BANK STRATEGY, INTEREST CAPPING ENVIRONMENT AND BANK PERFORMANCE IN KENYA

BY

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DECLARATION

Declaration by Candidate

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To my wife Viola, daughter Laureen and sons Leon, Lenis and Leeroy for their encouragement to chase my dreams. Despite being affected in every way possible by this quest, your support ensured that I gave it all it took to complete this research. My love for you can never be quantified.

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ABSTRACT

It is widely accepted that bank performance is profoundly affected by changes in interest rates. Besides impacting bank performance, the introduction of interest capping in Kenya resulted in changes in bank strategies encompassing product diversification, bank efficiency and risk management strategies. However, questions remained on the extent to which the aforementioned strategies affected bank performance and the efficacy of the strategies in an interest capping environment. The objective of the study was to determine the moderating effect of interest capping on the relationship between bank strategies and performance based on product diversification, bank efficiency and risk management strategies using Balance Scorecard model, Porters generic strategies and price theory. The study took a positivism approach and used explanatory research design while data analysis was conducted through hierarchical regression. The population of the study was 42 banks as per CBK database for the year ended 2019 and the research focused on 35 banks which met the inclusion and exclusion criteria of being consistently in operation during research period from 2013 to 2019. Secondary data was collected from banks annual financial statements with the assistance of CBK annual bank supervision reports and was analyzed using both descriptive and inferential statistics involving the use of mean and standard deviation. Inferential statistics involved the use of Pearson correlation coefficient to check for associations of variables while hierarchical regression analysis was conducted to test the hypotheses at a 0.05 significance level. Further, the study relied on Hausman's test to decide between random and fixed effects. The model was significant as indicated by the changes in R^2 by 0.369. The fixed effects regression results showed that Product diversification (β=-0.002, $p<0.000$) was significant with negative effect on bank performance while Bank Efficiency (β=0.433, $p<0.000$) and Risk Management (β=40.182, $p<0.000$) were significant with positive effect on bank performance. Further, the results revealed that Interest Rate (β= -2.459915, $p<0.000$) was significant with negative effect on bank performance. The interaction results revealed that the interaction between Product diversification and interest rate (β=0.102, $p<0.000$) was significant with Positive effect on bank performance while the interaction between Bank Efficiency and Interest Rate (β=-15.535, $p<0.000$) was significant with negative effect on bank performance. Further, the interaction between Risk Management and Interest Rate (β=-99.212.182, $p<0.099$) was insignificant with negative effect on bank performance. Therefore, the study moderation effects revealed that only two of the three observed strategies employed by banks during interest capping period, namely product diversification and bank efficiency strategies had significant effect on bank performance. Product diversification interaction results showed a positive and significant effect on bank financial performance while the interaction results on bank efficiency affirmed a negative and significant effect on bank financial performance. Conversely, risk management interaction had a weak or no significant effect on bank financial performance. Therefore, banks should pursue product diversification strategies to compensate for squeezed earnings caused by low interest rate environment. Furthermore, banks should take a long-term view when undertaking efficiency strategies to elude the mistake of scrambling for short term gains. It is therefore recommended that banks should adopt risk-based pricing strategies for loans since there is weak or no evidence to support the claim that risk management strategies increase performance.

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OPERATIONAL DEFINITION OF TERMS

Bank Efficiency: Bank Efficiency is focused with a banks use of minimum inputs to produce the best output through optimizing resources to generate the best products with the minimum costs (Drucker, 1963).

Bank Liquidity: Liquidity means the ability of a bank to meet its financial obligations as they come due (Lee & Hsieh, 2013).

Bank Performance: Bank performance is the achievement of the objectives set forth by the bank within the agreed time and with minimal costs while using available resources (Andrija & Filip, 2017).

Balance Scorecard: This is a management tool that links objectives, initiatives, and measures to an organization's overall strategy in order to implement and manage strategy at all levels of an enterprise (Kaplan & Norton, 2004).

Bank Strategy: This is the direction and scope of a bank over the long-term which achieves advantage for the bank through its configuration of resources within a challenging environment, to meet the needs of markets, and to fulfill stakeholder expectations (Whittington, 2008).

Interest Capping: The cost of borrowing money is known as the interest rate (D'Alberto, 2015). Thus, interest capping is a limit on how high or low an interest rate can rise on variable rate debt.

Product diversification: It is the expansion of a business into a number of markets, sectors, industries, or market segments that it had not previously engaged in (Gemba and Kodama, 2001).

Porter Generic Strategy: Generic strategy is a general approach to a company's positioning within an industry which is defined as the development of an overall cost leadership, differentiation, or focus approach to industry forces (Porter, 2000).

Enterprise Risk Management: Entails managing a variety of an organization's risks holistically (Teoh, *et al*., 2017). It is the process of identifying and addressing methodically the potential events that represent risks to the achievement of strategic objectives.

ACRONYMS AND ABBREVIATIONS

AIG	American International Group
ATM	Automated Teller Machine
BBM	Bank Business Model
BSC	Balance Scorecard
CIR	Cost-to-Income ratio
CBK	Central Bank of Kenya
DW	Durbin Watson
ERM	Enterprise Risk Management
EU	European Union
FE	Fixed Effects
FRA	Financial Ratio Analysis
GFC	Global Financial Crisis
GMM	Generalized Method of Moments
GDP	Gross Domestic Product
KPI	Key Performance Indicator
LLP	Loan Loss Provisions
M&A	Mergers & Acquisition
NACOSTI	National Commission For Science, Technology & Innovation
PESTEL	Political, Economic, Social, Technological, Ecological & Legal
PBT	Profit before Tax
PGS	Porters Generic Strategies
RE	Random Effects
RBV	Resource Based View
ROA	Return on Assets
ROE	Return on Equity
SBU	Strategic Business Unit
SME	Small and Medium Enterprises
UK	United Kingdom
USA	United States of America
VIF	Variance Inflation Factor
M&A	Mergers & Acquisition

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter reviews the background of the study and presents the research statement of the problem and objectives. It concludes with the hypothesis and the significance of the study.

1.1 Background of the Study

The achievement of the bank's goals within the allotted time and at the lowest possible cost while utilizing the resources at hand is referred to as bank performance. It demonstrates how effectively a bank uses all of its resources to maximize profitability, serving as a gauge of resource utilization and managerial effectiveness (Andrija & Filip, 2017).

A country's economic development is greatly influenced by the performance of its banks, which is of great interest to many different parties, including regulators, customers, investors, and the general public. Banks play an important role in the credit finance, consumption, and investment sectors as well as in the conduct of monetary policy and the completion of transactions (Ma & Villar, 2014).

Banks were forced to make much tougher decisions to increase their productivity as a result of the global disruption caused by the low interest rate environment brought on by the Global Financial Crisis (GFC) in 2008. The GFC has had an effect on almost all international markets and is regarded as the worst financial crisis since the Great Depression of the 1930s. Prior to 2009, the US economy was the first to experience significant issues, while other developed European nations also reported problems, both financial and economic in nature (Khaskhelly, 2015).

As a result, the low interest rate environment has kept earnings from rising, with US and European banks reporting a decline in bank profitability of more than 15% globally from the historically high rates seen before the crisis. Due to market volatility and consumers' continued debt repayment in many developed markets, banks have struggled to increase top-line revenue (Drechsler *et al*., 2018).

Lehman Brothers, American International Group Inc. (AIG), Fannie Mae, and Freddie Mac, as well as many other major banks that applied for bailout packages to avoid liquidation, all collapsed as a result of the slowdown in global financial markets. House prices plunged 20% from their peak in 2006, and by the middle of 2008, home equity had fallen to its lowest level, $8.8 trillion, out of a total market value of $13 trillion. 2009 saw a 2.2% decline in global output and a 7% increase in unemployment, totaling more than 35 million jobless people (Horen *et al*, 2014).

The banking environment in Africa is characterized by high interest rates. Due to the high cost of loans, this results in a business environment that discourages investment. In order to shield consumers from the high interest rates that banks charge, many African nations have established interest rate ceilings. Governments that are under political pressure to maintain low interest rates frequently respond by enacting such ceilings. Generally speaking, between 2004 and 2020, interest rates yield in Africa decreased from 39 to 15 percent. African banks are profitable despite the rate decline, with average returns on assets of about 2% over the past 10 years, significantly higher than bank returns elsewhere in the world (Beck & Cull, 2015).

The banking industry in Kenya has undergone significant changes over the past 20 years, and numerous reforms have been implemented that have enhanced and increased the sector's performance. However, the recent instability of the banking

sector's performance in the wake of interest capping in 2016 and its repeal in 2019 prompted more debates about the state of Kenya's banks in the context of the interest capping environment (CBK, 2020).

Over the previous ten years, bank performance in Kenya has increased. Despite the difficult economic climate and shifting shocks from the global financial crisis over the period, the sector has performed well. Profit before Tax (PBT) increased by an average of 18% over the pre-interest capping period between 2009 and 2016 (double-digit growth). In a similar vein, when compared to other lower-middle-income nations in the area, return on asset (ROA) is an average of 3.3% over the same time period. The banks' Return on Assets (ROA) decreased to an average of 2.7% for the three years under capping, i.e. 2.9% in 2019, from 2.6% in 2018 and 2.7% in 2017, which contrasts with the growth in Profit before Tax (PBT) during the interest capping period between 2017 and 2019. Compared to the prior average of 3.3% from 2009 to 2016, this represents a decrease (Alper *et al*., 2019).

