the deduced relationship was weak and non significant at alpha 0.05.

5.2.2 The extent of association between liquidity and market returns among listed banks in Kenya.

The findings, as derived from the analysis of data in this study, indicate that liquidity is not correlated or viewed as a valid predictor of market returns; this finding is therefore in keeping with that by Ongare and Kusa (2013). It therefore emerges that as with profitability and efficiency, it is necessary for investors to seek out alternative indicators of performance in making investment decisions. The effect of liquidity, given similarity in findings between this study and that by Ongare and Kusa (2013) in the Kenyan context, therefore may point to a peculiarity in the Kenyan market with regard to the relationship between liquidity and market performance. Cooper, Groth and Avera (1985) assessing the link between liquidity and market returns performance highlight that the commonly held notion that liquidity contributes to higher earnings is substantiated as findings from their research indicate a positive association between liquidity and price performance of shares. Views indicating a relationship between ROE and market returns are therefore contrary to those arrived upon in this study therefore indicating a need for further investigation into the reason for varying results.

5.2.3 The extent of association between efficiency and market returns among listed banks in Kenya.

Findings from this study, indicate that efficiency, assessed through total expenditure to total cost ratio, did not present a statistically inferred correlation with market returns. Moreover, the metric did not present as a statistically valid predictor of market returns. Findings from this study are therefore contrary to those posited in analysis of the influence of efficiency in the industry – as depicted by multiple authors – In addressing the influence of efficiency on financial performance in the banking industry; Alnaa, Adongo and Juabin (2016) in a study of the banking industry in Ghana identify the metrics return on assets, capital adequacy, return on equity and management efficiency as the main profit indicators pertinent in foreign and local banks performance assessment; the authors indicate that the performance metric, efficiency, is positively correlated with market returns. This assertion is further supported by Maria et al (2002) who conduct a study of the South African economy.

5.2.3 The extent of association between asset quality and market returns among listed banks in Kenya.

This study indicated that the metric asset quality was not a statistically inferable indicator of market returns. The metric did not indicate a positive correlation with market returns. Iannotta, Nocera and Siron (2007) posit that public banks generally have poorer loan quality and higher insolvency risk - factors that directly affect their asset quality. The authors propose the consideration of the metric asset quality, in its various capacities, in estimation of financial banking trends. Alshubiri's (2015) regression analysis depicting asset quality as a valid predictor of financial trends in the banking industry therefore contradicts findings from this study. The results, viewed off the back of the regression and correlation analysis therefore indicate that the metric should be further assessed for value as an explanatory model.

5.3 Conclusion

The most apparent observation from the analysis is that none of the considered metrics were deemed significant determinants of market returns. Also noteworthy was the negative regression coefficient associated with ROE as a predictor of market returns. Findings from this study therefore serve to substantiate the position the ROE is not necessarily a suitable indicator of trends in market returns. As observed by the European Central Bank, the validity of ROE as the go-to metric in market trend predictions cannot be taken without question (European Central Bank, 2010). The study however fails to show suitable replacer variables to be considered in assessing trends in market returns. This study indicates that in the Kenyan context, the variables in question – ROE, Total loans to Total deposits, CIT and non-performing loans to total loans – cannot be viewed as reliable predictors of market returns. According to the Arbitrage theory, market returns are determined by a wide array of factors and the effect of each factors changes with context; it is therefore inferable that other indicators of liquidity, profitability, asset quality and efficiency may bear significant correlation and predictive capacity in relation to the assessment of market trends; the findings of this study are therefore not generalizable to the metrics and are bound by the time of focus chose for the study – 2006 to 2016.

5.4 Recommendations

The findings of this study are of importance to various stakeholders of the banking industry. The relevance to the various parties is discussed herein.

The findings of this study are of importance, most notably, to investors and shareholders. This is because they indicate that there is need to focus on different metrics, other than the traditionally utilized profitability metrics – ROE and ROA – in assessing market trends..

From a bank point of view, listed banks should assess the disjoint in relationship between the variables performance, liquidity, efficiency, and asset quality measures and market returns. This is particularly important given that studies in the international context depicted valid relationships between the variables (Iannotta, Nocera and Siron; 2007; Alshubiri's, 2015; Alnaa, Adongo & Juabin, 2016; Maria et al, 2002).

