

**ECONOMIC FACTORS DETERMINING THE FINANCIAL PERFORMANCE OF
SELECTED COMMERCIAL BANKS IN KENYA**

BY


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DECLARATION

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DEDICATION

I dedicate this proposal to my wife Ndinda Edward, Daughter Ella Mokeira and Son Ray

Jabali

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ABSTRACT

Performance of commercial banks has critical implications on economic growth of countries. The Kenyan banking sector remained resilient on the backdrop of turbulence, characterized by interest rate capping in 2015 and the prolonged electioneering period in 2017 which brought uncertainties in the banking sector. This study investigated the economic factors determining the financial performance of selected commercial banks in Kenya. Specifically, the study was to determine the effects of capital adequacy, liquidity, asset quality and management efficiency on financial performance of commercial banks in Kenya. Efficient market hypothesis and modern portfolio theory guided the study. The study adopted an explanatory research design. The study used 2009-2018 secondary consolidated time Series data of 40 commercial banks from Central Bank of Kenya and International Monetary Fund. Time series econometric procedures of co-integration and Vector Error Correction model (VECM) were used so as to determine nature of the time series data and equilibrium relation between the variables. The VECM estimation results identified a significant short run and long run equilibrium relation between coefficients of Capital Adequacy, bank liquidity and management efficiency except for asset quality and financial performance of commercial banks in Kenya. The Co-efficient of Capital Adequacy was 0.164, $p=0.0217 < 0.05$, The Coefficient of Bank liquidity was 0.374, $p=0.001 < 0.05$, The Coefficient of Management Efficiency was 0.2359, $p=0.008 < 0.05$, The Coefficient of Asset Quality was 0.883, $p=0.3415 > 0.05$. The coefficients of capital Adequacy, bank liquidity and management efficiency were positive and significant at 5% level. The coefficient of asset quality was not significant at 5% level. This implied that for every unit increase in coefficient of Capital Adequacy, bank liquidity and management efficiency would increase by 0.164; 0.374 and 0.2359 units of financial performance of commercial banks in Kenya respectively in the long run. The findings indicated that no evidence was found of significant co-integration relation between Financial Performance and Asset Quality of commercial banks in Kenya. The VECM results also indicated that Asset quality and financial performance does not have a long run equilibrium during the study period. Managerial policies and strategies that are cost effective and productive efficient could raise the managerial efficiency and financial performance of banks. Findings also indicated that bank liquidity was an important driver of financial health of commercial banks in Kenya in the short run and long run implying strengthening the liquidity was critical in ensuring a strong financial base of banks which would lead to improved financial performance of commercial banks in Kenya. Based on the findings the study recommended that banks put a lot of focus on their own internal processes since capital adequacy, liquidity and management efficiency, had positive influence on their profitability policies.

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LIST OF ABBREVIATIONS AND ACRONYM

AACB	Association of African Central Banks
ACH	Automated Clearing House
A-I-A	Appropriation in Aid
A-I-A	Appropriation in Aid
AMCP	African Monetary Cooperation Program
ATM	Automatic Teller Machine
CBK	Central Bank of Kenya
CBKIP	Central Bank of Kenya Internship Program
CBR	Central Bank Rate
COMESA	Common Market for Eastern and Southern Africa
CPIA	Country Policy and Institutional Assessment
EAC	East African Community
EAMU	East African Monetary Union
EAPS	East Africa Payment System
EFTs	Electronic Fund Transfers
FP	Financial Performance
Fintech	Financial Technologies
FY	Financial Year

GDP	Gross Domestic Product
IB	Internet Banking
IMF	International Monetary Fund
KEPSS	Kenya Electronic Payments and Settlement System
KIB	Kenya Institute of Bankers
KSH	Kenya Shillings
MFB's	Microfinance Banks
MPCC	Monetary Policy Consultation Clause
MSME	Micro Small and Medium Enterprises
NDA	Net Domestic Assets
NFA	Net Foreign Assets
NSI	Net Settlement Instruction
NPL	Non-Performing Loan
OPEC	Organization of the Petroleum Exporting Countries
OTC	Over the Counter
POS	Point of Sale
REPSS	Regional Payment and Settlement System
RTGS	Real Time Gross Settlement
SACCOs	Savings and Credit Cooperative Societies

SBA	Stand-By Arrangement
SGR	Standard Gauge Railway
SSA	Sub-Saharan Africa
TMD	Treasury Mobile Direct
TRWA	Total Risk Weighted Assets
VAT	Value Added Tax
WEO	World Economic Outlook

OPERATIONAL DEFINITIONS OF TERMS

Asset Quality- the overall risk attached to the various assets held by an individual or institution (Ongore, 2013)

Bank Specific Variable-This are variables which influence the profitability of banks. They are usually within the scope of the bank to manipulate them and that they differ from bank to bank (Dang, 2011)

Capital Adequacy- is the amount of own fund available to support the bank's business and act as a buffer in case of adverse situation

Commercial Bank- A financial institution that offers a full range of retail and corporate banking products and services, such as accepting deposits giving business loans and basic investment product

Exchange rate –This refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar) (World development indicators, 2012)

Financial Performance: This is the net profit attained at the end of each year by each individual commercial bank (Ongore, 2013)

Gross Domestic Product – This is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. (World development indicators,

Liquidation-This is the process of bringing a business to an end and distributing its assets to claimants

Liquidity - Ability to fund increases in assets and meet obligations as they fall due (Dang ,2011)

Macroeconomic Variables- This are variables which influence the profitability of banks. They are usually not under the control of commercial banks

i.e. Inflation Rate and GDP (Vong and Chan, 2009).

Management Efficiency-Ability of a firm to maximize its output from a limited level of inputs (Dang, 2011)

Market Risk-This is the possibility of an investor experiencing losses due to factors that affect the overall performance of the financial markets in which he or she is involved.

Non-Performing Loan-This a sum of borrowed money upon which the debtor has not made the scheduled payments for a specified period.

Solvency-This is the ability of a company to meet its long-term debts and financial obligations

CHAPTER ONE: INTRODUCTION

1.0 Overview

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

1.1 Background to the Study

Banks play a very important role in the economic development of nations as they largely wield control over the supply of money in circulation and are the main stimuli of economic progress. Financial performance of commercial banks is usually reflected in the firm's return on equity, return on assets and net interest margin. Good financial performance rewards the shareholders for their investment. This, in turn, encourages additional investment and brings about economic growth. On the other hand, poor banking performance can lead to banking failure and crisis which have negative repercussions on the economic growth (Wahdan and Leithy, 2017)

In the last two decades (1998-2018) studies have shown that commercial banks in Sub-Saharan Africa (SSA) are more profitable than the rest of the world with an average Return on Assets (ROA) of two percent (Flamini et al., 2009). This is despite a global recession. Other risks from external sources include; capping of interest rates, volatility of the exchange rate abrupt decline in commodity prices, rapid tightening of global financial conditions, and escalating trade tensions involving major economies. The SSA region faces

risks associated with; political uncertainty in various countries, weakening aggregate demand, electioneering uncertainties, high and rising public debt levels on lack of commitment to address high fiscal deficits or implement structural reforms, increased reliance on foreign currency borrowing leading to refinancing and interest rate risks. There is also a risk of sudden capital outflows by increased foreign investors in the already shallow domestic capital markets in the region.

A more organized study of bank performance started in the late 1980's with the application of Market Power (MP) and Efficiency Structure (ES) theories (Athanasoglou *et al.*, 2005.) The MP theory states that increased external market forces results into profit. Moreover, the hypothesis suggests that only firms with large market share and well differentiated portfolio (product) can win their competitors and earn monopolistic profit. On the other hand, the ES theory suggests that enhanced managerial and scale efficiency leads to higher concentration and then to higher profitability. According to Nzongang and Atemnkeng in Olweny and Shipho (2011) balanced portfolio theory also added additional dimension into the study of bank performance. It states that the portfolio composition of the bank, its profit and the return to the shareholders is the result of the decisions made by the management and the overall policy decisions. From the above theories, it is possible to conclude that bank performance is influenced by both internal and external factors. According to Athanasoglou *et al.*, (2005) the internal factors include bank size, capital, management efficiency and risk management capacity. The same scholars contend that the major external factors that influence bank performance are macroeconomic variables such as interest rate, inflation, economic growth and other factors like ownership.

In the transition economies of Central and eastern Europe (CEE) ,financial sector is dominated by banks rather than equity markets ,even though financial system were not functional when communism system collapsed and the banks were not able to provide intermediary services in this countries (Haselmann,Watchtel, & Robot, 2017) .The transition of the CEE banking system started in the late 1980's and early 1990's with the emergency of the banking sector in the planned economies, which included the process of bank privatization

The financial performance of banks has critical implications for economic growth of countries (Ongore, 2013). The financial crisis of 2007–2009 reflected the importance of keeping bank profitability for national economy as well as global economy, under surveillance at all time. Poor bank performance has a negative impact on economic growth and development. Poor bank performance can lead to failures and crises. Banking crisis could entail financial crisis which in turn brings the economic meltdown as happened in the United States in 2007 (Wahdan and Leithy, 2017).

Commercial banks that have better financial performance are considered to have better ability to resist any negative shocks from the external environment and thus be able to contribute to the stability of a country's financial system (Athanasoglou et al., 2008). According to Wahdan and Leithy (2017), the financial performance of the banks is affected by the function of internal and external factors. Internal factors refer to the indicators derived from the financial statements of banks (balance sheet and income statement) and therefore can be regarded as specific factor of banks' profitability. External factors are variables that are not related to the management of the bank, but they reflect the economic

and regulatory environment that affect indirectly in the operation and profitability of the banks (Ongore ,2013)

There has been a noticed change in the financial configuration of countries in general and its effect on the performance of commercial banks in particular. It is obvious that a sound and profitable banking sector is able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou *et al*, 2005), Moreover, commercial banks play a significant role in the economic growth of countries, through their intermediation function. Banks also play a vital role in the efficient allocation of resources of countries by mobilizing resources for productive activities; They transfer funds from those who don't have productive use of it to those with productive venture. In addition to resource allocation good bank performance rewards the shareholders with sufficient return for their investment. When there is return there shall be an investment which, in turn, brings about economic growth.

A lot of researchers in the banking sector and in the academic world have given their attention to the issue of financial performance of commercial banks due to the fact that the banking industry is a major player in the economic development of a country (Ayele, 2012). These studies have shown that the performance of commercial banks can be expressed or measured in various terms and these include competition, productivity, profitability, efficiency as well as concentration (Macit, 2015).

The performance of commercial banks can be affected by internal and external factors which can be classified into bank specific variables (internal) and macroeconomic variables

(Ongore, 2013). The internal factors are individual bank characteristics which affect the bank's performance, these factors are basically influenced by the internal decisions of management and board. The external factors are sector wide or country wide factors which are beyond the control of the company and affect the profitability of banks (Ongore, 2013). Also, external factors are variables that are not related to the management of the bank, but they reflect the economic and regulatory environment that affect indirectly in the operation and profitability of the banks (Tobias and Themba 2011).

Elsiefy (2013) argues that banks with sufficient investment in liquid assets have the ability to withstand liquidity crisis. The challenge is to define the optimum amount of liquidity given by the risk/return trade-off. The author argued that higher liquidity compared to the average for the sector also reflect inefficiency of the banking institution. The higher the liquidity, the lower will be the profitability, by implying that there is a negative relationship between profitability and liquidity.

According to Ongore and Kusa, (2013), The most common financial ratios that reflect the liquidity position of a bank are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance, Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said and Tumin, 2011).

The bank's asset is another bank specific variable that affects the financial performance of commercial banks. The bank asset includes among others current asset, credit portfolio, fixed asset, and other investments (Athanasoglou et al., 2005).

Loans are the major asset of commercial banks from which they generate income. The quality of loan portfolio determines the profitability of banks. The loan portfolio quality has a direct bearing on bank profitability. The highest risk facing a bank is the losses derived from delinquent loans (Dang, 2011). Thus, nonperforming loan ratios are the best proxies for asset quality. Often a growing asset (size) related to the age of the bank (Athanasoglou et al., 2005). More often than not the loan of a bank is the major asset that generates the major share of the bank's income.

Olalekan and Adeyinka (2013) study examined the effect of capital adequacy on profitability of deposit-taking banks in Nigeria. The research examined the effect of capital adequacy on both foreign and domestic banks in Nigeria on their profitability. The study used primary data collected by questionnaires distributed to banking employees, involving a sample of 518 respondents with a response rate of 76%. The author used the secondary data from the published financial statements of banks for the period 2006–2010. The findings from this research for the primary data analysis revealed a non-significant relationship but the secondary data analysis showed a positive and significant relationship between capital adequacy and bank profitability.

Capital adequacy for commercial banks is determined by various variables namely the log of total assets (LTA), loan loss provisions to total loans, loans to assets, tax to operating

profit before tax, non-interest income to total assets, and overhead expenses to total assets. Capitalization is principal measure for capital adequacy and is a measure of shareholders' equity to total assets. On the other hand, liquidity of banks is considered to have an impact on the financial performance of the institutions Ongore and Kusa, (2013). Various researchers found out that insufficient liquidity of commercial banks is a major reason for failure in the business. According to Ongore and Kusa, (2013), there exists a positive relationship between the level of liquidity and the financial performance of banks.

Banks capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs. Moreover, greater bank capital reduces the chance of distress (Diamond, 2000). However, it is not without drawbacks that it induces weak demand for liability, the cheapest sources of fund capital adequacy are the level of capital required by the banks to enable them withstand the risks such as credit, market and operational risks they are exposed to in order to absorb the potential loses and protect the bank's debtors (Ongore and Kusa, 2013).