According to bank strategy, banks are independent actors involved in activities aimed at maximizing profits, and they change their strategies in response to environmental changes. Environmental variables like PESTEL (political, economic, social, technological, ecological, and legal changes) have an impact on bank strategy and drive managers to make adjustments that have a significant effect on performance (Miner, 2015). Therefore, this study examines three bank strategies—product diversification, bank efficiency, and risk management—that were unmistakably adopted by banks in their effort to maintain performance after the introduction of the interest capping law in 2006.

Managers have shown a great deal of interest in the relationship between bank strategy and performance, and in this study, the concept of bank strategy is examined in relation to various operational strategies relating to product diversification, bank efficiency, and risk management. For instance, risk is a significant trigger for banks' willingness to aggressively lend by loosening credit standards, which may have a negative impact on asset quality over time, when economic growth is favorable, demand and repayment for credit are good, and there is a good balance between these factors. However, banks will be under pressure to increase efficiency by reducing administrative costs as well as expanding their income streams through non-interest fees and commissions to deliver performance objectives when the business cycle turns unfavorable and economic conditions deteriorate (Thaler *et al*, 2015).

The idea behind risk management, which is at the core of bank management, is that banks need higher returns to accept higher levels of risk as well as a compensation for the risk that they cannot completely eliminate through diversification. Risk-taking is thus a necessary component of banking, and profits are thus a reward for taking calculated risks in business. Many authors have generalized and expanded on the risk management strategy for banks, including Silva & Chan (2014) and Teoh, et al. (2017). Overall, the literature currently available shows a positive relationship between risk management and bank performance.

Since Kenyan banks are operating in a much more challenging environment as a result of the low interest rate environment, bank efficiency programs have taken center stage. By reducing administrative costs that support desired profitability, banks were forced to change the nature of their business models as a result of the interest rate cap's reduction in interest rate margins (Alper et al., 2019). By restructuring their

operations, cutting staff, and implementing new technology, banks were able to take strategic precautions against the capping of interest rates. As a result, in order to maintain profitability, many banks have increased their focus on cost-cutting and efficiency. There is broad agreement among academics that profitability and bank efficiency are positively correlated (Dietrich, 2010; Baik *et al*., 2010; Gill, *et al*., 2014).

One of the most important strategies banks use is product diversification. Banks are typically thought of as financial organizations that accept deposits and issue loans. But as banks' sources of income are contracting, non-interest income—which primarily consists of commission, fee, and trading income—is becoming more and more significant. The most striking change in Kenya's low interest rate environment has been a move away from the traditional "core" banking model, which prioritizes interest income generation through deposit taking and lending, and toward a model that places more emphasis on fee-generating activities like service fees, commissions for mobile banking, ATM transaction fees, bancassurance, and brokerage activities (Engle et al., 2014). The majority of the literature cites a connection between performance and diversification that is positive (Yigit & Tur, 2012; Rishi *et al., 2014;* Makhoha, *et al*., 2016).

One of the key elements affecting a bank's financial performance is interest rate, which is the cost a borrower pays to use money from a financial institution (Crowley, 2007). The loan rates, for instance, were 16 percent in early 2000 and reached a peak of 20 percent by the end of 2015. Kenya has experienced unusually high interest rates over the past 20 years. Bank loan rates have drawn more public attention, as is typical,

and many people think that the Kenyan banking industry was making excessive profits from these higher loan rates.

Kenya started regulating the cost of commercial credit in August 2016 by imposing an interest rate cap. The cap was put in place when the Banking (Amendment) Bill 2016 was signed by the President of Kenya. This bill set a ceiling on loan interest rates and a corresponding floor on the interest rates offered for deposit accounts by commercial banks. Since then, Kenya's interest rates have stayed relatively low, with an average of 13%. (CBK, 2020).

In developed nations, there is evidence that interest rates have a moderating effect on bank performance; however, none of the studies reviewed in Kenya looked at the moderating effect of interest capping on bank performance. The goal of the study was to ascertain how much strategies for product diversification, bank efficiency, and risk management affected bank performance and how effective the strategies were in an environment with interest caps. The inclusion of interest cap as a moderator was more important for producing pertinent implications on whether product diversification, bank efficiency, and risk management strategies were effective in the wake of the low interest rate environment and for providing conclusions and knowledge that will inform bank management and policy makers to better address the changes in the low interest rate environment within the banking industry.

By using interest rate capping as the study's moderator, previous studies on the connection between interest rates and bank performance have been informed (Demirgüç-Kunt & Huizinga, 1993; Naceur, 2003; Mang'eli, 2012; Khan & Sattar, 2014). These studies all agree that the level of market interest rate spread has a significant impact on how well commercial banks perform. As a result, a low interest

rate environment directly affects performance, and it was necessary to comprehend how it modifies bank performance and strategy in Kenya.

Commercial banks primarily rely on interest income, and a low interest rate environment has an impact on the amount of interest margin that is generated, which has a direct bearing on the financial performance of the bank. Because of this, low interest rate environments force banks to withdraw credit from certain societal segments that are deemed risky; reform efficiency levels through downsizing and financial technology optimization; drive the need for diversification to other sources of income such as fees and commissions; and tighten the management of asset quality (Miller, 2013; Maimbo & Gallegos, 2014; Temin & Voth, 2004; Heng, 2015).

The banking services sector has increased its contribution to Kenya's economic growth over the past 20 years, from 3.7% of GDP in 2009 to 9.2% of GDP in 2013. According to indicators of banking sector development, Kenya's banking system has generally developed favorably since 2000, pointing to a banking sector model that was more accessible, more stable, and less concentrated. Strong lending volume growth, high market-based interest rates, technological advancements, and a significant expansion of bank branch networks have been the main trends. (Aburime, 2008).

To lessen the burden of loan repayment on borrowers, Kenya introduced an interest rate cap in 2016. The cap, which kept deposit rates at 70% of the benchmark and lending rates at 4% above the central bank's benchmark, was implemented in an effort to widen financial inclusion and improve credit availability. On the other hand, the cap prompted a swift response from banks, which instead resulted in risk aversion and a decrease in lending, particularly to small and medium-sized businesses. In order to

make sure that performance goals are met, banks have also started reviewing their revenue sources and level of efficiency. The high court declared the interest cap unconstitutional in March 2019 and claimed that controlling interest rates damages the relationship between banks and their clients.

In November 2019, the cap was removed, allowing banks to set their own interest rates for credit. On the other hand, because any increase needs regulatory approval, banks did not raise their lending rates after the repeal. Due to the low interest rate environment that Kenyan banks have been operating in since 2016, those institutions have reviewed their strategic models for product diversification, bank efficiency, and risk management techniques.

The effect of the low interest rate environment on bank performance has been a topic of renewed discussion internationally in recent years. There are many justifications for using interest rate ceilings. These include the use of caps to support a particular industry or sector, safeguarding consumers from usury and exploitation, safeguarding borrowers from predatory lending and exorbitant interest rates, providing subsidies to particular groups, and reducing the risk-taking behavior of credit providers, among other things. Despite its best intentions, the rate cap has generally had a negative effect on bank performance (Naceur, 2003; Khan et al., 2014; Ng'ang'a, 2017).

Similar to this, international experience demonstrates that banks adopt a new strategy in their effort to adapt to low interest rate environments, such as withdrawing credit from the poor or particular segments of society because they are considered risky; reforms to enhance efficiency, such as downsizing and optimizing on financial technology; driving the need for diversification to other affordable sources of income,

such as fees and commissions; and tightening the management of asset q (Miller , 2013; Maimbo & Gallegos, 2014; Temin & Voth, 2004; Heng , 2015).

Although earlier researchers concurred that low interest rate environments have an impact on bank profitability, new data on the Kenyan case suggests that interest cap policies have a negative impact on bank performance (Ng'ang'a 2017). Understanding the impact of interest rate changes and how to respond is helpful to bank management and government organizations in order to enable sustained bank profitability that fosters goodwill among stakeholders such as customers, shareholders, employees, and the general public in the face of ongoing rate turbulence.

Against this background, this study sought to determine the moderating effect of interest capping on bank strategies covering product diversification, bank efficiency and risk management and bank performance in Kenya.

1.2 Statement of the Problem

A free market environment that gives banks the freedom to create strategies that improve the banking industry's profitability as well as a county's economic development for the sustainability of businesses, jobs, and livelihoods is the foundation for sound bank performance. However, the implementation of interest capping in Kenya in 2016 and its repeal in 2019 sparked more debate about the effects of interest capping on bank performance and strategy in Kenya.

Profit before Tax (PBT) increased by an average of 18% during the pre-interest capping period between 2009 and 2016 according to bank performance. In contrast, the growth of PBT decreased to an average of 3% during the interest capping period between 2017 and 2019. This was also reflected in the banks' ROA, which decreased

from an average of 3.3% between 2009 and 2016 to 2.7% for the three years under capping (CBK, 2020).

This study found that after interest caps were implemented, banks used strategies involving product diversification, bank efficiency, and risk management in order to maintain performance. There are still concerns about how much the aforementioned strategies impacted bank performance and how effective they were in an environment where interest rates were capped.

While bank performance declined as a result of interest cap, less is known about how product diversification, bank efficiency, and risk management employed strategies affected bank performance and their effectiveness in an interest cap environment. The need to comprehend the moderating impact of interest capping on bank strategies and firm financial performance during the interest cap period in Kenya resulted from the lack of this knowledge.