The findings are also of importance to regulators, as given the various depictions in relationships between the variables, it is peculiar that none was observed in the Kenyan market; this therefore may point to possible inaccuracies in the reporting mechanism or may point to other peculiar factors within the market – factors that should be regulated – resulting in the anomalous relationship or lack of relationship.

5.5 Areas for further study

The relationships drawn between the variables profitability, liquidity, efficiency, asset quality, and market returns were not exhaustive of the metrics; it is therefore possible that other indicators of performance falling under the four metrics may present different relationship with the same dependent variable – market returns. Further research taking in other performance metrics is therefore necessary to provide a more holistic comparative model of the relationship between banking performance and market returns.

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APPENDIX A

Name of Bank	Ownership
1. ABC Bank (Kenya)	Private
2. Bank of Africa	Private
3. Bank of Baroda	Private
4. Bank of India	Private
5. Barclays Bank of Kenya	Public
6. Stanbic Bank	Public
7. Chase Bank Kenya (In Receivership)	Private
8. Citibank	Private
9. Commercial Bank of Africa	Private
10. Consolidated Bank of Kenya	Private
11. Cooperative Bank of Kenya	Public
12. Credit Bank	Private
13. Development Bank of Kenya	Private
14. Diamond Trust Bank	Public
15. Ecobank Kenya	Private
16. Equity Bank	Public
17. Family Bank	Private
18. Fidelity Commercial Bank Limited	Private
19. First Community Bank	Private
20. Giro Commercial Bank	Private
21. Guaranty Trust Bank Kenya	Private
22. Guardian Bank	Private
23. Gulf African Bank	Private
24. Habib Bank	Private
25. Habib Bank AG Zurich	Private

26. Housing Finance Company of Kenya	Public
27. I&M Bank	Public
28. Imperial Bank Kenya (In receivership)	Private
29. Jamii Bora Bank	Private
30. Kenya Commercial Bank	Public
31. Middle East Bank Kenya	Private
32. National Bank of Kenya	Public
33. NIC Bank	Public
34. Oriental Commercial Bank	Private
35. Paramount Universal Bank	Private
36. Prime Bank (Kenya)	Private
37. Sidian Bank	Private
38. Spire Bank	Private
39. Standard Chartered Kenya	Public
40. Trans National Bank Kenya	Private
41. United Bank for Africa	Private
42. Victoria Commercial Bank	Private

(Central Bank of Kenya, 2016) (NSE, 2016)

HF
NBK
I&M
NIC
STANBIC
DTB
STANCH ART
Barclays
COOP
Equity
KCB

Appendix B: Full Descriptive Table

Nbr. of observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	0.264	0.159	0.239	0.248	0.219	0.186	0.184	0.221	0.232	-0.154	0.053
Maximum	0.352	0.500	0.336	0.446	0.453	0.356	0.356	0.306	0.355	0.324	0.214
1st Quartile	0.282	0.329	0.275	0.323	0.354	0.244	0.229	0.237	0.285	0.110	0.090
Median	0.290	0.376	0.295	0.368	0.376	0.245	0.260	0.269	0.312	0.192	0.148
3rd Quartile	0.301	0.472	0.300	0.403	0.379	0.300	0.313	0.286	0.335	0.272	0.191
Mean	0.294	0.374	0.291	0.363	0.359	0.265	0.268	0.264	0.305	0.160	0.143
Variance (n-1)	0.001	0.014	0.001	0.004	0.005	0.003	0.003	0.001	0.001	0.023	0.003
Standard deviation (n-1)	0.026	0.117	0.032	0.065	0.068	0.050	0.058	0.031	0.038	0.153	0.058