Management efficiency is one of the banks specific factors that determine the financial performance. It is represented by different financial ratios like total asset growth, loan growth rate and earnings growth rate. Yet, it is one of the complexes subject to capture with financial ratios. Moreover, operational efficiency in managing the operating expenses is another dimension for management quality. The performance of management is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staff (CBK, 2017). The capability of the management to deploy its resources efficiently, income maximization, reducing

operating costs can be measured by financial ratios. One of this ratios used to measure management quality is operating profit to income ratio (Rahman et al. in Ilhomovich, 2009; Sangmi and Nazir, 2010).. The ratio of operating expenses to total asset is expected to be negatively associated with profitability. Management quality in this regard, determines the level of operating expenses and in turn affects profitability (Athanasoglou et al. 2005)

Umar et al. (2014) study observed that inflation was a significant determinant. Inflation was considered to be very important in designing programs with the aspiration of achieving greater efficiency by lenders, managers, investors as well as shareholders. The effects of inflation on the economy were diverse and could be both positive and negative.

The GDP growth rate affects the demand for banks asset (Ismi, 2004). When the GDP growth is negative the demand for credit falls which in turn negatively affect the profitability of banks. On the contrary, in developing economies as expressed by positive GDP growth, the demand for credit is high due to the nature of business cycle. During boom the demand for credit is high compared to recession (Athanasoglou et al., 2005). According to Vong and Chan, 2014, In the analysis of the Greek situation that the relationship between inflation level and banks profitability remains to be debatable. The direction of the relationship is not clear.

Kenya's financial sector is vulnerable to fragility in the global and domestic economies emanating from financial markets uncertainties; trade and geopolitical tensions; corruption, money laundering and financing of terrorism; and rapid adoption of financial technology and innovations (CBK, 2017). However, sustained recovery in global and domestic

economies increased consolidation through mergers and acquisitions and leveraging on financial technology is expected to buttress the sector's stability and growth.

1.3 Banking Industry in Kenya

The banking sector in Kenya is governed by various Acts such as The Companies Act, the Banking Act, the Central Bank of Kenya Act and various other prudential guidelines that have been issued by the Central Bank of Kenya (CBK) over the years. The Kenyan commercial banks have come together under an umbrella body referred to as the Kenya Bankers Association (KBA), which serves as a lobby body for the members' interests and addresses issues affecting the registered commercial banks in the country (CBK, 2018).

As at December 31, 2018, the Kenyan banking sector comprised of the Central Bank of Kenya (CBK), as the regulatory authority, 43 banking institutions (42 commercial banks and 1 mortgage finance company), 9 representative offices of foreign banks, 13 Microfinance Banks (MFBs), 3 Credit Reference Bureaus (CRBs), 19 Money Remittance Providers (MRPs), 8 non-operating bank holding companies and 70 foreign exchange (forex) bureaus. Out of the 43 bank institutions, 40 were privately owned while the Kenya Government had majority ownership in 3 institutions (CBK, 2018). The CBK is normally responsible for formulating and implementing the monetary policy adopted by the Kenyan government and ensuring there is liquidity, solvency and proper functioning of the financial system in the country. The entity also publishes valuable information related to the banking industry in Kenya and the non-banking financial institutions, as well as information about the interest rates prevalent in the country and other publications and guidelines

The banking sector in Kenya was liberalized in 1995 which led to the removal of exchange controls. Since then, the Kenyan banks have realized tremendous growth and have expanded to the East African region. The financial services industry in Kenya is being impacted by the ever-changing consumer needs, innovative financial products, technological advancement and the use of multiple delivery channels. To remain competitive in the new landscape, banks have continued to introduce new products, expand the existing ones, and add new delivery channels. Banks strive to enhance access to customers as well as differentiating their products and services by use of alternative delivery channels such as e-banking and m-banking. During the year 2018, banks submitted over 60 applications seeking CBK's approval to introduce new products and related charges. Most of the applications sought to introduce cashless payment systems, money transfer services in partnership with international money remittance service providers while others were enhancing existing products. The products will facilitate cashless payment of goods and services and aid in flow of foreign remittances.

Kenya's financial sector remains stable and resilient albeit emerging risks and vulnerabilities associated with both domestic and external uncertainties, adoption of technology and innovations. For instance, the banking industry, which dominates the financial sector by assets and profitability, has sufficient capital buffers to withstand shocks. In addition, the industry is adopting new business models including financial technologies and innovations to drive growth and manage risks. In particular, risks to the outlook have reduced in the near term due to recovery of global economy. However, risks persist with respect to the global front; Tightening global financial market conditions from

current level into the medium-term, Trade tensions including those between USA and China, USA and Europe, and Britain and European Union (Brexit), could affect Kenya's economy and the financial sector; and Geopolitical tensions both within and across countries, including USA and Iran as well as North Korea that could heighten risks

The banking industry in Kenya has also involved itself in automation, moving from the traditional banking to better meet the growing complex needs of their customer and globalization challenges. There has been increased competition from local banks as well as international banks, some of which are new players in the country. This has served the Kenyan economy well as the customers and shareholder are the ones who have benefited the most. In the last decade (2008-2017), three waves of turbulence have been experienced that were caused by: no regulation, failure of 'political banks', inefficiency, no financial inclusion and liberalization of the banking Industry in Kenya. However, the Banking Act and Regulations have over time been considerably strengthened (CBK, 2017).

An analysis of the Kenya's economic environment indicates that the overall economic growth realized over the last five years (2014-2018) ranges between 3%-6% which is largely below the government target range of 6-8%. Based on the exchange rate developments, the shilling performance against the US\$ is fairly in line with developments in the international markets attributed to CBK's active participation in the market to stem volatilities (CBK, 2018). During this period the banking sector has experienced increased consolidation through acquisition activities. Acquisition activities during the recent years include the Acquisition of Giro Bank by I&M Holdings Ltd in February 2017, Acquisition of Fidelity Commercial Bank Ltd by SBM Bank (Kenya) Ltd in May 2017 and the

acquisition of Habib Bank (K) Ltd. (HBL) by Diamond Trust Bank Kenya (DTBK) in August 2017 (CBK, 2019).

The Central Bank of Kenya which governs banks classifies commercial banks based on their assets. Tier 1 banks are large banks that have hundreds of billions in assets and are not likely to collapse financially. They are the top banks in Kenya. Tier 2 banks are medium-sized banks while tier 3 consists of small banks. The second-tier banks continue to wrestle out large banks in the control of market shares, with the share of deposits increasing particularly for medium banks and declining for large banks. Overall, there has been immense strategic shifts in the banking industry with: niche banks offering more options to consumers, increasing the number of banks to 43, 75% of the Kenyan population being served by various aspects of the financial sector, over 77% of Kenyans within 5kms of a service point, an increase of Agency Banking with over 35000 agents countrywide and an explosive growth of mobile money. In regional comparison, Kenya is only beaten by Mauritius and South Africa in the African Continent (CBK, 2018).

According to Central Bank of Kenya, other notable changes in the commercial banks operations are enhanced efforts by institutions to leverage on existing ICT systems to improve productivity and navigate the turbulence in the year. Commercial banks continued to leverage on digital platforms to drive business strategies and models aimed at providing banking services more efficiently. Banks are reviewing their business and digitizing some processes that were traditionally manual such as personal loan application and disbursements and know your Customer (KYC) documentation. These digital innovations have enabled banks to reach out to more customers and offer them services more

efficiently. With the adoption of emerging technologies like block chain, artificial intelligence, machine learning and big data analytics, financial technology (FinTech) is expected to continue transforming the banking and customer experience.

The integration of digital technology into the banking business has led to fundamental changes in how the banking sector operates and delivers value to its customers. Mobile loans have greatly leveraged on this technology; most banks have acknowledged the transaction commission have greatly improved their performance. Banks that will embrace innovation and adopt new technologies will have unprecedented opportunities to change and improve how they provide financial services and products. At the same time, they must manage the risks created by the new digital economy. The integration of these technologies could see enhanced: due diligence and Know Your Customer (KYC) procedures in identity management and control, and a fundamental enhancement of the customer experience (CBK, 2019). With this enhanced use of ICT, there have been also increased cases of ICT related frauds in the recent years. Data on fraud reported to Central bank of Kenya, Banking Fraud and Investigation Department (BFID) indicates that cases relating to computer, mobile and internet banking are on the rise. Another emerging threat has been cyber-crime where criminals gain unauthorized access to institutions' computers programs and data and perpetrate frauds (CBK, 2019).

According to CBK (2018), the period 2016-2018 was the most difficult period that the Kenyan banking sector has dealt with in recent times, banks steered through a "perfect storm" of interest rate capping, unfavorable weather conditions and a prolonged electioneering period. Interest rates capping impacted on banks pricing of credit facilities

and deposits. Unfavorable weather conditions adversely impacted various sectors of the economy, hence affecting lending in the sectors. Prolonged electioneering brought a lot of uncertainties to the business environment. Despite the storm, the banking sector remained well capitalized with the capital adequacy ratio standing at 18.8 percent in 2017, well above the regulatory requirement of 14.5 percent. Similarly, the banking sector's average liquidity ratio in 2017 stood at 43.7 percent which was well above the minimum regulatory liquidity ratio of 20 percent (CBK, 2017). The banking report further avers that the banking sector remained profitable by posting a profit before tax of Ksh.133.2 billion in 2017.

1.4 Statement of the Problem

Banks and other financial institutions are a unique set of business firms whose assets and liabilities, regulatory restrictions, economic functions and operations make them important subjects of research particularly in the conditions of the emerging financial sectors (Almazari, 2012)

The economic development of any country depends on the existence of a well-organized financial system. The banking sector acts as an engine in enhancing modern trade and commerce for business firms and individual traders (Melaku, 2016). Poor bank performance can lead to a financial crisis which in turn brings the economic meltdown as happened in the United States in 2007 (Marshall, 2009)

The banking sector in Kenya is faced with numerous challenges such as stock market illiquidity, economic depression and among other bank-specific and macroeconomic variables (CBK, 2018). Most of the studies on bank financial performance determinants

have covered developed economies, whereas much less studies covered developing economies such as Kenya's economy. Some of these studies include Aburime (2008) in Nigeria, Al-Tamini (2010) in UAE and Clair (2004) in Singapore. Moreover, results of these studies have been inconsistent and conflicting.

Studies that are close to economic factors determining commercial banks performance in Kenya include Njihia (2005), Mwanja (2009), Okutoyi (1988), and Ndungu (2003). These studies were however designed to focus on each factor of bank financial performance to the exclusion of the other factors while some only focused on listed commercial banks as in the case of Ndungu (2003).

Further, various studies lack consensus on the determinants of bank profitability, Ongore (2013) argue that macroeconomic variables insignificantly affect bank profitability whereas Athanasoglou et al.,(2006) found mixed results with regard to macroeconomic variables. This presents a research gap. This study therefore seeks to bridge this inconclusive gap and the methodological gap of generalization by establishing the economic factors determining the financial performance of selected commercial banks in Kenya

1.5 Objectives of the Study

1.5.1 General Objective

The general objective of this study is to analyze the effect of economic factors on financial performance of commercial banks in Kenya

1.5.2 Specific Objectives

The study sought to achieve the following specific objectives:

1. To establish the effect of asset quality on the financial performance of commercial banks in Kenya.
2. To determine the effect of capital adequacy on the financial performance of commercial banks in Kenya.
3. To investigate effect of liquidity on the financial performance of commercial banks in Kenya.
4. To explore the effect of managerial efficiency on the financial performance of commercial banks in Kenya.

1.6 Research Hypotheses

This study tested the following hypotheses:

H₀₁: There is no significant influence of asset quality on the financial performance of commercial banks in Kenya.

H₀₂: There is no significant effect of capital adequacy on the financial performance of commercial banks in Kenya.

H₀₃: There is no significant effect of managerial efficiency on the financial performance of commercial banks in Kenya.

H₀₄: There is no significant influence of liquidity on the financial performance of commercial banks in Kenya.

1.7 Significance of the Study

This study aimed at generating knowledge regarding financial performance of the commercial banks sector in Kenya as at December 2018. The research investigated the effect of economic factors on financial performance of selected commercial banks in Kenya. The results could be of benefit to various categories of interested stakeholders as follows:

The findings could be of great help to scholars and researchers interested in understanding the various economic factors influencing financial performance of selected commercial banks in Kenya. The scholars also may benefit in understanding the relationship of capital adequacy, asset quality, managerial efficiency, liquidity and financial performance of commercial banks sector in Kenya and conducting further studies.

The findings of this study would be important to the commercial banks in Kenya in informing on the effect of economic factors on the financial performance of selected commercial banks. Therefore, as the commercial firms strive to optimize their returns, it is vital to determine which determinants have the greatest effect on their financial performance so as to critically plan on how well to manage them.

The study could be of great help to policy makers, as it could help them know how they can derive sustainable bank specific variables which can work in mutual benefit to the commercial banks and business community. This is of importance especially for the commercial banks operating in rapidly changing environment.

The knowledge could be also of help to the Central Bank of Kenya as a government agent. The study could also benefit other government bodies seeking to understand how to ensure favourable macroeconomic variables exist at the same time providing the necessary support to business drive in the economy. CBK, on behalf of the government, stands to benefits from the study while carrying out commercial bank supervision by drawing on the study's recommendations to the policy makers.

1.8 Scope of the Study

The study focused on the effect of economic factors on financial performance of selected commercial banks in Kenya. This study adopted an explanatory approach by using time series data obtained from the Annual and quarterly statutory reports of Central Bank of Kenya and published reports from IMF and World Bank covering the period 2009-2018. The period of study was from the year 2009-2018.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview

This chapter provides the pertinent of theoretical literature, empirical literature, critique of the literature review and the conceptual framework.

2.2 The Concept of Financial Performance of Commercial Banks

Menicucci and Paolucci (2016) assessed and analyzed the relationship between bank internal factors and financial performance of in European banking sector in order to evaluate the impact of internal factors on achieving high profitability. This study employed a regression analysis that was done on an unbalanced panel dataset related to 28 European banks over the period 2006–2015. The researchers used the largest bank of any single country of the European Union. Regression results revealed that capital adequacy ratio and bank size have positive impact on bank profitability in Europe, while higher asset quality results in lower profitability levels. Findings from this study also suggest that banks with higher deposit ratio tend to be more profitable. The findings provide interesting insights into the characteristics and practices of profitable banks in Europe.