Rishi et al. (2014), Makokha et al. (2016), and Berg (2016) all found a positive correlation between product diversification and firm performance. On the other hand, few studies (Jasper, 2016; Iqbal et al., 2012; Phung & Mishra, 2016) reported a negative or no relationship between product diversification and profitability. The general consensus among academics is that business efficiency and firm performance have a positive relationship (Baik et al., 2010; Gill et al., 2014; Jakada & Aliyu., 2015). The relationship between efficiency and performance, according to studies by Santosuosso (2014), Warrad & Al Omari (2015), is either weak or nonexistent. While most studies show a positive correlation between risk management and firm performance (Pagach & Warr, 2007; Silva & Chan, 2014; Teoh et al., 2017), a few

studies (Shima et al., 2013; Florio & Leoni, 2017) found a negative or no correlation between risk management and firm's financial performance.

Kenya has far fewer studies on interest capping's effects than developed nations, despite the fact that empirical literature on the topic has mainly concentrated on those nations. This study used panel data regression to examine the previously unresearched influence of interest capping moderation on bank performance and strategy. It is crucial to address the moderating impact of interest rate capping on bank strategy and performance because altering the rate of interest charged on loans has an impact on bank strategies and, as a result, bank performance, which promotes goodwill among stakeholders like customers, shareholders, employees, and the general public.

Thus, the objective of the study was to determine the moderating effect of interest capping on bank strategies and bank performance in Kenya using the Balance Scorecard approach.

1.3 Objectives of the Study

1.3.1 General Objective

The overall aim of the study was to determine the moderating effect of interest capping environment on bank strategy and bank performance in Kenya.

1.3.2 Specific Objectives

The specific objectives include:

1) To determine the effect of product diversification on bank financial performance.

2) To determine the effect of bank efficiency on bank financial performance.

3) To determine the effect of risk management on bank financial performance.

4a) To establish the moderating effect of interest cap on product diversification-bank financial performance relationship.

4b) To establish the moderating effect of interest cap on bank efficiency-bank financial performance relationship.

4c) To establish the moderating effect of interest cap on risk management-bank financial performance.

1.4 Hypothesis

H_{01}: Product diversification has no significant effect on bank financial performance.

H_{02}: Bank efficiency has no significant effect on bank financial performance.

H_{03}: Risk management has no significant effect on bank financial performance.

H_{04a}: Interest cap has no significant moderating effect on product diversification-bank financial performance relationship.

H_{04b}: Interest cap has no significant moderating effect on bank efficiency-bank financial performance relationship.

H_{04c}: Interest cap has no significant moderating effect on risk management-bank financial performance relationship.

1.5 Significance of the Study

The study's objective was to develop a framework for bank managers on how to sustain bank performance in an environment of low interest rates while fostering goodwill among stakeholders like policymakers, clients, consumer advocacy organizations, employees, and the general public in order to strike a balance that serves the needs of all stakeholders. This was done in an effort to create opportunities for collaborative stakeholder decision-making in a low-interest rate environment to ensure the sustainability of livelihoods, businesses, and jobs.

The study gave academics and students a foundational understanding of how the Balance Scorecard model (Kaplan & Norton, 2004) can be applied to analyze the

effects of interest capping on bank performance and strategy in Kenya. The study specifically added to the body of literature by conducting an empirical investigation that directly addresses the degree to which product diversification, bank efficiency, and risk management strategies impact bank performance and the effectiveness of the strategies in an environment with low interest rates.

1.6 Scope of the Study

The bank strategic variables that were investigated include product diversification, bank efficiency and risk management as independent variables while bank financial performance and interest cap was the dependent and moderator variables respectively. The study incorporated panel data regression as was informed by the focus of the study which was describing change over time against bank strategic indicators.

The coverage of the study was commercial banks which was limited to 42 banks between the periods 2013 to 2015 for the pre-interest cap period and between the periods 2017 to 2019 for the post-interest cap period. The study made use of secondary data from annual audited financial reports available at CBK repository.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter presents the literature reviewed in determining the moderating effect of interest capping on bank strategy and performance in Kenya. The first section discussed the concepts of the study which include firm performance, bank strategy and interest capping environment while the second section presented the theoretical framework as well as empirical literature review for the study. The section concluded by unveiling the summary of gaps and conceptual framework.

2.1 Concept of Bank Performance

In almost all areas of strategic management, the idea of performance has received more attention in recent decades. Performance is a subjective perception of reality, which accounts for the many criticisms of the idea and the metrics used to measure it. The financial crisis that engulfed the world economy and caused a persistent need for improvement in the area of performance of entities is another factor contributing to the abundance of studies at the international level in the field of performance.

The term "firm performance" is frequently used in academic writing, but it is only rarely defined. The existence of confusion with this concept is being discussed more and more due to the numerous concepts used in defining performance. As a result, concepts like productivity, efficiency, effectiveness, economy, earning potential, profitability, competitiveness, etc. can be confused with firm performance. For this reason, a clear and unambiguous definition of the concept of performance is being pushed for more and more. When compared to intended outputs, an organization's actual results or output are called "firm performance." It refers to putting into action,

achieving, finishing a task, carrying out a duty, or performing a specific activity. It is predicated on the notion that a voluntary association of productive resources, such as human, physical, and capital resources, is what constitutes an organization for the purposes of achieving a common goal (Tomal and Jones, 2015).

The success of a firm is a reflection of its capacity to use both material and human resources to meet its goals. It shows the relationship between the output outcomes and the input resources used in the process of business operations of enterprises and is regarded as the effectiveness of using business means during the production and consumption process. Consequently, bank performance is the accomplishment of the goals set forth by the bank within the agreed time frame and with the least amount of expenses while utilizing the resources at hand. This is crucial for maintaining ongoing activity and ensuring that its investors receive a fair return. (Kumar, 2018). Therefore, a bank's ability to sustainably generate a profit serves as its first line of defense against unforeseen losses. In order to ensure more resilient banks that can withstand dynamic changes in the business environment, regulators like CBK are also concerned about it.

Both internal and external factors can be categorized as firm performance determinants. The management choices and strategic goals of the bank can be referred to as internal determinants of firm performance. Differences in bank management objectives, policies, decisions, and actions have an impact on management effects, which are reflected in variations in bank operating results, including profitability. The profitability of the bank is directly impacted by internal factors, such as management decisions regarding risk and cost management, because the majority of these factors are kept private. Other internal variables like asset quality and liquidity are regarded as factors unique to banks. According to Deephouse et al. (2013), low asset quality

and inadequate liquidity are the two main reasons for bank failures and the main sources of credit and liquidity risk, respectively. Researchers are particularly interested in how these factors affect bank profitability.

The factors that are not influenced by a specific bank's decisions and policies, but rather by external events, are referred to as external determinants of bank performance. In order to distinguish their influence from that of the bank structure and to better understand how the former affects profitability, a number of external determinants, including PESTEL (political, economic, social, technological, ecological, and legal factors), are included separately in the performance examination (Yong, 2017).

In particular, the interest rate is a significant economic factor in this research project's analysis of bank performance. It has a significant impact on a bank's performance and can be divided into two main parts: the interest rate charged to depositors and the interest rate charged on loans. The term "spread" refers to the distinction between the deposit rate and the loan rate. Because it reflects the cost of intermediation that banks incur, the size of banking spreads can be used to measure the efficiency of the financial sector. The macroeconomic, regulatory, and institutional context in which banks operate is responsible for some of these costs, while the internal characteristics of the banks themselves are responsible for others. Therefore, according to Borio et al. (2015), the most crucial indicator of bank profitability is the effectiveness of cost management.

Profitability performance, growth performance, market value performance, customer and employee satisfaction, environmental performance, environmental audit performance, corporate governance performance, and social performance are some of

the potential aspects of firm performance. The capacity of a business to turn a profit is known as profitability performance. After paying all expenses directly related to the generation of the revenue, such as those associated with producing a product, and other expenses associated with the conduct of business activities, what is left over is what is known as a profit.

The company's goal is to increase the wealth of its current shareholders. Investor satisfaction can be attained through superior financial performance, which can be exemplified by profitability, growth, and market value. Profitability, growth, and market value are three factors that work best together. The profitability gauges a company's historical capacity for yielding profits. The price in the market is referred to as "market value performance." Like stock in a company, the financial asset should be valued in the market. The term "market value" is also frequently used to describe a publicly traded company's market capitalization, which is calculated by multiplying the number of outstanding shares by the stock price at the time (Glick et al., 2005).

Market Value, which represents the external evaluation and expectation of future performance of firms, is thought of as a potential variable. It should be related to past firm profitability and growth rates while also taking into account anticipated future market shifts and competitor activity. Effective risk mitigation and return maximization are provided by the diversification strategy. Thus, an important consideration is a company's market value as well as the capability of forecasting stock trends using data that has been made publicly available. Both general investors and stakeholders in publicly traded companies need information about stock returns.

Anomalies in the market enable investors to profit from changes in the market. The stock market's indicators of financial report and other necessary information reveal

how to maximize stakeholder and investor value through better business operation performance. The share price performance is revealed by studies on weak form efficiency and semi-strong form efficiency. The firm's growth performance is defined as an increase in size and/or maturity, frequently over time. According to Lingaraja et al. (2015), growth typically happens as a stage of maturation or as a journey toward completion or fulfillment.

The expansion shows a company's historical capacity to grow. Even at the same level of profitability, the size expansion will result in a greater overall profit and cash flow generation. Larger companies may benefit from economies of scale and market power, which will increase their long-term profitability. Stock indices, in addition to serving as an indicator of market movements and a benchmark for evaluating the performance of stocks included in that index, have a significant impact on economic growth (Rajesh et al., 2015).