Profitability

Liquidity

Statistic	KCB	Equity	Coop	Barclays	Stanchart	DTB	Stanbic	Nic	I&M	NBK	Hf
Nbr. of observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	0.633	0.664	0.700	0.700	0.560	0.729	0.742	0.754	0.615	0.032	0.122
Maximum	0.965	1.861	0.930	0.988	0.836	0.877	0.971	1.080	1.338	0.708	1.488
1st Quartile	0.862	0.757	0.740	0.769	0.595	0.760	0.871	0.887	1.005	0.048	0.282
Median	0.930	0.970	0.807	0.790	0.690	0.795	0.879	0.913	1.073	0.507	1.229
3rd Quartile	0.946	1.510	0.865	0.875	0.757	0.827	0.935	1.024	1.236	0.650	1.316
Mean	0.881	1.146	0.801	0.823	0.688	0.796	0.886	0.936	1.075	0.372	0.909
Variance (n-1)	0.011	0.202	0.007	0.009	0.010	0.002	0.005	0.010	0.049	0.099	0.332
Standard deviation (n-1)	0.103	0.449	0.081	0.093	0.100	0.047	0.071	0.100	0.222	0.315	0.576

Efficiency

Statistic	KCB	Equity	Coop	Barclays	Stanchart	DTB	Stanbic	Nic	I&M	NBK	Hf
Observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	1.369	1.048	0.583	1.649	2.012	1.344	0.024	1.781	2.202	1.178	0.336
Maximum	1.758	128.831	0.640	1.947	2.524	3.427	6.864	2.316	222.975	2.538	1.723
1st Quartile	1.447	1.493	0.594	1.747	2.194	1.889	1.533	2.000	2.498	1.270	0.470
Median	1.593	1.824	0.610	1.874	2.243	1.985	1.799	2.094	2.793	1.405	0.577
3rd Quartile	1.684	2.223	0.625	1.930	2.436	2.697	2.019	2.235	21.759	1.597	1.196
Mean	1.572	14.198	0.611	1.835	2.300	2.218	2.113	2.086	39.609	1.513	0.828
Variance (n-1)	0.020	1455.663	0.000	0.012	0.027	0.422	2.921	0.032	6192.775	0.158	0.219
SD (n-1)	0.142	38.153	0.019	0.111	0.164	0.649	1.709	0.179	78.694	0.398	0.468

Asset Quality

Statistic	KCB	Equity	Coop	Barclays	Stanchart	DTB	Stanbic	Nic	I&M	NBK	HF
Nbr. of observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	0.025	0.020	0.034	0.000	0.010	0.007	0.012	0.004	0.003	0.077	0.038
Maximum	0.090	0.070	0.370	0.065	0.120	0.031	9.607	0.119	1.714	1.804	0.382
1st Quartile	0.030	0.027	0.043	0.010	0.025	0.011	0.042	0.018	0.005	0.106	0.090
Median	0.045	0.030	0.050	0.011	0.050	0.012	0.153	0.035	0.014	0.328	0.125
3rd Quartile	0.056	0.036	0.140	0.029	0.082	0.019	6.468	0.051	0.042	0.437	0.257
Mean	0.048	0.035	0.113	0.020	0.058	0.015	3.084	0.045	0.188	0.466	0.183
Variance (n-1)	0.000	0.000	0.012	0.000	0.001	0.000	21.638	0.001	0.288	0.302	0.016

Standard deviation (n-1)	0.021	0.015	0.112	0.019	0.038	0.008	4.652	0.038	0.536	0.550	0.127
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Market returns

Statistic	Equity	KCB	Barclays	Nic	DTB	Stanchart	Stanbic	Coop	HF	I&M	Nbk
Observations	11	11	11	11	11	11	11	11	11	11	11
Minimum	-0.691	-0.669	-0.539	-0.506	-0.632	-0.388	-0.517	-0.529	-0.757	-0.024	-0.598
Maximum	0.631	0.522	0.564	0.742	0.441	0.718	1.150	0.551	1.357	0.230	1.186
1st Quartile	-0.366	-0.271	-0.138	-0.419	-0.320	-0.281	-0.304	-0.252	-0.316	0.043	-0.097
Median	-0.188	-0.097	0.054	-0.075	-0.213	-0.071	-0.139	-0.039	0.049	0.111	0.162
3rd Quartile	0.244	0.238	0.213	0.383	0.250	0.141	0.418	0.229	0.694	0.171	0.334
Mean	-0.078	-0.041	0.049	0.016	-0.082	0.012	0.099	-0.005	0.174	0.106	0.183
Variance (n-1)	0.175	0.132	0.105	0.234	0.134	0.143	0.311	0.134	0.487	0.016	0.278
SD (n-1)	0.418	0.363	0.325	0.483	0.366	0.378	0.558	0.366	0.698	0.127	0.528