Abel and Le Roux (2016) investigated the determinants of banking sector profitability in Zimbabwe for the period Q1 2009–Q2 2014. Overall the results from the study showed that banking sector profitability in Zimbabwe is mostly driven by bank-specific factors. The findings of this study show that the profitability of the banking sector is dependent on bank-

level management variables. This result is very important for suggesting optimal policies to bank management on how they can improve the profitability for the banking sector.

Mehta and Bhavani (2017) examined the impact of various variables on banks' performance in the domestic commercial banking sector of the UAE, focusing on a sample of 19 banks over eight years (2006–2013) and using balanced panel data. The empirical results of the research clearly showed that the cost efficiency, maintaining a high capital adequacy ratio, and improving asset quality were the most significant variables that could impact the profitability of banks for all measures of profits. The researchers concluded that banks could have enhanced their profitability by diversifying into non-traditional source revenue, but that would have had a negative impact on the NIM.

Fantal, Kemal, & Waka (2013) assessed the relationship between selected banks specific and external corporate governance mechanisms, and bank performance as measured by ROE and ROA covering the period 2005 to 2011. The study indicated that board size and existence of audit committee in the board had statistically significant negative effect on bank performance; whereas bank size had statistically significant positive effect on bank performance. Again, capital adequacy ratio had statistically significant positive effect on bank performance. However, absence of organized stock exchange; high government intervention; lack of corporate governance awareness, absence of national standards of corporate governance and weak legal framework to protect minority shareholder rights are the major factors with adverse impact on corporate governance and bank performance in Ethiopia .

Ameur & Mhiri (2013) studied 10 commercial Tunisian banks during the period 1998 to 2011 period to identify factors explaining Tunisian bank performance. This study incorporated bank-specific as well as industry-specific and macroeconomic factors affecting bank performance. The findings suggested that the bank capitalization as well as the best managerial efficiency have positive and significant impact on the bank performance. The study also concluded that industry-specific factor such as the concentration has a negative and a significant impact on performance. Moreover, macroeconomic indicators do not have a significant impact on bank performance.

Choong, Thim, & Kyzy (2012) studied the Performance of Islamic Commercial Banks of Malaysia and analyze their performance. The empirical results indicated that credit risk, liquidity rate and concentration of Islamic commercial banking are the most contributing factors in the performance of local Islamic commercial banks in Malaysia.

Kumbirai & Webb (2010) investigated the performance of South Africa's commercial banking sector for the period 2005-2009 by employing ratio analysis. The study revealed that overall bank performance improved in the year 2005 and 2006. A significant change in trend is noticed at the onset of the global financial crisis in 2007 which cause to reduce profitability, liquidity and resulted in deteriorating credit quality in the South African banking sector.

The economic growth of countries is built on the performance of the financial sector. In 2015 the Indian banking sector experienced a remarkable transformation on account of financial sector reform and economic development. Banks had faced severe competition

and rise of cost as a result of regulatory requirements, financial and technological innovations, advent of foreign banks, and also challenges posed by the financial crisis of 2008. These changes had notably affected the performance of the Indian commercial banks and had also resulted into the expectation of boosting corporate credit growth of economy providing opportunities to banks for lending in order to fulfill these future requirements. In this direction, progressive efforts have been continually made to evaluate the performance of different banks measuring their financial position and effective management. The slowdown in domestic economy has influenced the performance of Indian banking sector during the period 2011-12. (Din Sangmi, 2015).

Almumani (2014) studied the financial performance of Saudi commercial banks that listed in the stocks market for the period 2007-2011. The study was an evaluator in nature, drawing sources of information from secondary data. The financial performance of banks was studied on the basis of financial ratios and variables. Financial performance was measured by two approaches; trend analysis and inter-firm analysis. It was found that increasing of assets, operating expenses, and cost to income caused a decrease in Saudi bank's profitability, while increasing of operating income caused an increase in the profitability of Saudi Banks. Analysis showed that all the variables of study had a positive mean value and all banks were generating income. Saudi joint venture banks proved to be more proficient in generating profits, absorbing loan losses and dominating in Saudi established banks had more capacity of absorbing asset losses.

Kumbirai and Webb (2010) carried out a study to investigate the performance of South Africa's commercial banking sector for the period 2005- 2009. Financial ratios are

employed to measure the profitability, liquidity and credit quality performance of five large South African based commercial banks. The study found that overall bank performance increased considerably in the first two years of the analysis. A significant change in trend was noticed at the onset of the global financial crisis in 2007, reaching its peak during 2008-2009. This resulted in falling profitability, low liquidity and deteriorating credit quality in the South African Banking sector.

The study on financial performance of commercial banks in Tanzania found that the overall performance of the banks had increased during the first two years of the study. Looking back at the performance monetarily despite the financial crisis globally in 2008-09, one could see how the banking system in the country remained steady and amply financed as well as supported (Zawadi Ally, 2015).

The Financial performance of a firm could be analyzed in terms of profitability, dividend growth, sales turnover, and return on investments among others. However, there is still debate among several disciplines regarding how the performance of firms should be measured and the factors that affect financial performance of companies.

According to Katrodia (2012) on the study on the financial performance of commercial banks, the banking sector and the economy of a country were closely related. On the other hand, it was important to note that the soundness of the commercial banks was largely too dependent on their financial performance which was normally used to indicate the strengths and the weaknesses of such commercial banks. The financial performance of any business organization is normally evaluated by determining their profitability. This was due to the

fact that these commercial banks must generate the necessary income in order to be able to cover their costs of operations which are incurred.

In Kenya, the performance of commercial banks had been influenced by various factors such as the prevailing economic conditions and the ownership structure. These determinants had influenced the performance in negative as well as positive ways depending on the management skills of the executives of the commercial banks.

Financial performance was the level of performance of a firm over a specific period of time and expressed in terms of the overall profits or losses incurred over the specific period under evaluation studies have shown that commercial banks Commercial banks play a vibrant role in the economic resource allocation of countries. They channel funds from depositors to investors continuously. They can do so, if they generate necessary income to cover their operational cost they incur in the due course. In other words, for sustainable intermediation function, banks needed to be profitable. Beyond the intermediation function, the financial performance of banks had critical implications for economic growth of countries Good financial performance rewards the shareholders for their investment. This encourages additional investment and brings about economic growth. Contrary poor banking performance could lead to banking failure and crisis which had negative repercussions on the economic growth (Abera, 2012).

During recent years, studies regarding the evaluation of bank performances, particularly commercial banks, have recorded an increase of attention to them. There were a number of

empirical studies on evaluation of commercial banks performance. However much of these studies were done in developed countries, less in developing ones (Ayanda et al. 2013).

Erina and Lace (2013) through their research were able to find interconnection between bank-specific factors and macroeconomic indicators in the Latvian commercial banks for period 2006–2011. The authors conducted a survey of scientific literature and analyzed the profitability indicators of commercial banks using descriptive statistics, data correlation and regression analysis. On the basis of the results obtained, the authors have concluded that profitability has had a positive effect on operational efficiency, portfolio composition and management, while it has had a negative effect on the capital and credit risks, as measured according to ROA, while according to ROE, positive influence is exerted on composition of the capital portfolio and negative influence on operational efficiency and credit risk.

Other empirical studies on the bank profitability literature have focused mainly on a specific country, including the US (Berger, 1995; Angbazo, 1997), Greece (Mamatzakis and Remoundos, 2003; Kosmidou, 2006). Molyneux and Thornton (1992) were the first to investigate a multi-country setting by examining the determinants of bank profitability for a panel of European countries, followed by Abreu and Mendes (2001). Other multi-country studies include Hassan and Bashir (2003), who examined profitability for a sample of Islamic banks from 21 countries; and Demirguc-Kunt and Huizinga (1999) who consider a comprehensive set of bank specific characteristics, as well as macroeconomic conditions, taxation, regulations, financial structure and legal indicators to examine the determinants of bank net interest margins in over 80 countries. This group of studies also includes Haslem (1968), Short (1979), Bourke (1989).

2.2.1 Return on Equity (ROE)

This is the amount of net income returned as a percentage of shareholders' equity. Return on equity (also known as "return on net worth" [RONW]) measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. Net income is for the full fiscal year (before dividends paid to common stockholders but after dividends to preferred stock.) Shareholders' equity does not include preferred shares. ROE is useful in comparing the profitability of a company to that of other firms in the same industry. It illustrates how effective the company is at turning the cash put into the business into greater gains and growth for the company and investors. The higher the return on equity, the more efficient the company's operations are making use of those funds.

2.2.2 Return on Asset (ROA)

This is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Khrawish (2011) investigates the performance of commercial banks in Jordan during the period from 2000–2010. The researcher found there are significant and positive relationships between ROA and the Bank Size, Total Equity/Total Assets ratio, Total Liabilities/Total Assets ratio, Net Interest Margin and Exchange Rate of the commercial bank. ROA gives investors an idea of how effective the company is in converting the money it invests into net income. The higher the ROA number, the better, because the company is earning more money on less investment. ROA

also can be used when comparing a company's performance between periods, or between two different companies of similar size and industry.

2.2.3 Net Interest Margin (NIM)

Net Interest Margin (NIM) is a profitability ratio that measures how well a company is making investment decisions by comparing the income, expenses, and debt of these investments. The NIM ratio measures the profit a company makes on its investing activities as a percentage of total investing assets. Banks and other financial institutions typically use this ratio to analyze their investment decisions and track the profitability of their lending operations. This way they can adjust their lending practices to maximize profitability.

Investment firms also use this margin to measure the success of a fund manager's investment decision-making. A positive percentage indicates that the fund manager made good decisions and was able to a profit on his investments. A negative ratio, on the other hand, means the fund manager lost money on his investments because the interest expenses exceeded the investment earnings.

2.3 Theoretical Review

The researcher will explore two theories relevant to the problem; Efficient Market Hypothesis and Modern Portfolio Theory.

2.3.1 Efficient Market Hypothesis

This hypothesis was formulated by Fama (1970). According to Fama (1970), an efficient market hypothesis (EMH) dictates that net earnings due to investor's competition following profit-maximizing behavior high profits would be impossible to be experienced. Fama (1970) differentiated three systems of EMH: the weak one, the semi-strong one and the strong one. The most empirical research has been formed by the semi-strong form of EMH. The EMH presumed actors in economy have everything necessary in regards to facts relating to all fluctuations in macroeconomic variables giving reflection in stock prices. Source of stock price changes is determined by macroeconomic variables such as money supply in the economy, inflation, and exchange rate been expounded by various researchers (Fama, 1981; Chen et al., 1986; Mayasami & Sims, 2002). Efficient market hypothesis is significant to this study because it helps in making inferences that changes in these macroeconomic factors definitely affect financial performance of commercial banks.

2.3.2 Modern Portfolio Theory

This theory was advanced by Markowitz in 1952. According to Markowitz (1952), a portfolio is a collection of securities. As most securities are available, investments have uncertain returns and thus risky, one needs to establish which portfolio to own. Markowitz asserts investors should base their portfolio decisions on expected returns and standard deviations. Markowitz (1952) developed a basic and most accepted model for portfolio selection, by introducing the usage of expected rate of return and expected risk for a portfolio. He identified the risk-reduction benefits associated with holding a diversified

portfolio of assets. The objective of a portfolio may be for capital gains or for income, or a mixture of both. A growth-oriented portfolio is a collection of investments selected for their price appreciation potential, while an income-oriented portfolio consists of investments selected for their current income of dividends or interest. At the end of the day, investors had to make decisions of how to trade their portfolios for maximum benefits.

2.3.3 The Trade-off Theory

Trade off theory is the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. An important purpose of the theory is to explain the fact that corporations usually are financed partly with debt and partly with equity. Jensen (1986) argues that debt is an efficient means by which to reduce the agency costs associated with equity. Klaus and Litzenberger show that with the tax advantages of debt, optimal capital structure includes debt financing. Ross (1977) and Leland and Pyle (1977) argue that debt can be valuable as a device for signaling firm value. The three main hypotheses that are used to explain differences in capital structure between companies are the transaction-cost hypothesis, the asymmetric information hypothesis and the tax hypothesis. According to Harris and Raviv (1991), leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability and uniqueness of the product.

This theory claims that a firm's optimal debt ratio is determined by a trade-off between the losses and gains of borrowing, holding the firm's assets and investment plans constant. The firm substitute's debt for equity or equity for debt until the value of the firm is maximized. The gain of debt is primarily the tax-shelter effect, which arises when paid interest on debt is deductible on the profit and loss account. The costs of debt are mainly direct and indirect bankruptcy costs. The original static trade-off theory is actually a sub theory of the general theory of capital structure because there are only two assumptions that are broken here, the no tax incentive assumption and the no bankruptcy cost assumption.

In the more general trade off theory several other arguments are used for why firms might try to adjust their capital structure to some target. Leverage also depends on restrictions in the debt-contracts, takeover possibilities and the reputation of management. A negative correlation between debt and monitoring costs is proposed by Harris and Raviv (1990). Diamond (1989) suggest that vintage firms with a long history of credits will have relatively low default probability and lower agency costs using debt financing than newly established firms. A common factor for all these firm characteristics are that they are proxies meant to measure some form of costs related to a principal-agent problem. There may simultaneously be several principal-agent problems between the different classes of securities in the firm or between stockholders and managers in the firm. This multiplicity of problems can easily confuse the analyst and lend an air of incomprehensibility to the field of corporate finance. A construction of a positive theory of debt financing, builds on arguments on the advantages and disadvantages of debt. First, debt is a factor of the

ownership structure that disciplines managers. Limiting control to a few agents that control the common stock, while the rest of the capital is raised through bond sale, can reduce agency cost of management.