Additional factors that affect business performance include customer and employee satisfaction. Customers expect businesses to meet their expectations in terms of the products and services they offer. Companies must comprehend their customers' needs, prevent flaws, and raise the perceived quality and value of their products in order to achieve this. A key performance indicator in business, customer satisfaction measures how well a company's goods and services meet or exceed a customer's expectations. Consumer loyalty and purchase intentions are predicted by customer satisfaction, which raises consumers' willingness to pay and, as a result, the value that a company creates.

In terms of their roles and responsibilities, the workplace, and their interactions with management, employees who are satisfied with their jobs are said to be so. This group

usually places a high value on well-defined job descriptions, training expenditures, career plans, and favorable bonus practices. The ability of a company to recruit and retain employees and maintain lower turnover rates over time is directly correlated with employee satisfaction. Therefore, it is crucial to learn which combination of benefits is most important to them and what abilities they hope to gain as their careers progress (Barney & Clark, 2007).

It is possible to think of social and environmental performance as a way to please communities and governments. Safe environmental practices, improved product quality and safety, moral advertising, minority employment, and the creation of social projects are some actions linked to the satisfaction of these groups. An analytical tool to compare different plants within a company or different companies within an industry, for instance, based on specific environmental characteristics is the environmental performance indicator. Many business decisions, especially those that are socially and environmentally responsible ones, have an impact on indirect stakeholders like governments and communities.

The ability to satisfy communities and governments through social and environmental performance is possible, and degradation of the environment has long been seen as a pressing concern. One of the main causes of the increased pollution and quick depletion of environmental resources is the expansion of industries, so organizational structures must be modified to meet the needs of the local communities. Information about the environment would undoubtedly assist businesses in making decisions both internally and externally. Therefore, it is crucial that the company dedicate a portion of its increased profits from business operations to environmental protection. Because it helps to lessen the impact of a company's activities on the environment,

environmental audit is one of the comprehensive approaches to an environmental management system. Social performance is the successful implementation of a company's mission in accordance with societal norms. An organization must manage its social performance as carefully and purposefully as it manages its financial performance in order to achieve strong social performance (Vasanth et al., 2015).

Additionally important to firm performance are corporate governance and corporate social performance. In order to promote business prosperity and corporate accountability and to realize long-term shareholder value while taking into account the interests of other stakeholders, corporate governance is defined as the process and structure used to direct and manage a company's business and affairs. Internal and external corporate governance are the two mechanisms that make up corporate governance. The board of directors oversees top management through internal corporate governance, which prioritizes the interests of the shareholders. On the other hand, external corporate governance, which involves many parties including suppliers, debtors, accountants, lawyers, credit rating agencies, and investment banks, monitors and controls manager behavior through external laws and regulations. The management of businesses and the stewardship of investors' capital therefore depend on the corporate governance pillars of accountability, transparency, and moral conduct. Companies that follow these guidelines are more likely to perform better than those that don't in any or all of these areas. Contrarily, corporate social performance refers to a company's consideration of and response to issues that go beyond the firm's specific economic, technical, and legal requirements in order to achieve both the traditional economic benefits and the social benefits the company seeks. In light of this, corporate social performance refers to a company's ongoing commitment to act morally, promote economic growth, and enhance the lives of its

workforce, their families, the local community, and society as a whole. (Harter et al., 2002).

Modern performance measurement models suggest the use of both monetary and non-monetary criteria in accordance with the corporate strategy. Prior to recently, businesses focused on using financial performance measures as the cornerstone of performance measurement and evaluation procedures. Therefore, relying solely on financial performance measures has drawn criticism from researchers. Companies began to incorporate important non-financial measures into their performance measurement systems as a result, giving managers the necessary information about the state of the company as a whole. Scholars were prompted to propose the Balanced Scorecard (BSC) as a mechanism to link performance measures by examining the business's strategic vision from four different perspectives: financial, customer, internal processes, and learning and growth. This is because sole reliance on financial approaches creates a gap between strategy formulation and execution. Performance management systems can achieve their goals thanks to the Balanced Scorecard, which takes into account the value of both tangible and intangible assets (Kaplan & Norton, 2004).

As a result, both a financial and non-financial perspective affect how banks perform. Therefore, banks should place more emphasis on addressing both the non-financial dimensions of performance as well as the financial aspects. The reason for this is that in contemporary bank strategic management, bank performance has emerged as a crucial factor. The performance and quality of the employees as well as their capacity to meet client needs are key factors in the stability and longevity of the client relationships that banks rely on. For instance, higher customer satisfaction improves

financial performance by boosting customer retention, lowering price elasticity, lowering marketing expenses through effective word-of-mouth promotion, lowering transaction costs, and boosting brand reputation (Khan et al., 2016).

2.2 Concept of Bank Strategy

According to Michael Porter (1980), strategy is about gaining a competitive advantage by being distinctive, providing special value to the customer, and having a clear and actionable view of positioning within the industry. According to Johnson & Whittington (2008), strategy is "the direction and scope of an organization over the long-term which achieves advantage for the organization through its configuration of resources within a challenging environment, to meet the needs of markets, and to fulfill stakeholder expectations". The basic long-term goals of an enterprise, as well as the adoption of courses of action and the allocation of resources required for achieving these goals, are determined by strategy, according to Chandler (1962). Therefore, a strategy is a plan to produce financial gains based on more affordable, higher-quality, or novel products. By determining the seriousness of a business threat and differentiating between worthwhile and marginal business opportunities, it enables firms to build on their strengths, identify and strengthen their weaknesses, and capitalize on their opportunities. To ensure superior performance and to give a clearer understanding of the overall direction of the firm, strategy must also integrate the firm with its external environment (Lorenz et al., 2015).

Strategic management was made popular by Henry Mintzberg, who described it as "the means by which an individual or an organization accomplishes its objectives." Mintzberg's 5Ps of strategy is a model that aids businesses in comprehending and creating strategy from five distinct viewpoints: plan, pattern, position, ploy, or

perspective. A well-made plan is necessary for a successful strategy. The goal of creating a plan is to determine the company's current situation and outline its future goals. It should specify the precise goals the company has set for itself. The plan should include a course of action that the company plans to take as well as the rules it will adhere to in carrying out the strategy. When creating the business plan, tools like SWOT analysis and PESTEL analysis can be helpful. In addition, effective project management and change management strategies are crucial for creating a successful plan. A ploy, in Mintzberg's view, is a way to outperform competitors by making an effort to influence them or plan a disruption of their business. This is a strategy for outperforming the products' rivals. It is impossible to completely avoid competitors in a market in typical business situations. Ploys are specific strategies that a company can use to obstruct or affect the actions of competitors (Mintzberg, 1987).

When it comes to patterns, the business must examine its own actions because the outcome of the strategy does not always result from plan and ploy. This makes it crucial for the company to give the daily tasks they complete in the course of conducting business more thought. Additionally, Position is a different method for defining the strategy. Position describes the company's current position in the market and in comparison to its rivals in the same market. Positioning the company makes it easier for them to understand how they intend to attract more target market consumers to their product. As it builds its position, the company must consider both the advantages and disadvantages, working to maximize the benefits and minimize the disadvantages. The focus of perspective is on molding the organizational culture and personality. The business's perspective will be shaped by how they see the market and what they think customers want. A pattern of thinking aids an organization in

developing a perspective, much like organizational behavior patterns can emerge as a strategy (Jofre, 2011).

As a result, when we talk about strategy, we mean a complicated web of ideas, insights, experiences, goals, knowledge, memories, perceptions, and expectations that serves as general direction for particular actions taken in pursuit of particular ends. Because of how dynamic and quickly things change today, it is very challenging for any modern business enterprise to function. Businesses are under a lot of pressure to figure out how to survive due to uncertainties, threats, and constraints. The best course of action in these situations is to utilize a strategy that can assist businesses in exploring potential opportunities while also maximizing profitability while using the fewest resources possible. The method used to develop strategy represents a commitment to pursue a specific set of actions out of a wide range of options and typically provides an answer to the question "How?" These decisions concern a variety of business-related issues, including how the company will go about acquiring and keeping customers, how it will successfully compete with rivals or competitors, how it will decide to run operations, and how it will enhance its financial, industry, and market performance.

The goal of strategy is to ensure that all employees, regardless of level or functional area, have a clear understanding of the organization's mission, goals, and performance standards. Thus, it facilitates implementation and allows for maximum synchronicity and harmony. As a result, the desired outcomes are attained more effectively and inexpensively. It increases competitive advantage while decreasing competitive disadvantage. Every company that competes in an industry has a strategy because it describes how a specific goal will be accomplished. The management of the company

must actively plan how its operations will be carried out. This is due to the fact that a well-thought-out strategy serves as management's guide for conducting business, a map for gaining a competitive edge, a game plan for winning over customers, and an approach for enhancing financial performance. Second, they assert that a company with a strategy-focused business model has a better chance of achieving strong bottom-line results than one whose management views strategy as incidental and places its priorities elsewhere. Revenue growth, earnings, and return on investment are all significantly impacted favorably by the formulation and implementation of effective strategies (Thompson et al., 2010).

Arenas, differentiators, vehicles, staging, and economic logic are the five parts of a strategy. Arenas are locations where a company will operate. A firm's decision-making arenas may include its goods, services, channels of distribution, market sectors, regions, technologies, and even stages of the value-creation process. The identification of arenas must be extremely specific, in contrast to vision statements, which are frequently quite general. It explains to managers exactly what the company should and shouldn't do. Additionally, because businesses can hire outside contractors to provide everything from labor to manufacturing services, some businesses may have a fairly limited range of arena choices. Differentiators are qualities and characteristics of a company's goods or services that help it stand out from the competition. Companies can succeed in the market by excelling in a number of common areas, such as branding, customization, technical superiority, cost, quality, and dependability. The means of participating in specific arenas, such as alliances, acquisitions, and organic investment and growth, are known as vehicles. Timing and speed, or pace of strategic moves is referred to as staging and pacing. Options for staging typically take into account the money, human capital, and knowledge that are

available. Resources, urgency, credibility, and the need for quick victories should all play a role in how decisions about staging are made. Few businesses have the resources to complete everything they'd like to do right away, so they typically have to match opportunities with resources that are available. Additionally, not all chances to enter new arenas are everlasting; some only have temporary windows. In these situations, it might be necessary to implement a strategy based on early successes and the credibility of a few key stakeholders. Economic logic deals with how the company will turn a profit, or how it will produce gains above its cost of capital. The "fulcrum" for making money is economic logic. Naturally, a company must cover all fixed, variable, and financing costs in order to generate normal profits. For any organization, generating desired returns above the firm's cost of capital is a challenging task. Consider both costs and revenues when examining a firm's economic reasoning. Sometimes the cost side of the equation is where economic logic is most prevalent. Therefore, the firm is typically in a position to perform well when the five components of strategy are in alignment and mutually reinforcing. However, high performance levels ultimately indicate that a strategy is being successfully implemented (Ansoff, 2018).

The corporate level, the business level, and the functional level are the three levels at which strategy can be created. Corporate level strategy covers all business operations for the entire organization and includes the strategies developed by the top management team. By outlining a path for the entire organization, the corporate level strategy helps the organization better achieve its vision and mission. Corporate-level strategy, or "what the company wants to achieve as a whole," is the company's action plan. Strategic decisions at this level are concerned with extensive organizational policies and are most helpful for sectional companies with diverse business interests.

Compared to decisions made at the business or functional level, strategic decisions made at the corporate level typically have a more value-driven, theoretical, and abstract nature. Corporate-level strategic activities are associated with greater risk, cost, and profit potential as well as greater need for adaptability. These are the inevitable results of corporate-level strategy's forward-thinking, inventive, and pervasive nature. The same category applies to significant financial policy choices involving acquisition, diversification, and structural redesign. Thus, the primary goal of corporate strategic management is to develop and implement plans that contribute to the achievement of the organization's objectives (Kallenberg, 2020).

When it comes to business level strategy, decision-makers are mainly focused on issues that have a direct impact on the integration of the functional units and are related to industries or product markets. The corporate-level general abstract statements of direction and intent are transformed into concrete functional objectives by business-level strategic decisions. They continue to create division- or Strategic Business Unit (SBU)-specific strategies. The business-level strategy is aligned with the company objectives in order to achieve SBU-level or SBU-level goals. It addresses resource distribution among functional areas as well as functional strategies, which are again in line with the corporate level functional strategies (Srinivasan, 2014).

Making decisions at the functional level affects specific functional areas like production, marketing, hiring, and finances, among others. 'Tactical' decisions are frequently used to describe decisions made at the functional level. Functional strategy places a stronger emphasis on "doing things right" than corporate and business strategies, which are more concerned with "doing the right things." But these choices

must adhere to the framework of the business strategy and be informed by broad strategic considerations. Thus, for instance, decisions about marketing policy should establish rules for managing marketing in line with the selected strategy that provides the overall course of business (Acur *et al*., 2012).

A process that involves top management's analysis of the environment in which the organization operates prior to formulating a strategy as well as the plan for implementation and control of the strategy is known as strategic management, which has a broader definition than strategy. The evaluation, planning, and implementation process is one that aims to keep or strengthen competitive advantage. Both the internal and external environments are taken into consideration during the evaluation process. Creating business models, corporate direction, competitive strategies, global strategies, acquisitions, and cooperative action are all aspects of planning. Building the appropriate organizational structure, creating a management culture, managing the strategic processes, and guiding the organization through corporate governance are all necessary during the implementation phase.

Goal setting, analysis, strategy formulation, strategy implementation, and strategy control and monitoring are the five steps that make up the strategic management process. The formulation of goals, a mission statement, values, and organizational objectives forms the basis of the strategic management process. The organization's pursuit of strategic opportunities is guided by its goals, mission statement, values, and objectives. Managers make strategic decisions about how to achieve goals and increase revenue generation through goal-setting as well. Organizations devise strategies for competing in a highly competitive, international business environment through goal setting. Creating specific actions that will help an organization achieve

its objectives is the idea behind strategy formation. Using the data from the analyses, setting priorities, and choosing how to handle the organization's most pressing problems are all part of the strategy formation process. Additionally, an organization seeks to maximize profitability and maintain a competitive advantage through the formulation of its strategy (Root, 2014).

Implementing a strategy involves putting it into practice to achieve organizational objectives. The idea behind this concept is to gather all the resources that are available and necessary to implement the strategic plan. In order to achieve their financial, management, human resource, and operational objectives, organizations put their strategies into action by developing budgets, programs, and policies. Cooperation between management and other staff members is essential for the effective implementation of a strategic plan. The monitoring of the strategy after it has been implemented is a final idea. Monitoring a strategy entails assessing it to see if it accomplishes the objectives set forth by the organization. Here, a company decides which aspects of the plan to measure and how to measure them, after which it compares the results to what was expected. An organization can determine when and how to modify the plan to take into account shifting trends by monitoring (Blatstein, 2012).

Therefore, bank strategy indicates that banks are independent actors involved in profit-maximizing activities, where a change in strategy is prompted by the constantly shifting business environment. Environmental factors, including PESTELE (political, economic, social, technological, legal, and ecological) changes influence banks' motivation and strategy to make decisions that have a significant impact on performance. Commercial banks in Kenya responded strategically to the low interest

rate environment after interest rates were capped by reorganizing, cutting staff, adopting new technology, withholding credit from those with low incomes, and instituting transaction-based fees and commissions. In order to maintain performance goals, banks' strategies for product diversification, bank efficiency, and risk management were clear. Banks employ strategies to ensure their survival and, at the same time, increase their relevance in the communities they serve, and they also activate response strategies in search of a favorable competitive positioning in the market. It seeks to establish a profitable and enduring position in opposition to the factors affecting industry competition. A company can position and relate to the environment through strategic responses to ensure its success going forward and to protect itself from environmental surprises (Schafer, 2017).

2.2.1 Product Diversification Strategy

According to Gemba and Kodama (2001), diversification is the expansion of a business into a number of markets, sectors, industries, or market segments that it had not previously engaged in. It describes the expansion of a company's business lines, whether or not they are connected. Through acquisition or expansion, diversification signifies a notable departure from the company's current base of operations to a different business line. When a company combines two or more activities in one operation or operates in more than one location, it is said to be diversified.

Diversification can be divided into two categories: related diversification and unrelated diversification. Building shareholder value by identifying cross-business strategic fits and pooling resources to develop new competitive strengths and capabilities is a related form of diversification. Utilizing a single sales force to contact clients, promoting related products collectively, using similar brand names, and joint

delivery are some examples of related diversification. Contrarily, unrelated diversification entails entering new markets by purchasing an existing business rather than establishing a startup subsidiary. The foundation of this strategy is that growth through acquisitions results in increased shareholder value more quickly and has a shorter payback period (Collins & Montgomery, 2008).

In an effort to outpace competitors, diversification has become a common survival strategy among businesses. Diversification, whether in a related form or not, is a tactical choice made by more managers to boost performance. In order to achieve a predetermined goal regarding improved performance, organizations have chosen from a variety of available strategic alternatives to make the best use of the resources at their disposal. When a company wants to change the way it does business, it will either develop new products on its own or work with another company to enter a new market. Furthermore, diversification has evolved into a tool for gaining a competitive edge and a way for businesses to spread risk across a number of ventures in order to boost performance, boost market operations, and reduce the risk of bankruptcy. A diversification strategy aids in increasing debt capacity and asset deployment while also enabling the organization to use its current competencies, skills, and knowledge to create distinctive products. Diversified businesses can effectively combine unsystematic risk to lower operating cash flow viability and gain competitive advantages (Mawdsley, 2019).

The synergistic motive, the financial motive, the market power motive, the resource motive, the agency motive caused by managerial discretion, and the cost-effectiveness motive are just a few of the many reasons for product diversification (Yuliani *et al*., 2013). These arguments are based on Porter's (1980) assertion that a company should

be positioned in its environment using a variety of tactics that set it apart from its rivals. Diversification, which enables businesses to develop market power and give them access to conglomerate powers, is one tactic for overcoming competition. Businesses can increase their competitive power in the market by diversifying into new markets, rather than relying solely on their existing positions in existing markets (Yuliani *et al*., 2013).

Banks were compelled by shifting market conditions to turn away from traditional lending and toward non-interest activities. By adding new assets or revenue streams through new operations like offering brokerage, investment, and underwriting services as well as trading securities, banks can diversify their asset portfolios. In the past, banks have gotten the majority of their money from issuing loans and collecting interest. However, a sizable portion of a bank's earnings also come from non-interest income, or earnings from sources unconnected to the receipt of interest payments. Bank activities such as service fees, loan negotiation fees, brokerage fees, ATM fees, as well as fees from trading in stocks and bonds, all contribute to non-interest income. Banks can generate non-interest revenue by selling insurance (Meslier *et al*. 2014).