2.4 Empirical Literature Review

This section provides the empirical literature on the independent variables of this study; Capital Adequacy, Asset Quality, Liquidity and Management efficiency, with regard to their influence on financial performance of commercial banks.

2.4.1 Capital Adequacy and Financial Performance of Commercial Banks

Capital adequacy and its availability ultimately determine the robustness of financial institutions to shocks to their balance sheet. Thus, it is critical to track capital adequacy ratios that taking into account the most important financial risks—foreign exchange, credit, and interest rate risks involved in off-balance sheet operations. The most commonly used indicator is the ratio of capital to risk-weighted assets. A bank with a high capital-to-asset ratio is protected against operating losses more than a bank with a lower ratio, although this depends on the relative risk of loss at each bank. Thus the higher the percentage, the lower the chance of facing financial distress.

The Central Bank of Kenya Prudential Guideline on Capital Adequacy requires banks to adhere to the prescribed capital adequacy prudential ratios. The minimum regulatory capital adequacy ratios, which are measured by the ratio of Core Capital and Total Capital to Total

Risk Weighted Assets, are 10.5 percent and 14.5 percent respectively. Capital adequacy determines the capacity of a bank in terms of meeting the time liabilities and other risks such as credit risk, operational risk; etc. It helps cushion the bank against potential losses and hence protects the interests of the bank's depositors and other lenders. A bank with insufficient capital is more likely to turn insolvent in the face of adverse development on the asset side of its balance sheet than a sufficiently capitalized one. Past studies argue that a capital adequacy requirement is effective in the sense that it improves the soundness and safety of the banking sector and consequently its profitability (Gilbert and Wheelock, 2013).

According to Menicucci and Paolucci (2016), the adequacy of capital is evaluated on the basis of capital adequacy ratio (CAR). Capital adequacy ratio indicates the internal strength of the bank to withstand losses during crisis. Capital adequacy ratio is directly proportional to the resilience of the bank to crisis situations. It has also a direct effect on the financial performance of banks by determining its expansion to risky but profitable ventures or areas (Menicucci and Paolucci (2016)).

Putunoi, and Mutuku, (2013) studied the influence of capital adequacy on bank Financial Performance in Kenya, their study used the quarterly data of 2000 to 2010, similar to the current study, their study used VECM modelling to observe the long run relationship between the variables. They found a significant co-integration between the variables, Capital adequacy and financial performance. They further found that the two variables are related in the long run and not short run.

Umoru ,and Osemegie, (2016) study examined the degree of significance of the capital adequacy ratio in influencing the financial deeds of Nigerian banks by applying the feasible GLS estimator technique on the pooled panel model for the period of 2007 to 2015. Empirical evidence supports the overriding impact of capital adequacy in enhancing the financial deeds of Nigerian banks. Nevertheless, the impact of the estimated capital adequacy is below 30%. The policy stance of the empirics holds thus that depositor's money in the banking sector has not been absolutely assured. Hence, the deposit money banks might not be able to fulfil their liabilities and risk. In light of the findings, we suggested a constant reassessment of the least amount of capital required of banks by the CBN.

2.4.2 Asset Quality and Financial Performance of Commercial Banks

The Asset quality also referred to as loan quality has been defined as the overall risk attached to the various assets held by an individual or institution. The asset quality is one of the most critical areas in determining the condition of a bank. The bank asset includes among others current asset, credit portfolio, fixed asset, and other investments. The primary factor affecting overall asset quality is the quality of the loan portfolio and the credit administration program. Loans comprise majority of banks asset and carry the greatest amount of risk to their capital. The Central Bank's Prudential Guideline on Risk Classification of Assets and Provisioning requires commercial banks to classify facilities extended to their customers based on performance. The performance criterion is based on

repayment ability of the borrower and the loans are classified as either normal, watch, substandard, doubtful or loss.

According Menicucci and Paolucci (2016) bank's ranking is significantly affected by asset quality which is always an essential factor in rating and management evaluation. Abel and Le Roux (2016) also opined that one of the key features that the best commercial banks hold is good quality assets. Given that bad quality assets can prompt a bank rating downgrade and that it becomes more difficult to earn depositors' trust, such banks can therefore only attract deposits by having a higher deposit rate. Thus, a conclusion can be drawn: asset quality will not only influence the operating costs of banks, but will also affect the interest costs of the banks as well as their operating performance. Provisioning of bad loans eats into the net interest margin of commercial banks and thus affecting pretax profit declared by commercial banks.

Abata (2013) examined banks asset quality and performance in Nigeria using secondary data obtained from the annual reports and accounts of the six largest banks listed on the Nigeria Stock Exchange based on market capitalization with a sample interval of fifteen-year period from 1999 to 2013. The study adopted the use of ratios as a measure of bank performance and asset quality since it is a verifiable means for gauging the firms' level of activities while the data were analysed using the Pearson correlation and regression tool of the SPSS 17.0. The findings revealed that asset quality had a statistically relationship and influence on bank performance.

Kadioglu, Telceken and Ocal, (2017) study investigated whether non-performing loans effect the bank's profitability in Turkey. The study applied a panel regression method to the quarterly data set including 1809 observation belongs to 55 Banks in Turkey during the period from 1st quarter of 2005 to 3rd quarter of 2016. It is found that there is a significant, negative relationship between non-performing loans and bank profitability which is measured by return on equity and return on asset. The higher non-performing loans, the lower asset quality, leads to the lower return on equity and return on asset, and the lower non-performing loans, the higher asset quality, leads to the higher return on equity and return on asset

2.4.3 Management Efficiency and Financial Performance of Commercial Banks

Management efficiency is one of the factors affecting financial banks performance (Ongore, 2013).According to Allen and Rai (2014), financial performance can be defined as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Efficiency can be measured in three ways; Maximisation of output, minimization of cost and maximisation of profits.

A firm is regarded efficient if it's able to maximize the output from a limited level of inputs. The capability of the management to deploy its resources efficiently, income maximization, reducing operating costs can be measured by financial ratios.

The other important ratio is that proxy management quality is expense to asset ratio. The performance of management is quite often expressed qualitatively through subjective

evaluation of management systems, organizational discipline, control systems, quality of staff, and others. Yet, some financial ratios of the financial statements act as a proxy for management efficiency. The capability of the management to deploy its resources efficiently, income maximization, reducing operating costs can be measured by financial ratios (Ongore, 2013). The ratio of operating expenses to total asset is negatively associated with profitability (Kumbhakar and Lovell, 2013).

Duncan, and Elliott, (2004) studied the relationships between efficiency, financial performance and customer service quality among a representative cross-section of Australian banks and credit unions and the correlations between these categories of measures. In particular, it seeks to explore the strength of the relationship between efficiency, financial performance and service quality. Results show that all financial performance measures (interest margin, expense/income, return on assets and capital adequacy) are positively correlated with customer service quality scores. In contrast, the absence of a consistently positive relationship between efficiency and financial performance suggests that financial institutions that pursue improved financial performance through the single-minded pursuit of lower costs may be fundamentally misguided.

Nasserinia, Ariff, and Fan Fah, (2014) studied key determinants of Japanese Commercial Banks Performance. The results suggested that net interest margin is an important performance variable. It is negatively correlated with credit risk, capital adequacy, while liquidity risk, asset quality, management efficiency have positive influences. The effects of income diversification and size are positive though not significant; so, is bank concentration positive for performance. GDP growth and money supply have negative and

significant relationships on performance although their effects are marginal compared with bank-specific variables. The global crisis did have significant effect. To take into account profit persistence, GMM technique was applied and it produced moderate support for earnings persistence and there is good deal of competition.

2.4.4 Liquidity Management and Financial Performance of Commercial Banks

Liquidity held by commercial banks depicts their ability to fund increases in assets and meet obligations as they fall due. Liquidity is one of the important financial stability indicators since liquidity shortfall in one bank can cause systemic crisis in the banking sector due to their interconnected operations. According to Abel and Le Roux (2016) adequate level of liquidity is positively related with bank profitability. A high liquidity ratio indicates that the bank is more affluent. However, a bank needs to take care in hedging liquidity risk to ensure its own liquidity under all rational conditions. It is possible only when the percentage of funds ploughed in the investments with high returns is large. The CBK closely monitors the banking sector particularly on liquidity and credit risks. Commercial Banks that faces liquidity challenges and are not able to access liquidity in the market use the liquidity facilities available at the CBK such as intraday liquidity facility, rediscount of government securities, open market operations and lender of last resort window. Thus the availability of funds to invest in government securities and also lend out as credit facilities to individuals and corporates leads to high financial performance.

Ongore, and Kusa, (2013) Studied the moderating effect of ownership structure on bank performance, the authors used linear multiple regression model and Generalized Least

Square on panel data to estimate the parameters. The findings showed that bank specific factors significantly affect the performance of commercial banks in Kenya, except for liquidity variable. But the overall effect of macroeconomic variables was inconclusive at 5% significance level. The moderating role of ownership identity on the financial performance of commercial banks was insignificant. Thus, it can be concluded that the financial performance of commercial banks in Kenya is driven mainly by board and management decisions, while macroeconomic factors have insignificant contribution

Salim, and Bilal ,(2016) , research investigated and examined the impact Basel III Implementation on financial performance of commercial banks in Omani. The annual data for all Omani commercial banks during 2013-2015 were used for calculating key financial ratios in order to assess the impact of Basel III implementation on financial performance in Omani commercial banks. To test whether there is a relationship between Basel III implementation and profitability in commercial banking sector , the research used a correlation analyses model, Ordinary and Least Square (OLS) estimation obtained from an SPSS 17.0 package was adopted to analyze the relationship between the variables, where financial performance or profitability of commercial banks was measured in terms of return on assets (ROA), return on equity (ROE) , efficiency ratio (EFR), net Interest margin (NIM) and debt-to equity ratio. The findings of the research established a positive impact of Basel III implementation on financial performance of commercial banks in Oman, however this impact is not statically significant.

2.5 Research Gap

Most of the studies on bank financial performance determinants have covered developed economies, whereas much less studies covered developing economies such as Kenya's economy. Some of these studies include Aburime (2008) in Nigeria, Al-Tamini (2010) in UAE and Clair (2004) in Singapore. Moreover, results of these studies have been inconsistent and conflicting. Studies that are close to macroeconomics determinants of bank performance in Kenya include Njihia (2005), Mwanja (2009), Okutoyi (1988), and Ndungu (2003). These studies were however designed to focus on each factor of bank financial performance to the exclusion of the other factors while some only focused on listed commercial banks as in the case of Ndungu (2003). Further, various studies lack consensus on the determinants of bank profitability, Ongore (2013) argue that macroeconomic variables insignificantly affect bank profitability whereas Athanasoglou et al., (2006) found mixed results with regard to macroeconomic variables. This presents a research gap. This study therefore seeks to bridge this inconclusive gap and the methodological gap of generalization by establishing the determinants of financial performance of commercial banks in Kenya.

2.6 Conceptual Framework

The conceptual framework is a written or visual representation of an expected relationship between variables.

The conceptual framework below shows the linkage between independent variables and dependent variable.

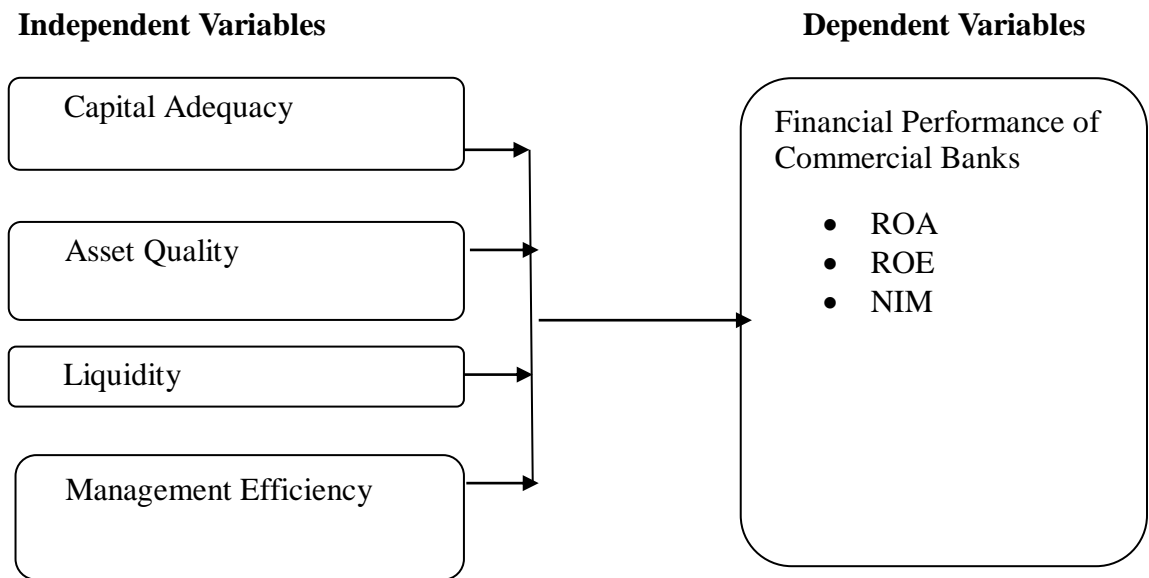


Figure 2.1: Conceptual Framework

Source: Author (2021)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Overview

This chapter presents the area of study, research design that was adopted for this study, target population, source of data, data collection technique, model specification, diagnostic tests, data analysis, measurement of variables, estimation of parameters and ethical consideration.

3.2 Area of Study

The area of research is in Kenya; a Sub-Saharan Africa (SSA) country in East Africa (EA) with a vibrant banking sector that is home to 43 commercial banks as at 31st December 2018. Those banks that started operation and discontinued in the middle of the period under review were excluded. Charterhouse Bank ltd, Imperial Bank ltd and Chase Bank (K) ltd were under statutory management.