According to Kahloul and Hallara (2010), the ratio of net commissions to gross income is a key indicator of product diversification. This indicator examines the income structure and enables comprehension of a bank's primary activity. The ratio calculates the percentage of total gross income that comes from fee-based or commission-based activities.

2.2.2 Bank Efficiency Strategies

According to Drucker (1963), efficiency is the capacity of an organization to produce its intended results with the least amount of input. It emphasizes the use of minimal

inputs to produce the best output through resource optimization to produce the best products at the lowest possible cost. In the context of banking, a financial system's contribution to productivity and economic growth increases with how effectively those resources are generated and distributed. The definition of efficiency in terms of cost reduction and profit maximization is the same (Jouadi *et al.,* 2014). Due to an interest cap law that reduced lending margins, Kenyan banks have been operating in a low interest rate environment since late 2016. Commercial banks needed to maximize efficiency and cut costs in such a setting. As a result, banks adopted strategies such as restructuring, digitization, and process innovations to combat interest rate capping.

Significant structural changes are made as a result of firm restructuring, which may also include the establishment of new divisional boundaries, a reduction in hierarchy levels and the spread of control, a reduction in product diversification, a reevaluation of compensation, a balancing of processes, and a reformation of governance while reducing employment. It entails reducing management levels, changing the firm's constituents through divestiture and/or acquisition, and reducing the number of employees. Bank restructuring is typically done to address issues with individual banks that are having issues with efficiency or to address issues that are affecting the entire banking system, like declining revenue margins, and to restore and maintain faith and confidence in the individual banks' profitability and efficiency within the banking system (Hoenig & Morris, 2012).

The restructuring process is used by organizations to reorganize their operations for a variety of reasons, according to contemporary literature. These include business and economic variables like environmental changes, political variables, and globalization. Adding new product lines and production facilities, service outlets through a merger,

acquisition, or internal expansion, and the decision to target new customer demographics are additional factors. As a result, the purpose of corporate restructuring may be one or many, with its primary goal being to contribute to the success of the organization. A successful corporate restructuring company won't point out problems where money is lost, but other solutions can be offered to help a business figure out how to handle these strategic problems. Corporate restructuring ultimately supports the recovery, preservation, and enhancement of an organization's value (Mario, 2014).

Four approaches are used in corporate restructuring strategies: financial, portfolio, operational, and organizational. Portfolio restructuring is the alteration and manipulation of a portfolio through the sale of unnecessary assets and the replacement of those assets with those that are essential to the operation of the organization. Organizational restructuring can range from changes in human resource institutional policies as a result of shifts in the environment the organization operates in or based on the firm's circumstances, whereas financial restructuring is a process meant to prevent a company from going out of business. The structure of an organization may change significantly as a result of organizational restructuring, which may also involve the establishment of new divisional boundaries, the reduction of hierarchy levels and the spread of control, the reduction of product diversification, a review of compensation, a balancing of processes, and the reform of governance while reducing employment (Bowman and Singh, 2013).

Corporate restructuring has thus emerged as one of the key strategies used by businesses to enhance their financial performance, gain a competitive edge, and control their industry. Due to the implications of adjusting strategies in response to the

low interest rate environment, it is a crucial strategy for banks. As a result, banks reorganized their departments, streamlined their processes, and implemented layoffs in an effort to boost performance. Many Kenyan banks used bank restructuring as a crucial tactic to survive the harsh low interest rate environment. Restructuring efforts have been made by commercial banks in Kenya in an effort to boost performance. By way of illustration, in 2019 Commercial Bank of Africa Ltd. and NIC Bank merged to create NCBA bank Kenya. By expanding the operations of the participating companies, the merger gave NIC and CBA value by increasing their capabilities, efficiency, and market share. The merger activity gave the merged banks the opportunity to utilize the resources and expertise of the acquired firm, gain a second reputation, and lessen competition, all of which led to improved market share and efficiency (CBK, 2018).

Banks' adoption of digital technology was another important cost-cutting measure during the interest cap period. The transition of all traditional banking services and products to an online platform is known as digital banking. Historically, customers could only access these services and programs in person at a bank branch. This implies offering user-friendly digital banking products and services that can be accessed manually through various digital devices. This covers actions like making deposits, taking withdrawals, transferring money, managing savings and checking accounts, applying for financial products, managing loans, paying bills, and using account services. As a result, this encourages digital transformation, a process that aims to enhance an organization by implementing critical changes to its structure through the integration of information, information technology, communications, and connectivity technology. A broad concept of banking is included in digital transformation, including document digitization, electronic signatures for transactions,

teleconferences, online trading platforms, digital stores, e-statements, and mobile payments. Customers use digital disruptions more frequently, and new types of banking solutions are emerging. Therefore, in a century where technological innovation knows no bounds, digital banking as a new business model, offered through multiple integrated channels of electronic banking services, is the future of every banking sector. In order to utilize the staff through their branches more effectively, banks would prefer their customers to be more focused on using digital banking or automation of services (Okiro & Ndungu, 2013).

Internet banking has served as a significant marketplace for customers, allowing them to compare a wide range of goods and services and share their personal experiences as clients of various businesses. The proliferation of online comparison sites, particularly in industries like insurance, telecommunications, and financial services, has given consumers more power and sped up the efficient operation of market forces to their advantage. New payment methods have also been made possible by the development of internet banking applications, with the benefit that they are effective ways to complete transactions in a straightforward manner. Accelerated digitization is still going on because big, digitalized banks can withstand a sudden drop in lending activity better than conventional or traditional banks. Internet banking has thus reduced bank customers' reliance on branch locations, increasing employee productivity. Traditional brick and mortar banks have been found to be less operationally efficient than online banks (Malhotra and Singh, 2006).

Another significant device that has contributed to the banking industry's digital transformation is mobile banking. The average global mobile phone penetration rate is close to 70%, and this phenomenon has evolved into a platform for new mobile app

developments that will be used for purposes other than social communication. This is demonstrated by the fact that usage of mobile banking apps increased by 19 percentage points between 2015 and 2019 among digital consumers from 22 countries, whereas usage of computer-based banking services remained essentially unchanged. Customers have benefited greatly from mobile banking applications and point-of-sale systems, and bank employees' workload has decreased (Kriebel & Debener, 2019).

Through innovation, increased supply diversity, and a more competitive financial system that results in market expansion and financial inclusion, this digital transformation has the potential to increase efficiency. For instance, the convenience of the customer is the main benefit of online banking. Online banking is accessible 365 days a year, 24 hours a day, just like the ATM at the local bank. However, since customers can conduct banking from the convenience of their homes, processing time for all requests is reduced. Additionally, online banking is available everywhere, expands the customer base, is compatible with money management apps, and offers customers end-to-end value. As a result, digitalization not only aids in increasing customer numbers but also in providing top-notch services that boost productivity. Banks can now engage in more sales promotion activities thanks to digitalization, including rewards programs, cashback, promotions, and bonuses in applications. Therefore, there is a high likelihood that the number of customers and the volume of their transactions will change as a result of digitalization (Chauhan *et al*. 2021).

The digitalization of banking has made it possible to manage and attract a larger customer base in new ways. For the benefit of the banks, it is advantageous to use a variety of distribution channels that increase market penetration by allowing different

products to be targeted at various demographic groups. On the other hand, banks that are unable to quickly adapt to the various customers' rapidly changing demands run the risk of losing clients to rival banks that can. The continuous development of technology and growing customer base has altered the way that banking services are provided, and as a result, the customer satisfaction associated with it, because digitalization and the benefit of growing customer bases consistently follow the same increasing pattern (Kumar, 2016).

As a result, a key strategic concern for the banking sector at the moment is the development of digital technology in the banking and financial industries. Fintech-driven digital financial services have the potential to reduce costs by maximizing economies of scale, to speed up, secure, and make transactions more transparent, all of which will increase the efficiency of the banking industry. For instance, the full time equivalent (FTE) approach reveals that the top 30 banking processes use 50% of their cost and that 20% of banking processes can be digitalized, potentially increasing efficiency by 15-20% of total banking costs (McKinsey, 2016).

The decline in interest rates in 2016 compelled banks to adopt technology more widely and go through a digital transformation. The dual purpose of digital transformation is to increase efficiency by reducing the number of physical stores and the number of employees who use them while also enabling banking organizations to offer new service channels through new electronic platforms and service points. Due to the scrutiny placed on business models in the banking sector, the global banking industry invests three times as much in IT as any other industry. Traditional business models and processes are changing as a result of digitalization, disruptive innovation, and new technologies. In order to change their customer interactions, manage their

middle and back-office operations, be competitive, and be prepared for the future, banks must adapt their business models. Banks used automation and self-service to reduce distribution cost structures. For instance, automation sped up the process of handling back-office requests, which eventually contributed to the simplification of back-office operations. Distribution of prioritized tasks was changed, enabling banking staff to assign tasks a priority based on their importance to the business and cascade them to the back office as needed. Additionally, agency banking, online banking, and mobile banking were all widely used to give customers efficiency in terms of saving time and money (Jack & Suri, 2014).

The traditional method of cost efficiency measurement refers to the use of ratio analysis among various financial institutions and to calculate numerous accounting ratios, providing a measurement of the overall financial soundness of financial institutions and the operating efficiency of its management, which means that financial statements are the primary source of accounting information used in measuring the operating efficiency of a financial institution (Tuskan & Stojanovic, 2016).