3.3 Research Design

Explanatory research design was used in this study. According Ranjit (2005), explanatory research attempts to clarify why and how there is a relationship between two or more aspects of a situation or phenomenon. This type of research design attempts to go above and beyond exploratory and descriptive research to identify the actual reasons a phenomenon occurs (Kumar, 2005). Hence explanatory research design was utilized employing panel data approach

3.4 Target Population

A population refers to an entire group of individuals, events or objects having a common observable characteristic (Kothari, 2005). The target population of this study was all the 43 commercial banks operating in Kenya as at December 2018, Consistent with (Sufian and Chong 2008, Ayanda et al. 2013, Ongore and Kusa 2013). The Kenya banking sector comprises of; The Central Bank of Kenya (CBK), as the regulatory authority and 43 banking institutions (CBK, 2018). Charterhouse Bank ltd, Imperial Bank ltd and Chase Bank (K) ltd were under statutory management.

3.5 Source of Data

The data set for this study was extracted from the Central Bank, IMF and World Bank website covering years from 2009 to 2018

3.6 Data Collection Procedure and Instruments of Data Collection

Creswell (2002) defines data collection as means by which information is obtained from the selected subjects of an investigation. The researcher extracted data from the central bank website, IMF and World Bank, study period; 2009 up to 2018. From each report data for every variable of interest was extracted.

An excel form was used to record the data values of each variable for each year thus generating a time series data that aided the study to investigate the behavior of each variable over time (Baltagi, 2005; Gujarati, 200). The time series data further was critical in

carrying an investigation of long run co-integration behaviour between the time series datasets.

3.7 Model Specification and Analysis procedure

The theoretical model of this study is a four factor model which hypothesize that Financial Performance (FP), is a function of internal bank specific factors; Asset Quality (AQ), Capital Adequacy (CA), Bank Liquidity (BL) and Managerial Efficiency (ME).

$$FP_t = F(AQ_t, CA_t, BL_t, ME_t)$$

(1)

Where FP_t is financial performance of commercial banks in Kenya at time t . The model coefficients are estimated using the vector auto regressive model which captures the long run relation between the variables. In the VAR model, all the model variables are treated as endogenous, that is, their value is determined by the model (Wilkie&Şahin 2019). The data for all the variables is time series data obtained from the central bank website for observations covering the years 2009 to 2018. Usually time series data has trend (changing mean) and volatility changing variance. Hence, in time series frame work, it is referred to as non-stationary and modelling such a series as simple OLS relation results to spurious regression (Polbin, 2017). To build a non-spurious model, time series modelling procedures were developed and employed in this study. It includes test of the measurement.

3.7.1 Unit Root Test:

This procedure tests if the series is stationary (no unit root) or not. A time series is stationary if it has no trend and has constant variance. One outstanding tests of the stationarity assumption is the Augmented Dickey-Fuller test (ADF). It tests the null hypothesis that the series is not stationary (series has unit root).

It consists of running regression of the first difference of the series against the series lagged once, lagged difference terms and optionally, a constant and a time trend (This can be expressed as in equation 2

$$\Delta Y_t = \beta_0 + \beta_1 t + \beta_2 Y_{t-1} + \sum_{j=1}^p \beta_j \Delta Y_{t-j} + \varepsilon_t \dots$$

(2)

The additional lagged terms are included to ensure that the errors are uncorrelated (Allison, et al., 2017). If the coefficient β is significantly different from zero, then the hypothesis that Y_{t-1} contains a unit root is rejected.

$$H_0 : \beta_2 = 0$$

$$H_1 : \beta_2 \neq 0$$

Regressing a non-stationary data results in spurious regression (Jin, Zhang, & Zhang, (2017). To avoid falling into the trap of getting spurious results, the ADF tests is run on all the dataset variables at level and at first difference.

3.7.2 Test for Co-integration

Once the unit roots are confirmed for data series (stationarity), the next step is to examine whether there exists a long-run equilibrium relationship among the variables. This calls for testing for evidence of co-integration between the series so as to avoid the risk of spurious regression. In this, study, the Johansen's two step Co-integration test is used to identify co-integrating relationship among the variables. Johansen framework, the first step is the estimation of an unrestricted, closed p^{th} order VAR in k variables. The VAR model as considered in this study is:

$$Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \dots + A_p Y_{t-p} + B X_t + \varepsilon_t \quad (3)$$

Where Y_t is a $k \times 1$ vector of non-stationary I (1) endogenous variables, X_t is a vector of exogenous deterministic variables, A_1, A_2, \dots, A_p and B are matrices of coefficients to be estimated, and ε_t is a vector of innovations that may be contemporaneously correlated but are uncorrelated with their own lagged values (no serial correlation). The time series models are lag-sensitive to ensure model parsimony. The lag selection is identified by both the Aikeike Information Criterion, AIC and the Schwarz Information Criterion, SIC. An appropriate lag was first identified and then used it to tests the cointegration hypothesis

H_0 : No cointegration, $r = 0$ against

H_A : There is at least one cointegration, $r > 0$

If null is rejected, it means a there is at least one co-integration relation exist, and therefore there is a long run equilibrium relation between the series tested. In time series frame

work, there may be deviations from this equilibrium, and it is required to verify whether such disequilibrium converges to equilibrium on the long-run or not. Thus, Vector Error Correction Model is used to generate such short-run dynamics.

3.7.3 VECM Model:

Once co-integration between series is identified, then a long run equilibrium relation exists between them. Error correction mechanism provides a means whereby a proportion of the disequilibrium is corrected in the next period; e.g. quarterly or annually, The error correction mechanism is a means to reconcile the short-run and long-run behaviour. The post hoc tests of the time series models were also investigated to gain further understanding of the relationships identified in the model. They include the granger-causality test, and impulse response.

3.7.4 Granger-Causality

The term “Granger-causes” means that knowing the value of time series x at a certain lag is useful for predicting the value of time series y at a later time period. In a bivariate cointegrated relation between two series, the general form is

$$\Delta Y_t = \beta_0 + \beta_1 Y_{t-1} + \dots + \beta_i Y_{t-i} + \phi_1 X_{t-1} + \dots + \phi_i X_{t-i} + \varepsilon \dots \dots \dots (5)$$

$$\Delta X_t = \beta_0 + \beta_1 X_{t-1} + \dots + \beta_i X_{t-i} + \phi_1 Y_{t-1} + \dots + \phi_i Y_{t-i} + \varepsilon \dots \dots \dots (6)$$

Where β_0 is the constant growth rate for Y in equation 5 and X in equation 6, while the trend component in these variables is the general movements of cointegration between X

and Y that follows the unit root process. Two tests are undertaken to actualize the causality test: the first examines the null hypothesis that the X does not Granger-cause Y and the second test examines the null hypothesis that the Y does not Granger-cause X. If we fail to reject the former null hypothesis and reject the latter, then we conclude that X changes are Granger-caused by a change in Y (Maziarz, M. (2015).). Unidirectional causality will occur between two variables if either null hypothesis of equation (5) or (6) is rejected. Bidirectional causality exists if both null hypotheses are rejected and no causality exists if neither null hypothesis of equation (5) nor (6) is rejected, Maziarz (2015).

3.8 Diagnostic Tests

Diagnostic tests play crucial role in finding and validating a good predictive relationship among the dependent variables and determining whether the model is stable. Having built a model, the next procedure is testing its adequacy (Shrestha and Bhatta, 2018) In time series models, the built model is subjected to test of normality, heteroscedasticity and serial correlation (Ghysels & Marcellino, 2018).

3.8.1 Normality Test:

The assumption is that the residuals are normally distributed around the mean. The assumption is checked by both visual inspection of histogram and the Jarque Bera test statistics. In the JB test, the null hypothesis is that the model residuals are normally distributed (Gel & Gastwirth, 2008). This study employed both tests to check for the

normality of residuals from the built model. non-significant p values in the JB test indicate the assumption is not violated.

3.8.2 Serial correlation Test

Autocorrelation occurs when the residuals are not independent from each other. The assumption is tested using the Durbin Watson statistics for serial correlation and also a plot of Autocorrelation Function, ACF. Under the DW test, the hypotheses are; H₀ (null hypothesis): There is no correlation among the residuals. H_A (alternative hypothesis): The residuals are auto correlated. A non-significant p value indicated that the model did not suffer from serial correlation and therefore all the information in the time series data is extracted (Shrestha & Bhatta, 2018)

3.8.3 Multicollinearity Test

Multi-Collinearity refers to the presence of high correlations between independent variables (Williams *et al.*, 2013). In this study, multi-collinearity was assessed by means of tolerance and Variance Inflation Factor (VIF) values. A tolerance value of below 0.10 or a VIF value greater than 1.0 reveals serious multi-collinearity problem (Hair *et al.*, 2007; Leech *et al.*, 2011).

According to O'brien (2007), the Variance Inflation Factor (VIF) and tolerance are both widely used measures of the degree of multi-collinearity of the i^{th} independent variable with the other independent variables in a regression model. The VIF can be expressed as follows:

$$VIF = \frac{1}{(1 - R_i^2)} \dots \dots \dots (7)$$

Where R_i^2 is the squared multiple correlation of the i^{th} independent variable regressed on the other independent variables in the analysis.

3.9 Data Analysis

Data is analysed using the R version statistical package. Descriptive statistics provided a comprehensive explanation of the study results. The mean, and standard deviation were computed. Vector Error Correction Model (VECM) was used instead of the ordinary least squares; OLS, estimation of regression coefficient. This is important so as to avoid building a spurious model.

In the VECM framework, the important information is the coefficient of the Error Correction Term, labelled ECT₋₁. The coefficient of error correction term, (ε_{t-1}) which has a maximum value of 1 in absolute terms, measures the rate of correction of the short run deviations from equilibrium in the next period. Theoretically, it is negative. The significance of the coefficient of the error term indicates significant long run equilibrium relation. The other component of VECM output results is the coefficients of the lagged terms of endogenous variables. If significant, it is an indication of short run equilibrium relation.

The above procedures were followed to build a time series model to determine the short run and long run relations. The causality and the impulse response of the model variables was investigated post hoc.

3.10 Measurement of Variables

This section presents the measurements that were used to operationalize the study variables.

Variable	Measurement
ROA	Total income to its total asset
ROE	Net Income after Taxes divided by Total Equity Capital
NIM	A percentage of earns on loans in a time period and other assets minus the interest paid on borrowed funds divided by the average amount earning assets
Capital Adequacy	Total Capital to Total Asset
Asset Quality	Non-performing loans to total loans
Management efficiency	Total Operating Revenue to Total Profit
Liquidity	Total Loans to Total Customer Deposit

Table. 3.1 Measurements of Study Variables

3.11 Estimation of Parameters

The vector error correction model regression coefficients are estimated using the Maximum Likelihood Estimation (MLE) technique (Zhao, & Palomar, 2017). This is a method of estimating the parameters of a probability distribution by maximizing a likelihood function, so that under the assumed statistical model the observed data is most probable (Myung, 2003). Therefore, the estimates of the regression model in this study are all MLE estimates.

3.12 Validity and Reliability of Research Instruments

Validity is a measure of the extent the instrument captures the intended concept. In this study, secondary data was utilized to investigate the relation between bank specific actors and financial performance. The data was obtained from the CBK website which is a reliable source and each ratio is well defined how it is calculated. Thus the figures used in this study to measure the intended concept.

Reliability relates to a data collection instrument being able to deliver consistent results time and again. According to Kothari, 2014 validity relates to various dimensions; a key dimension being the content capability of the data collection instrument to adequately capture the data being collected.

3.13 Ethical Considerations

In carrying out this study, formal approval was carried out for mutual interest between the researcher and the participants. Consequently, the following approvals were obtained prior to commencement of the study:

- a) Obtained a written permission from Moi University, School of Business and Economics through Economic Department.
- b) Acquired research permit from National Council for Science and Technology-Kenya (NACOSTI)

CHAPTER FOUR: FINDINGS AND DISCUSSION

4.1 Overview

This chapter presents the findings of the study. It is organized in sections, in line with the study objectives. The first section presents the descriptive results that involved data visualization over time and computation of the selected descriptive statistics. Results of these sections are presented in figures and tables. However, the tables are used to present the measures of central tendency and dispersion. The second section is dedicated to inferential statistics; the core of hypothesis testing. In this section, modelling of the variables and test results of the hypothesis are presented.

4.2 Descriptive Results of Study Variables

4.2.1 Descriptive results of Performance Ratios; ROE,ROA,NIM

This section presents the descriptive results of the performance indicators and the hypothesized predictors of performance. Trend analysis is important visualization of the data over time. Financial performance was assessed using three ratios in the 2009 to 2018 period; ROE, ROA and NIM.

Figure 4.1 shows the trend of the three performance indicators in the period 2009-2018. For ROE, the results show that the ratio fluctuated between 20 and 30 percent with no major spikes in the period. Since a ROE of 15-20% is traditionally considered good for the financial sector (Heikal, Khaddafi and Ummah, A. (2014), the Commercial banks in Kenya

perform well because the results shows the ROE has consistently stayed generally around this recommended range. This implies the banks utilized the shareholder equity efficiently to generate profit. ROA, which measures the efficiency of banks in utilizing resources to generate profit, consistently remained lowest, below 5 percent, throughout the 2009 to 2018 period. Comparatively, banks consistently recorded higher ROE than ROA, an indication that the banks in Kenya could be over relying on financial leverage which has it's to raise equity (De Wet, & Du Toit, 2007).). The NIM Ratio, a measure amount of money that a bank earning interest on loans compared to amount it is paying in interest in deposits, stayed around 8 percent throughout the study period. At around the same period, American banks NIM was 3.35 percent () and it had been on a long-term downward trend since 1996 (4.3%). For the year 2017, the mean NIM in 47 countries is 6.58 percent with highest in Sierra Leone (21.43%) and lowest in Libya (0.335%).

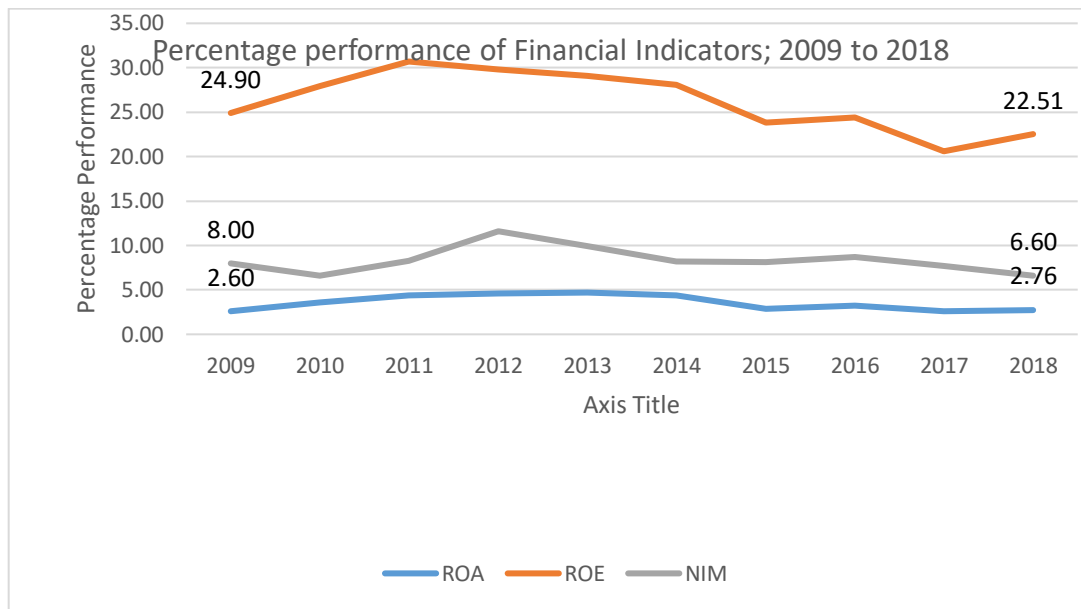


Figure 4. 1: Trend of Financial Performance Ratio's using annually aggregated data; 2009-2018

4.2.2 Descriptive results of Quality, Capital adequacy, Liquidity, and Management

Efficiency Ratios

The figure 4.2 shows the trend of the four selected bank specific ratios using the annually aggregated data of 2009 to 2018. The Liquidity Ratio oscillated in the neighbourhood of 40% with steady increase to 49% in 2018. The increase in the LQR from 2016 to 2018 is mainly attributed to a higher growth in total liquid assets compared to the growth in total short term liabilities. Total liquid assets grew by 24.1% while total short term liabilities grew by 11.5%, the banking sector average liquidity for the period 2009-2018 was above the statutory minimum requirement of 20%. The mean for SSA is 18 percent. Developed countries have liquidity ratios of 13percent however, countries in SSA averages 17 percent. Kenya commercial banks are therefore among the most liquid banks in the region.

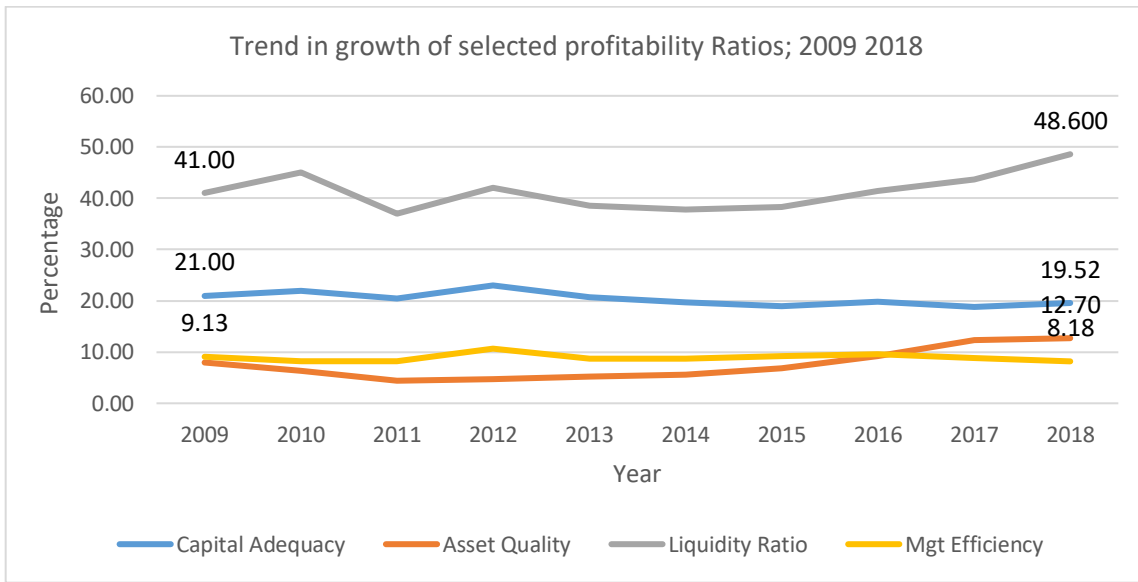


Figure 4. 2: Trend of selected Ratios in Commercial banks in Kenya using annually aggregated data; 2009-2018

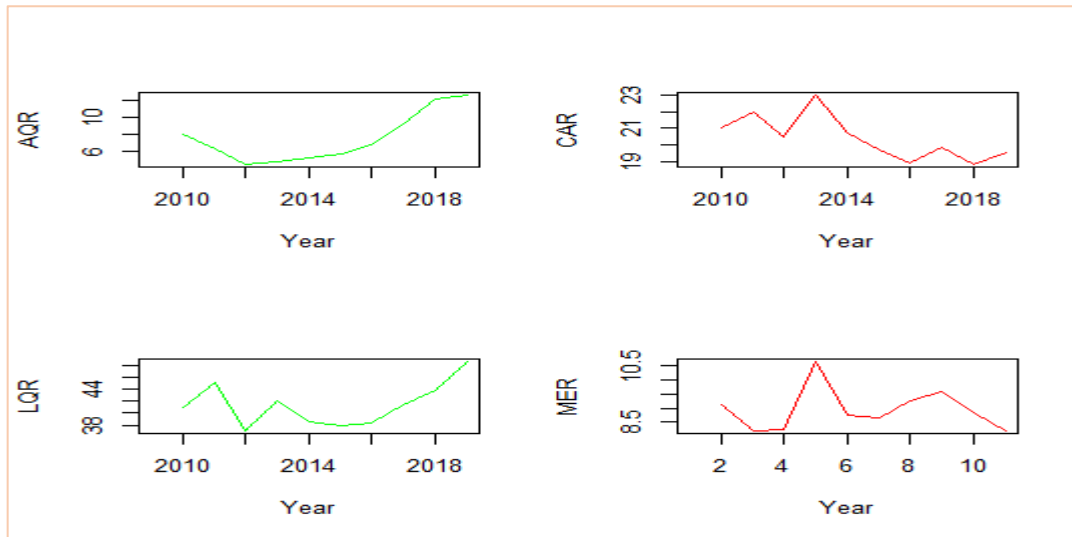


Figure 4. 3 Plots showing trend AQR and LQR increasing while MER and CAR decreased in the 2009 to 2018

The further scrutiny of the plots indicate that the Bank Liquidity and Asset quality recorded increased growth up to the end of the study period, 2018. However, Capital Adequacy Ratio and Management Efficiency Ratio recorded a downward trend over the 2014/2018 period.

Table 4. 1 Descriptive results of the variables

	CAR	AQR	LQR	MER	ROA	ROE	NIM
Mean	20.392	7.52	41.34	8.946	3.576	26.181	8.37
Standard Error	0.424444	0.95158	1.156354	0.24247	0.275678	1.073843	0.469527
Median	20.15	6.55	41.2	8.78	3.4	26.4	8.15
Standard Deviation	1.34221	3.00917	3.656714	0.766757	0.87177	3.39579	1.484775
Sample Variance	1.801529	9.05511	13.37156	0.587916	0.759982	11.53139	2.204556
Kurtosis	0.058956	-0.47146	0.10682	1.825978	-2.03246	-1.25334	1.687031
Skewness	0.780804	0.90988	0.767798	1.252863	0.177749	-0.24067	1.096804
Jarque-Bera (p value)	0.832(.660)	1.256(.534)	0.7967(.6714)	1.959(.3754)	.8025(.6703)	1.266(.534)	1.859(.3854)
Range	4.2	8.3	11.6	2.48	2.1	10.1	5
Minimum	18.8	4.4	37	8.18	2.6	20.6	6.6
Maximum	23	12.7	48.6	10.66	4.7	30.7	11.6

Source: Research data (2021)

The 2009 to 2018 period, the mean of CAR and AQR is 20.392 (SD=1.34221 and 7.52(3.009171) respectively. in the same period, mean of LQR and MER is mean of 41.34 (3.656714) and 8.946 (0.766757) respectively. The standard deviations show the volatility in the data in the study period.

4.3 The correlation results of the study variables

The Pearson's correlation coefficient is calculated in order to have an overview of the association between the study variables, the results are given in Table 4.2

Table 4. 2 Correlation results

	CAR	AQR	LQR	MER	ROA	ROE	NIM
CAR	1						
AQR	-0.57205	1					
LQR	0.066765	0.720789	1				
MER	0.373478	-0.20535	-0.1491	1			
ROA	0.520116	-0.81251	-0.51141	0.134949	1		
ROE	0.686864	-0.9182	-0.5188	0.083279	0.912245	1	
NIM	0.487937	-0.54099	-0.43176	0.796866	0.627052	0.512063	1

Source: Research data (2021)

Examining the financial performance indicators, it is observed that Capital Adequacy Ratio, CAR, is positively related with all the profitability indicators; ROA (.52011), ROE,.6868) and also NIM (.4879) an indication that commercial banks have high CAR are more likely

to record high financial performance than banks with low CAR. Similarly, MER, is positively associated with the profitability ratios; ROA (0.134), ROE (.083) and NIM (0.7968). The findings are in agreement with findings by Mathuva, (2009).

Among the profitability ratios, ROA has strong association with ROE (0.9122) which means that the two series carry same information in explaining financial performance. Such that one ratio is a proxy for the other in the analysis of relation between financial performance and bank specific ratios. ROA and NIM (0.6271), the correlation is moderate. However, NIM and ROE are moderately correlated (0.5120), However, Asset Quality Ratio negative association with all the profitability ratios in the study period.

Similarly, the Liquidity Ratio (LQR) showed negative moderate association with all profitability indicators during the same period. Banks with too high liquidity ratios leave workable assets on the side-line that could be employed to expand operations.

Correlation, however, does not say anything about long-run relationship, and thus, leaves unsettled the debate concerning the long-run relationship between the independent variables (AQR, CAR, LQR and MER) and performance of commercial banks measured by ROE, ROA and NIM. Thus regressing the variables gives spurious results. This is where the VECM regression is handy. The advantage of the VECM regression is that it captures both the causal-effect relationship; the short run and the long run equilibrium relationship.

Asset quality which is expressed as non-performing loans to total loans is negatively related to all the three bank performance indicators. This indicates that poor asset quality or high

non-performing loans to total asset related to poor bank performance. The negative correlation coefficient between poor asset quality and return on equity (ROE) is very strong. This is because loans constitute the largest share of assets that generate income for the investment (equity). The other explanatory variable, management efficiency is positively related to all the three performance ratios and more strongly related to ROE. Liquidity management is also positively related to ROA, ROE and NIM but the correlation is very weak. This may be due to the fact that liquidity management is more related with fulfilling depositors' obligation (safeguarding depositors) than investment.

4.4 Time series Regression analysis results

The estimation methodology employed in this study is the co-integration and error correction modelling technique. The entire estimation procedure consists of three steps: first, unit root test; second, co-integration test; third, the error correction model estimation and are they are tested.

4.4.1 The Unit Root Test

The ADF test of unit root showed that the all the series are non-stationary at level,

Series	ADF VALUE	P	CONCLUSION	Test at first difference
NIM	-6.180	<.001	Stationary	-
ROE	1.7181	0.6798	Not Stationary	Stationary
ROA	1.7181	0.6798	Not stationary	Stationary
CAR	-2.765	0.14168	Non-stationary	Stationary
AQR	-1.272	0.8497	Not stationary	Stationary
LQR	0.95322	0.99	Non-Stationary	Stationary
MER	-3.6683	0.452	Not stationary	Stationary

except Table 4. 3 Unit Root Test

Source: Author (2021)

NIM series (Table 4.3). a series is stationary at level when it is has trend or non-constant variance before differencing,The implication of this ADF test is twofold; lagged values of NIM have no influence on its future values and the non-stationary variables should potentially have long run equilibrium).

The non-stationary series at level were differenced and the resultant differenced series tested for stationarity using the ADF. The first difference series were stationary at 0.05 significant level. This implied that the original non stationary series is order one, that is I

(1). This satisfied one of the conditions of VECM because in the VECM framework, the vector of variables that are potentially co-integrated, should be of the same order at level and should be stationary at the at the same number of differencing (Campos, et al, 1996).

4.4.2 Co-integration Test

The empirical test result of co-integration in table 4.4 indicates the test statistics and the calculated values at 10, 5 and 1 percent significant level. The null hypothesis that number of co-integration is zero is rejected in favour of the alternative that the number of integration is one. The test statistic (207.46) is greater than the critical statistic at 10,5 and 1 percent level of significant.