To determine a bank's cost efficiency ratio, operational costs are typically divided by the total of net interest income and non-interest or fee income. In general, a rising efficiency ratio is unfavorable, while, other things being equal, a decreasing efficiency ratio is a good sign. A lower efficiency ratio indicates that the bank is financially sound because its earnings far outweigh its expenses (Abedin, 2017).

A substantial body of literature describes various methods for calculating the cost effectiveness of banks. The Cost-to-Income (CIR) ratio and Cost Asset (CA) ratio are two well-known accounting ratios that are frequently discussed in publications aimed

at bank audiences. Non-interest expense typically does not include bad debt and tax expense, and the CIR is calculated as non-interest expense divided by the total of net interest income and non-interest income. This metric appeals to the mind and is a simple ratio to use to analyze a bank's cost effectiveness. It is frequently referred to as the "efficiency ratio." CIR is typically regarded as a crucial benchmark, especially for publicly traded banks. It is a good indicator of the independent variable because the operational costs and revenues used in efficiency ratio computation reflect the pricing and production efficiency of a bank. Looking for ways to cut costs is a critical focus for banks insofar as a focus on cost to income ratio causes banks to review their expenses. The risk is that bank managers who are pushing for cost-cutting measures that are not in the best interests of long-term profit maximization may view the cost to income ratio as an end in and of itself. Any one of a few underlying factors may have changed as a result of changes to the CIR (Meslier *et al*., 2014).

Despite theoretical reservations, there is no question that in actuality a bank's cost management still places a high priority on reducing the CIR. Kenyan banks changed their business and operating models after the Banking Amendment Act of 2016 was passed in order to make up for the reduced interest income brought on by interest rate caps. In order to adjust to the low interest rate environment, banks adopted new operating models, primarily through cost-cutting measures.

2.2.3 Risk Management Strategy

Risk is the inescapable future unpredictability brought on by unpredictable factors and expressed by conventional probabilities (Spiegelhalter, 2017). Therefore, risk management refers to a set of actions that people or organizations take to change the risk associated with their main lines of business. Risk identification, risk

measurement, risk mitigation, and risk monitoring and reporting are the four main risk management components included in the generic risk management framework. Consequently, risk management in the banking industry is the logical creation and implementation of a plan to handle potential losses. In the banking industry, managing an institution's exposure to losses or risk and preserving the value of its assets are typically the main goals of risk management practices. Generally speaking, the banking industry is viewed as risky (Boland, 2012).

Stakeholders are calling for greater oversight of the major risks that the organizations face in order to ensure value preservation and growth as a result of ongoing environmental changes. The emergence of a new paradigm known as "Enterprise Risk Management" or "ERM" as an internal control system is one reaction to these rising expectations. In contrast to the conventional silo-based risk management, today's corporate managers highly value enterprise risk management (ERM) as a strategic approach to managing risks faced by business entities in a holistic manner. Therefore, ERM takes into account all risks and aids in achieving organizational goals. It also includes managing risks' negative effects and seizing opportunities through strategic risk management. ERM is a tool that organizations can use to manage the various financial, operational, and market risks they face. As the board and senior management's capacity to monitor the portfolio of risks facing an enterprise grows, ERM also broadens the focus of risk management from a protective stance to a strategic stance. An organization can take into account the potential effects of all types of risks on all processes, activities, stakeholders, products, and services by using an enterprise-wide approach to risk management. Strategic risk management is used to manage the negative effects of risks and take advantage of opportunities (Beasley et al., 2005).

Modern businesses operate in an environment of increased risk and uncertainty. The most important aspect of any organization's operations is its framework for risk management. The risk management plan outlines the components of the risk management program and covers every aspect of the company's long-term operations. Risk management strategy is the practice of risk management that is centered on risk analysis and the use of different approaches to reduce it in an unpredictably economic environment. The organization's risk management process includes an overview of the business environment and capabilities of the company, strategic research to identify the most promising areas of operation, a preliminary assessment of the level of risk, and the search for ways to eliminate or reduce it. Stakeholders are much more worried about risk, and risk management is becoming a more significant business driver. Risk can influence strategic choices, create uncertainty within an organization, or simply be present in all of an organization's activities (Choong 2013).

The main goal of risk management is to boost efficiency by giving the corporation an objective foundation for resource allocation, thereby increasing shareholder value. By identifying high-risk areas and recommending risk-based innovations, it promotes informed decision-making. It also establishes a procedure by which its activities can stabilize financial results and prove to all stakeholders that the organization upholds sound risk stewardship values. By raising the likelihood of success and lowering both the likelihood of failure and the degree of uncertainty associated with achieving the organization's goals, risk management also improves understanding of the potential upside and downside of the factors that can have an impact on an organization (Hoyt & Liebenberg, 2011).

Senior management must have a mandate, show leadership, and be committed to integrating risk management into the organization's culture. It must assign responsibility for risk management across the entire organization and translate risk strategy into tactical and operational objectives. It should support accountability, performance evaluation, and compensation, thereby fostering overall operational effectiveness. By establishing an appropriate risk architecture, strategy, and protocols, it is possible to achieve a good risk-aware culture. The definition and implementation of future risk responses, as well as the identification of current risks, must all be covered by a risk response measure. Risk monitoring and communication is a process step that includes both routine and sporadic reporting of risks. The organization should also receive adequate training and communication to raise risk awareness. In order to identify and put into action solutions to continuously enhance businesses' risk management processes, monitoring risks and the risk management system itself should also be integrated into the process. In order to ensure proper risk identification, assessment, reporting, and response, a general risk culture needs to be fostered (Gates et. al., 2012).

As a result, banks are vulnerable to a variety of risks, including credit risk, operational risk, and market risk. Banks are taking on more risk as they strive to maximize their profits, but taking on too much risk or managing it poorly could result in losses that put not only the security of investors' and depositors' money at risk but also the health of the entire economy. From this point forward, bank managers should evaluate assumed risks in order to allocate their financial resources to the most effective uses. Furthermore, it is widely acknowledged that credit risk is one of the biggest dangers that banks face because lending is one of their primary revenue streams. As a result, managing credit risk has an impact on bank performance (Li et al., 2014).

The Kenyan banking system experienced a slow but constant margin decline in the majority of its product categories as a result of the low interest environment in 2016. The low interest rate environment had an impact on the banking system in that it made clear how much risk banks were taking. Additionally, it gave banks incentives to find novel ways to offset the low interest rates, such as avoiding risky segments like Small and Medium Enterprise (SME) in favor of less risky segments like secured lending and consumer lending (Tripathi & Neerza, 2019).

Building and upholding a strong risk culture within the bank requires taking calculated, deliberate risks based on risk appetite, as well as the necessary checks and controls that continuously detect, assess, and mitigate risks, as well as open protocols for investigating violations and deviations. In order to strengthen the risk culture, management mindsets and behaviors that foster understanding and conviction about the changes required and why they are crucial for the bank are also changed. Additionally, numerous programs work to cultivate the talent and abilities required to implement various changes, such as enforcing new protocol (Valipour *et al*., 2015).

2.3 Concept of Interest Capping Environment

Business environments are broadly divided into internal and external environments and include all pertinent factors that have an impact on a firm's performance. While external factors are perceived as opportunities and threats, internal factors are seen as strengths and weaknesses. The variables that affect a firm's performance in the external environment include those that are out of its control, such as PESTEL (political, economic, social, technological, ecological, and legal factors (Appiah *et al*, 2018).

The cost of borrowing money is known as the interest rate, which is a component of the economic environment (D'Alberto, 2015). It is the payment of rewards on an annual basis from a loan in the form of a percentage. It discusses present claims in relation to future claims on resources and defines the cost of credit in an economy expressed as a percentage of the total amount loaned. The price that balances the willingness to hold wealth in the form of cash and the supply of that wealth is the market interest rate, which is determined by the supply and demand of money. As a result, changes in interest rates may expose an institution to unfavorable changes in the amount of net interest income or other rate-sensitive income sources, which may also harm the underlying value of the institution's assets and liabilities (Miskhin, 2016).

One of the government's business environment interventions and a response to alleged market failures is an interest rate cap. This measure aims to reduce the overall cost of credit in some market segments or the entire economy, as well as the exploitative rates charged to the most vulnerable borrowers. In developed nations, unusually low interest rates have been a common occurrence for some time. Short-term policy rates in the US, UK, and Eurozone were reduced to historically low levels following the financial crisis. The goal was to support the banking industry, which experienced a severe crisis in the wake of Lehman Brothers' collapse, and to provide anti-cyclical impulses against severe recessions. Long ago, in response to the persistent sluggishness of the Japanese economy and deflationary tendencies, the Bank of Japan lowered interest rates (Lee & Kim, 2014).

Evidently, interest caps are used by governments for both political and economic purposes; the most typical one is to support a particular sector of the economy or

industry. For instance, several nations, including some Asian nations (India, Pakistan, etc.), European Union (EU) member states (Spain, Portugal, Belgium et al.), African nations (Nigeria, Ivory Coast, Mali, Zambia, South Africa et al.), the United States, and other nations have regulated interest rates. The goals differ; in Portugal, interest rate caps were implemented to safeguard the most vulnerable parties. Consumers were being protected from predatory lending and high interest rates by France, Belgium, and the UK. In Greece, the goal was to put an end to abuses brought on by excessive freedom. In the Netherlands, the goal was to reduce credit providers' tendency to take risks. In Thailand, the goal was to make financing accessible to borrowers with limited financial resources. In Zambia, it was done to reduce the alleged risk of excessive debt, the high cost of credit, and to improve access to the undeserving. Interest rate caps were implemented in Kenya with the goal of making credit more accessible to all people, but especially to those at the bottom of the social scale. This is due to calls for periodic regulation of borrowing costs being sparked by the substantial profits the Kenyan banking system generated. As a result, interest rates are used when the government determines that a particular industry has a failing market or when an interest rate cap tries to put more emphasis on the financial resources in the same sector than a market can determine. On other fronts, it is frequently argued that interest rate caps are appropriate because financial institutions charge customers exorbitant interest rates in an effort to generate excessive profits (Ngugi, 2016).