Table 4. 4 Results of Johansen’s Co-integration Test

	Test	10Pct	5Pct	1Pct
$r \leq 4$	2.63	6.50	8.18	11.65
$r \leq 3$	39.55	15.66	17.95	23.52
$r \leq 2$	88.45	28.71	31.52	37.22
$r \leq 1$	144.36	45.23	48.28	55.43
$r = 0$	207.46	66.49	70.60	78.87

Source: Author (2021)

The test statistic (2.63) is less than the critical values at 1%,5% and even 10% significant level. Therefore, there is a long-run equilibrium relationship between variables. The long run cointegrating equation obtained is a series of the form;

$$FP = 0.3185CAR + 0.2455AQR - 0.2794LQR + 0.1868MER + \varepsilon_t \quad (8)$$

Such that the ε_t is white noise and stationary. The plot of the series, ε_t is in figure 4.3 and it appears as a white noise with mean zero and constant variance. The ADF test statistics confirms that the series is indeed stationary with mean zero and constant variance, $\varepsilon_t \sim N(0, \sigma^2)$.

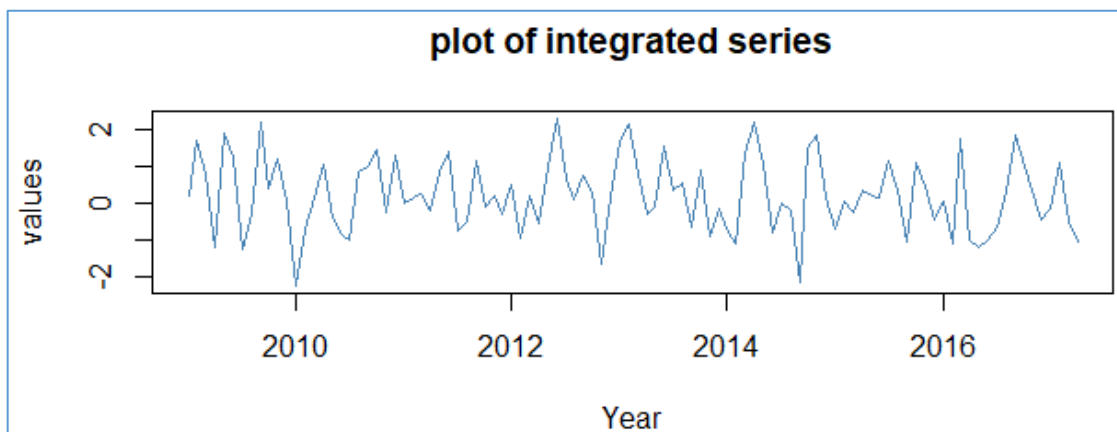


Figure 4. 4 A plot of the integrated series ε_t 2009 to 2018

4.4.3 Vector Error Correction Model, VECM

The presence of co-integration between variables suggests a long-term relationship among the variables under consideration. Then, the VEC model is therefore applied.

	ECT1	ECT2	INT	FP-1	CAR-1	AQR-1	LQR-1	MER-1
FP	- 1.350(.1580) ***	.202(0.0939) *)	.6385(.1285) ***	.241(.1150) *)	.164(.0686) **	.0883(.0917)	.374(.0994) ***	.2359(.0840) **
T p	8.544, [.000]	2.151 .0377	4.989 [.000]	2.096 [.0426]	2.391 [.0217]	0.963 [.3415]	3.763 .001	2.808 .008
CAR	- .506(.1846) **	- .265(.1097) *)	- .430(.1501) **	.1317(.1343)	.357(.1035) ***	.155(.1072) *)	.525(.1162) ***	305(.0982) *)
T p	2.75 .009	2.431 .0198	2.867 .007	0.975 .336	3.449 .001	2.153 .0376	4.500 .001	3.106 .004
AQR	.085(.1524)	.576(.0905) ***	.191(.1239)	.0978(.1109)	.335(.0855) ***	.197(.0885) *)	.328(.0959) ***	.107(.0811)
T p	.558 .5800	6.365 .000	1.542 .131	.882 .383	3.918 .000	2.262 .029	3.42 .002	1.319 .195
LQR	- .688(.1767) ***	- .177(.0991).	- .301(.1437) *)	.2745(.1286) *)	.177(.0991).	.287(.1026) **	.351(.1112) **	.030(.0940)
T p	3.894 .000	1.786 .082	2.095 .0427	2.135 .0391	1.786 .0819	2.797 .008	3.156 .003	.319 .751
MER	.095(.1952)	.160(.1160)	.039(.1588)	.0366(.1421)	.1329(.1095)	.139(.1133)	.0230(.1229)	.318(.1039) **
t p	.487 .629	1.379 .921	.246 .807	.258 .799	1.255 .217	1.227 .227	0.181 .857	3.061 .004
	<p>NOTE Significant level '***' 0.001, '**' 0.01 and '*' 0.05 Standard errors (se) are in brackets () t=coefficient/se, P values are enclosed in []</p>							

Table 4. 5 VECM model

Source: Research Data (2021)

The size and sign of the coefficient of the error terms in the VECM framework provide long run information (De Mello & Pisu, 2010). The estimated coefficient of error-

correction term (EC_{t-1}^1) in the FP model is statistically significant and has a negative sign (-0.1304), as theoretically expected. The negative coefficient confirms that variables share a common stochastic trend in the long run. The magnitude of the coefficient (-0.1304) shows that about 13.04 per cent of the disequilibrium in Financial Performance of commercial banks in Kenya, is corrected each subsequent year.

In the CAR model, the coefficient of the error term (term (EC_{t-1}^2)) is also negative and significant indicating a long run equilibrium relationship between the CAR and the model variables. The coefficient is -.02654 suggesting that the rate of convergence to equilibrium is weak. That is only 2.654 percent of Capital Adequacy disequilibrium in commercial banks in Kenya, is corrected towards equilibrium in the next period. Considering that the two coefficients are negative, it means that the causal relation between CAR and FP are bidirectional. This bidirectional relation means that CAR has a long run influence on FP but at the same time, FP has long run influence on capital Adequacy as measured by CAR

Now turning to the short-term part of the model, it is observed that the previous year's change in Financial Performance, (ΔFP_{t-1}) has a positive and significant influence on the following year's performance (ΔFP_t). The coefficient is 0.241 ($t=2.096$, $p=0.0426$), indication that if the commercial banks record an increase in FP in current year, the following year, the FP increase as well, *Ceteris Paribus*.

The short term relation between the independent and dependent variable, Managerial Efficiency, MER has short run positive and significance influence on the commercial

bank's performance (0.2359, $t=2.868$, $p = 0.008$). The short run coefficient result suggest that an increase in ME by 100 %, the FP increase by a significant proportion of 23.59%. Therefore, it is concluded that ME is one of the bank-specific factor that determine the performance of commercial banks in Kenya. The null hypothesis of no significant effect is therefore rejected at 5 % significant level. Similarly, liquidity of commercial banks influence their Financial Performance($\beta=0.374$, $t=3.763$, $p=.001$) such that an increase in liquidity ratio by 100%, the performance increase by 37.4%. the hypothesis that Liquidity has no significant influence of FP is rejected. Similarly, Capital Adequacy ($\beta=0.164$, $t=2.391$, $p=0.0217$) influence Financial Performance of commercial banks. The influence is significant such that an increase in CA by 100%, performance increase by 16.4 Percent. , and the Management Efficiency ($\beta=0.2359$, $t= 2.808$, $p=0.008$) and financial performance of commercial banks. However, the study never found evidence of Asset Quality ($\beta=0.0883$, $t= 0.963$, $p=0.342$) influencing financial performance at 5 % level of significant, it is evident from the 2009-2018 data that bank specific factors play a critical influence on the short run and long run financial performance of Commercial banks. This is evident from the error component of the model and the lag component of the model. The coefficient of the first difference in this model are significant at lag one indicating a short run equilibrium relationship between financial performance and bank-specific factors; AQR, CAR and MER.

4.4.4 Granger-Causality Test

The existence of Co-integration implies the existence of Granger causality at least in one direction (Granger, 1988). We tested the hypothesis; Null Hypothesis (H_0): Capital Adequacy does not Granger-cause financial performance, Hypothesis (H_A): Capital Adequacy Granger-causes Financial Performance. The test results obtained using the Granger-test function in R programme showed F value 7.95, with p 0.005. This is evidence to reject the null hypothesis and conclude that that CAR granger-cause Financial performance. Capital adequacy is a significant predictor of financial performance.

Reverse causality hypothesis tested is that; Null Hypothesis (H_0): Financial performance does not Granger-cause Capital Adequacy, Alternative Hypothesis (H_A): Financial Performance Granger-causes Capital Adequacy. The test statistics, F is significant (74.409, $P < .001$) and indication that Capital adequacy granger-cause FP. of reverse causality.

Table 4. 5Granger causality test:

Hypothesis	F	P	Decision
CA does not Granger-Cause FP	74.409	<.001	Reject null
FP does not Granger-Cause CA	8.907	<.001	Reject null

Source: Research data (2021)

It is evident from the 2009 to 2018 data that the bidirectional relation exists between FP and Capital Adequacy. Capital Adequacy drives financial performance such that shock in

Capital adequacy sets a response in financial status of the commercial banks. The reverse causality results indicate a reciprocate effect from financial performance.

4.4.5 Impulse Response Function

Variables in a VAR model depend on each other; therefore, individual coefficient estimates only provide limited information on the reaction of the system to a shock. In order to get a better picture of the model's dynamic behaviour, impulse responses (IR) are used (Lütkepohl, 2013). The shock of capital adequacy on FP and the vice versa is investigated then the results plotted for some periods ahead.

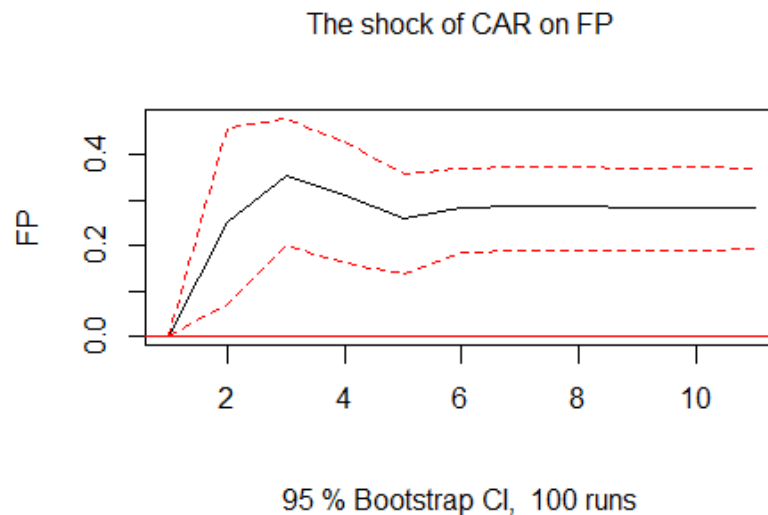


Figure 4. 5: Plot showing the shock of Capital Adequacy on Financial Performance

The result shows that, capital adequacy responds in the first two years and eventually the shock dissipates in the fifth period. This implies that capital adequacy has a positive

cascading influence on FP and therefore sustained capital adequacy is essential in achieving financial growth of commercial banks.

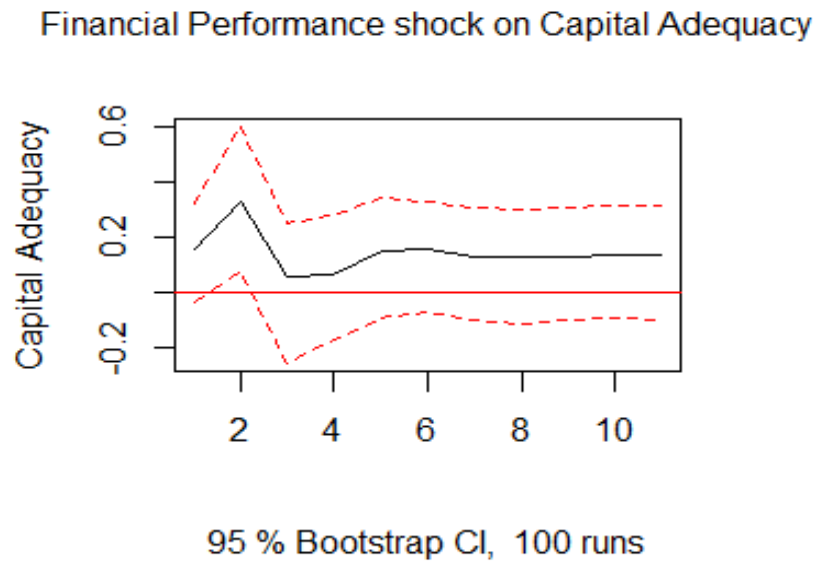


Figure 4. 6 Shock of Financial Performance of Capital Adequacy

The financial performance initially triggers a positive change in Capital adequacy in the first season that deepens in the second season then rises before stabilizing at about 0.2 units. In overall, the results indicate that the short run equilibrium process is quite fast.

4.5 Diagnostics

4.5.1 Normality Test:

The normality assumption was investigated using plotting of the histogram of residuals.

The histogram shown in figure confirms that the residuals are normally distributed. The JB

statistics confirmed that the assumption is satisfied, (Chi-squared = 5.3715, p-value = 0.865).

4.5.2 Heteroscedastic Test:

The heteroscedastic assumption in the frame work of time series measures the Autoregressive Conditional Heteroscedastic (ARCH) effect. The test result show that the model does not suffer from the ARCH effect has indicated by a non-significant p value. The p value is non-**significant** (Chi-squared = 1081.2, df = 1125, p-value = 0.8217) supported the no ARCH effect.

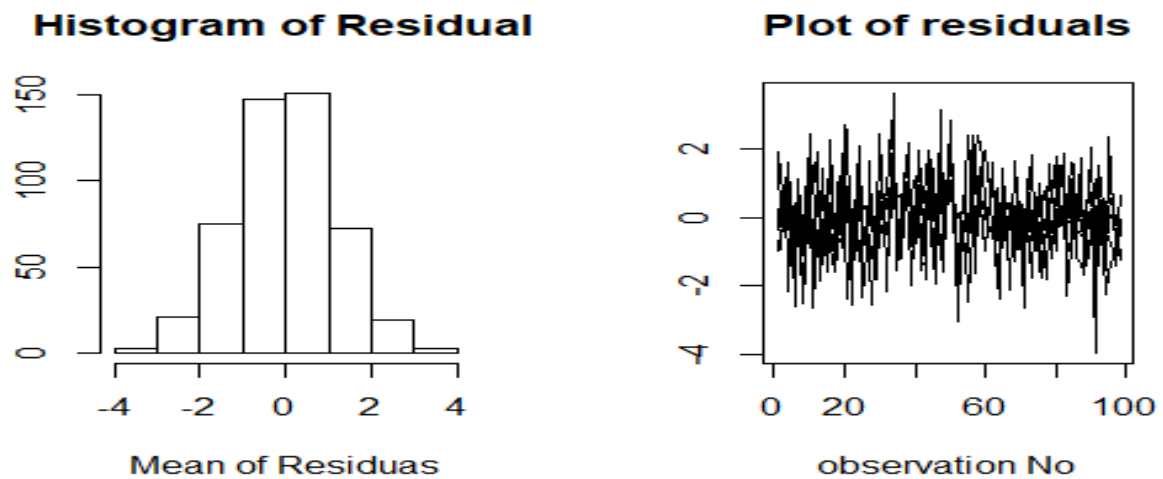


Figure 4. 7Histogram for test of normality, residuals for test of heteroscedasticity

4.5.3 Serial correlation

The model is tested using the Durbin Watson statistics for serial correlation, H_0 (null hypothesis): There is no correlation among the residuals against H_A (alternative hypothesis): The residuals are auto correlated. The non-significant p value indicated that the model did not suffer from serial correlation and therefore all the information in the time series data is extracted (Shrestha & Bhatta, 2018).

Other tests of the time series-led models is model stability and test for structural breaks. The results in figure shows that the points are all within the 95% confidence interval, indicating no structural breaks. Considering the results of the tests, it is concluded that the model is adequate to explain the relation between bank specific factors on performance of commercial banks in Kenya.

4.6 Summary

In this chapter, the trend analysis of the study variables was investigated at initial stage with results indicating a gradual decrease of all the three profitability ratios especially from year 2012 to 2018. The trend further indicates that ROE stayed above ROA and NIM throughout the study year period. The descriptive results showed normal distribution with slight negative skew (ROE) and positive skew for NIM and ROA. The correlation results showed significant association between the bank indicator ratios and financial performance ratios. The data properties were investigated using the ADF unit root test that showed that all the variables are of order I (1), except for NIM and CAR. The normal OLS regression is therefore spurious thus necessitated the VECM. The Johansen test results for co-integration

involved the five I (1) variables. The result showed that the series are co-integrated and therefore there exists a long run equilibrium relation between them, although there could be short run disequilibrium. The VECM model showed two co-integrations with ROA and ROE as endogenous variables. The error correction coefficients in both equations are significant indicating a bidirectional causality. The error correction term in the ROE model indicated a significant long run equilibrium relation with model variables. In particular, the ROE and MER have both long run equilibrium relation as well as the short run equilibrium (0.2359(0.0840) **).

The causal effect is to investigate using the sign and magnitude of the error terms with results suggesting a bidirectional relation such that financial performance influence Capital Adequacy but at the same time, Capital Adequacy also influences financial performance. The impulse response results show that Capital adequacy cause a positive shock response on Financial Performance in the first three years before the shock dissipates. However, the shock of financial performance on capital adequacy present.

Table 4.6: Summary Results of the long run and short run equilibrium

	Long run(ECT)	Short run	Findings	Conclusion
AQ Sig.	0.0847(0.1524) 0.582	0.0883(.0917) 0.3415	Ns	AQ has no significant influence on FP
CA Sig.	0.5061(.1846)**	0.164(.0686)* 0.0217	Sign Long & Short	CA has significant influence on FP
LQ Sig.	0.68883(0.1767)*** 0.000	.374(.0994) *** 0.001	Sig. Long \$ Run	LQ has significant influence on FP
ME Sig.	0.0945(0.1952)	0.2359(0.0840)** 0.008	Sig Short Run	ME has significant influence on FP
NOTE: Significant level ‘****’ 0.001, ‘***’ 0.01 and ‘**’ 0.05				

Source: Author (2021)

Conclusion: Economic factors have long run and short run equilibrium with financial performance of commercial banks in Kenya

Summary of Hypothesis Testing

	Hypothesis	Coefficient	P-value	Decision
Ho1	Asset quality has no significant influence on financial performance of commercial banks in Kenya	0.883	0.3415	Accept
Ho2	Capital Adequacy has no significant influence on financial performance of commercial banks in Kenya	0.164	0.0217	Reject
Ho3	Liquidity has no significant influence on financial performance of commercial banks in Kenya	0.374	0.001	Reject
Ho4	Management Efficiency has no significant influence on financial performance of commercial banks in Kenya	0.2359	0.008	Reject

CHAPTER FIVE : SUMMARY , CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the overall study and the summary of the critical findings of the four study objectives. Then based on the findings, the study conclusions are presented in section two. The third section presents the study recommendations.

5.2 Summary

Financial performance is one of the critical components of the firms' continuity plan and this study aimed at finding out economic factors determining the financial performance of selected commercial banks in Kenya. The specific objectives aimed at finding the effect of various economic factors on financial performance of selected commercial banks in Kenya. The consolidated yearly data set of the variables from 2009 to 2018 were used to seek answers to the research questions. The co-integration approach employed was core statistical analysis to investigate the long run equilibrium and short run equilibrium relation between independent and dependent variable. The findings were as follows:

5.2.1 Effects of Asset Quality on Financial Performance of Commercial Banks in Kenya

Trend analysis showed a steady increase of the Asset quality ratio throughout the study period, however, on average, the ratio stood at mean of 7.52(3.009) percent in the 2009 to 2018 period. No evidence was found of significant co-integration relation between Financial Performance and Asset Quality of commercial banks in Kenya. The VECM

results indicated that Asset quality and financial performance does not have a long run equilibrium during the study period. Therefore, there is no evidence to reject the null hypothesis of no significant influence of Asset Quality on Financial performance; H_{01} . These findings contrast with Abata, (2014) findings who established significant positive influence of Asset quality on FP. However, Kadioglu, Telceken and Ocal, (2017), found a negative relation.

5.2.2 Effects of Capital Adequacy on Financial Performance of Commercial Banks in Kenya

The capital adequacy ratio is a proxy of financial regulation and the analysis of trend showed a constant decline from 21.00% in 2009 to below 19.52% in 2018. It stayed above the median value of 17.10% in Sub-Saharan Africa but its world median value is 15.10%. This suggests that financial institutions in Sub-Saharan Africa are highly regulated compared to the other sub-regions of the world. A significant short run equilibrium relation between capital adequacy and financial performance was evident at 5% significant level. Also, a long run equilibrium relation between Capital adequacy and Financial Performance existed in the 2009 to 2018 period. The second null hypothesis linking capital adequacy and financial performance was rejected as well at 5 percent significant level and conclude that capital adequacy had significant influence on Financial Performance of commercial banks in Kenya. Umoru and Osemwegie, (2016) found similar result.

5.2.3 Effects of Liquidity on Financial Performance of Commercial Banks in Kenya

The liquidity of banks increased from 41% in 2009 to 48.6% in 2018, it averaged 41.34 % (SD=3.656) which is way above the 17% for SSA banks. This shows that Kenyan banks are holding more liquid assets than the rest of the SSA countries. The bank liquidity and financial performance showed significant long run and short run equilibrium relation. The null hypothesis of no influence of liquidity on FP could not be sustained at 5 percent significant level. It was evident that bank liquidity influenced financial performance for banks. The Farouche, (2014) studies were inconclusive suggesting that it depends on the model used. But, Salim and Bilal, (2016), in Romania, found no significant relation between liquidity and Financial Performance as measured by NIM. Ongore, & Kusa, (2013) found no significant relation between liquidity and FP, in Kenya.

5.2.4 Effect of Managerial Efficiency on Financial Performance of Commercial Banks of Kenya

A management efficiency ratio is a financial ratio designed to measure the efficiency of management in controlling the working capital or other resources used by the business. The ratio declined marginally from 9.13 (2009) to 8.18 (2018) similar to the trend elsewhere in most SSA countries. The findings supported a significant influence of Management efficiency on financial performance, especially the short run equilibrium relation. This evidence supports and is in line with the efficiency structure theory which states enhanced managerial efficiency leads to higher performance. The hypothesis H_{04} of no significant influence of Managerial Efficiency is rejected at 5 percent level. This implied that

efficiency played a significant influence on financial performance of commercial banks in Kenya. The findings by Nasserinia, Ariff, and Fan-Fah (2014) also had the same conclusion, however, Duncan and Elliott, (2004) found no association. The presence of positive relationship between efficiency and financial performance for commercial banks in Kenya, suggests that the banks can improve financial performance through the multiple-minded pursuit of lower costs.

Overall, the study found that bank specific factors played a key influence on financial performance of commercial banks. Improved internal financial health of banks is a determining factor of financial efficiency.

5.3 Conclusions

This empirical study showed that Capital Adequacy, Liquidity and Management Efficiency significantly affect the performance of the selected commercial banks in Kenya. However, the effect of Asset quality on the performance of the selected commercial banks is not strong. It is important that the banks re-examine their Asset Quality fundamentals to see that they are aligned to performance strategies. Capital adequacy is a significant driver of financial health of the selected commercial banks in Kenya both in the short run and long run. Raising the Capital adequacy ratio through cheap sources and earnings from investments can save struggling banks from financial losses and save them from further financial crisis. At the same time, the well performing banks will strengthen their performance portfolio in the critical in navigating economic turbulence. Bank Liquidity is an important driver of financial health of selected commercial banks in Kenya in the long

run and therefore, strengthening the liquidity is critical in ensuring strong financial base of banks in future. The findings that Financial Performance of the selected commercial banks in Kenya are liquid-driven in the long run, but, not short run is an indication that banks reap benefits of liquidity in future by working towards maintaining adequate liquidity from cheap investments.

The empirical evidence also shows a short run equilibrium relation between Management efficiency and financial performance of the selected commercial banks in Kenya. Therefore, banks can turn around their performance by investing in efficiency process throughout the entire banking business. Managerial policies and strategies that are cost effective and productive efficient can raise the managerial efficiency and financial performance of banks.

5.4 Recommendations for Policy

The economic factors affect the financial performance of commercial banks in Kenya, in particular Capital adequacy. The banks should work to strengthen the internal fundamentals that raise the adequacy of capital critical in strengthening the banking sector in Kenya, this requires innovations that will redefine the delivery of financial services, improving consumer experience and minimize operational costs, improve customer experience, and market their products.

In view that bank liquidity is a significant driver of financial performance, the banks should work towards keeping health levels of liquidity ratios. The banks should strengthen their risk management by putting up an adequate framework that satisfactorily account for the

liquidity risks posed by individual products and business lines, and align incentives at the business level with the overall risk tolerance of the banks.

Management Efficiency of banks is also a driver of financial performance and banks should therefore work towards cost reduction measures but keeping in mind that focusing on cutting costs alone is not a formula for long-term success. A balanced approach – one that enables a bank not only to improve operating efficiency but also to upgrade its capabilities to respond to market needs and prepare for the future – is imperative to the success of a bank's operations and profitability.

Asset quality is not significant in short run and long run however emphasis should be made to maintain non-performing loan book within the statutory required level. The higher non performing level deprives holds back funds meant for other purposes; lending to other clients.

5.5 Limitations and Suggestion for Further Research

Results of this study are based on small dataset 2009-2018 of only 70 observations, this may fail to well capture the real bank factor-FP relation necessitating further investigations in future to delve further this unresolved point using relatively longer time series.

The study only used microeconomic variables in the current model, incorporating more micro-economic variables and macro-economic variables like external and internal debt that may impact on the banks' performance is a reasonable step towards resolving the relation between the economic factors and FP in Kenya's' commercial banks. This study is

country specific to Kenya, therefore this study suffers from limitation of country specific studies. The results are therefore only applicable to Kenya and any attempt to generalize findings to other countries should be approached with care. The study focused on commercial banks, the results are therefore applicable only to commercial banks and any attempt to generalize findings to other firms outside this scope should be approached with care.

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APPENDICES: APPENDIX I

A. 1: Introduction Letter

Dear Respondent,

My name is Dennis Ayuka Nyakieni, a master's student at Moi University undertaking a study titled, "Effect of Bank-Specific determinants on Financial Performance of Commercial Banks in Kenya". This is an academic study and all information collected shall be utilized purely for this purpose. All data given will be handled with utmost confidentiality.

Thank you

A. 2: Estimated Cost

The items are based on retail market survey of December 2018

	ITEM	AMOUNT (Kshs)
1	Laptop Purchase	70,000
2	Flash disk	1000
3	Modem	4000
4	Airtime	4000
5	Miscellaneous	10,000
6	Total	89,000

Source: Author (2020)

A. 3: List of Licensed Commercial Banks in Kenya as at December 2018

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. Charterhouse Bank Ltd (Bank under statutory management)
7. Chase Bank Kenya (Bank under Statutory Management)
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Islamic Bank
16. Ecobank Kenya
17. Equity Bank
18. Family Bank
19. First Community Bank
20. Guaranty Trust Bank Kenya
21. Guardian Bank
22. Gulf African Bank
23. Habib Bank AG Zurich
24. Housing Finance Company of Kenya
25. I&M Bank
26. Imperial Bank Kenya (In receivership)
27. Jamii Bora Bank
28. Kenya Commercial Bank

29. Mayfair Bank
30. Middle East Bank Kenya
31. National Bank of Kenya
32. NIC Bank
33. Oriental Commercial Bank
34. Paramount Universal Bank
35. Prime Bank (Kenya)
36. SBM Bank Kenya Limited
37. Sidian Bank
38. Spire Bank
39. Stanbic Bank Kenya
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank

Source: CBK, 2018