In the economies where they have been implemented, interest rate caps primarily have a negative effect. Some financial institutions in South Africa charged credit life insurance and other services to get around caps, which made the total cost of credit less transparent. Because the interest rate ceiling was deemed to be too low in West Africa, microfinance institutions withdrew from poorer and more remote areas and

increased the average loan size in an effort to increase efficiency and returns. Lower interest rate ceilings in Japan caused the supply of credit to appear to decline, the approval rate for loans to drop, and the amount of illegal lending to increase. Banks and microfinance organizations in Armenia imposed fees and commissions, skirting the cap and lessening consumer transparency. Interest-rate limitations lowered welfare and credit availability in Poland. Interest rate caps reduced the variety of products available to low-income households in France and Germany. Revolving credit has been used by lenders in France to reach lower-income households, while credit is often denied to many low-income and high-risk borrowers in Germany (Soedarmono *et al*., 2013).

Low interest rates consistently reduce bank profitability by eroding interest rate margins (Borio et al., 2015). Since bank profits largely determine bank capital, lower profit margins put pressure on the bank's capital position and subsequently its solvency. It is generally believed that over time, falling interest rates have a negative impact on bank profitability by squeezing both the net interest margin and profit margins. In general, a drop in interest rates leads to a drop in bank profits, which in turn has an immediate or long-term impact on the positions of total supply and total demand in the economy. These changes also have an impact on economic agents' expectations and plans for the future, as well as how they perceive welfare, income redistribution, and the future of the economy (Admati & Hellwig, 2013). The relationship between interest rates and net interest margin can be explained by what happens when central banks lower interest rates, forcing commercial banks to lower their market rates even though they do not want to lower deposit rates by the same percentage, increasing the spread. This increase is a result of the banks' concern that if their rate is perceived to be too low in comparison to other sources of investment that

are thought to carry the same level of risk, depositors will choose to place their money elsewhere. If this were to happen, banks would lose their primary source of what was regarded as inexpensive capital, which would have been used to provide all of the loans, and as a result, they would lack the necessary resources to profit from their primary source of revenue (Morris & Regehr, 2014).

Furthermore, the low interest rate environment restricts bank lending and credit supply. Banks tighten their lending criteria when short-term interest rates are low, approving new loans with higher credit risk and lowering the associated loan spreads. This is due to the fact that banks view capital as being scarce and would naturally allocate it to pursuits that are, on the whole, more profitable. Low interest rates would hurt the lending industry by eroding the net interest margin, but they might also increase the profitability of more investment banking-style business lines like underwriting securities issuance or trading or mergers and acquisitions. Additionally, lending could be reduced if banks prioritize market share over profits and are under pressure to make a certain minimum profit, as might be the case if they must satisfy their shareholders (Baumol, 1971). In those circumstances, a drop in profits would prompt banks to reduce volume in order to adhere to the minimum regulatory requirements (Bech and Malkhozov, 2016).

The Kenyan banks saw a response strategy to the low interest rate environment that resulted in low interest margins and weak profitability by adopting new business models based on new banking activities. One such tactic was to rely more on non-interest income sources, such as service fees, brokerage commissions, and portfolio management income, to make up for lost interest income. The financial institutions' other sources of income come from sources other than their primary source of income,

which is lending out money. This component of commercial banks' earnings was unaffected by the capping law, making it the only way for those institutions to avoid anticipated drops in interest income and rises in interest expenses. Notably, the diversification of bank revenue sources has also generated a large number of empirical research questions regarding the impact of non-traditional bank activity on bank profitability and risk (De Young et al., 2001).

The correlation between low interest rates and bank risk-taking demonstrates how changes in interest rates impact how financial institutions perceive risk or their level of risk tolerance. The way banks measure risk, their impact on valuations, incomes, and cash flows, and an increase in the pursuit of margins are all factors that contribute to the risk-taking channel's operation. In order to allocate the limited lending resources at banks' disposal, it is critical to analyze how banks measure risk in an environment of low interest rates. Small changes in interest rate stance have an amplified effect on the repricing of risk and liquidity conditions after an unusually long period of low interest rates during which leveraged positions may have built up. The commitment to produce specific levels of nominal rates of return, which cannot be ensured in a low interest rate environment, is related to the search for margins (Adrian et al., 2010).

Thus, the global financial crisis has sparked a heated discussion about the potential negative effects of low interest rates on the banking system, particularly when they persist for an extended period of time. Important policy implications result from understanding the potential negative impact of these measures on bank profitability. Low profitability has an impact on banks' ability to raise money internally through retained earnings, which may limit their capacity to lend enough money to the

economy. Thus, bank profitability plays a role in bank stability and financial sustainability (Admati & Hellwig, 2013).

It would appear that Kenya's low interest rate environment has not lived up to expectations. Although it was anticipated that the demand for credit would rise along with the growth in bank profitability, the actual growth in profitability fell due to stricter credit standards. This is due to banks' altered strategies, which included becoming more risk-averse, diversifying their product lines, and examining their level of efficiency. Thus, the Kenyan case offers an intriguing case study with lessons for many developing nations (CBK, 2018).

2.4 Theoretical Framework

The Balance Scorecard (BSC), which has a strong connection to bank performance, served as the study's theoretical cornerstone. Additionally, Porter's generic strategies and price theory, which supported the basis of bank strategies and the environment for interest caps, respectively, were heavily cited in the study.

2.4.1 Balance Scorecard model

A company's performance, which is directly influenced by the creation and implementation of sound strategies, determines its long-term success. Companies are aware that having the appropriate strategies and a way to track performance are essential for their survival in the cutthroat business environment of today. Therefore, businesses strive to create the best performance management strategies in order to comprehend how their operations work and how they can improve. Systematic and occasionally ad hoc performance measurement is done across the entire company. The challenge that many businesses have encountered is the creation and use of the appropriate measurements that will drive the strategy to increase performance.

Traditional accounting metrics, which primarily concentrate on financial matters, have come under fire and been branded as irrelevant and outdated (Kaplan and Norton 2004). Because of this, the emphasis on non-financial measures of performance is currently gaining ground and more support from the business community. The balanced scorecard is a performance measurement tool that has gained popularity in literature and practice.

A Balanced Scorecard (BSC) is a management tool that links objectives, initiatives, and measures to an organization's overall strategy in order to implement and manage strategy at all levels of an enterprise. This performance measurement technique enables organizations to clarify their vision and strategy and put them into action by having goals designed in accordance with perspectives, criteria, and strategic actions categorized according to a specific structure. The term "balanced scorecard" refers to the idea of using both conventional financial measures and strategic metrics to obtain a more "balanced" picture of performance. The balanced scorecard idea has developed beyond the straightforward application of perspectives to become a comprehensive system for managing strategy. The ability to "connect the dots" between the various elements of strategic planning and management is one of the main advantages of using a disciplined framework. This means that there will be a clear connection between the projects and programs that people are working on, the KPIs being used to measure success, the strategic objectives the organization is trying to achieve, and the mission, vision, and strategy of the organization (Oberer & Erkollar, 2018).

By converting an organization's visions and strategies into operational objectives and performance measures for the discernable perspectives, the BSC was first introduced by Kaplan and Norton (1992) as a measure to evaluate firm performance from both

financial and non-financial perspectives. Traditional financial metrics by themselves cannot be used to assess organizational performance, according to Kaplan & Norton (2004). The value of intangible and intellectual assets, which are becoming more significant in today's knowledge-based economy, is not taken into account by such conventional measurements. The Balanced Scorecard aims to give managers richer and more pertinent information about the activities they are managing than is provided by financial measures alone by combining financial measures and non-financial measures in a single report. Kaplan and Norton suggested that the number of measures on a Balanced Scorecard should also be limited and grouped into four groups to improve clarity and utility. The original definition of the balanced scorecard was vague beyond this. However, it was immediately apparent that choosing the right measures for filtering and clustering would be a crucial task. Kaplan and Norton suggested that the selection of measures should concentrate on data pertinent to the execution of strategic plans and that straightforward attitude questions be used to assist in determining the proper allocation of measures to perspectives. The financial, customer, internal processes, and learning and growth perspectives are the four main categories or perspectives for strategy implementation that make up the balanced scorecards core (Kaplan and Norton, 1992).

Initiatives pertaining to customer relationships and satisfaction are connected to the customer perspective. Time, quality, service, and cost are the four main concerns for customers. If a company wants to retain its customers and achieve customer satisfaction, it must deliver on time, provide cutting-edge goods and services, and use cutting-edge technology to do so. If customers are not satisfied, they will look for goods and services elsewhere. The percentage of market share, rejection, the

percentage of on-time deliveries, and customer retention are some measures of customer perspective (Kalender & Vayvay, 2016).

The viewpoint on internal business processes is connected to efforts to achieve excellence in systems that are meant to increase customer satisfaction. Measures like innovation rates, service measures, lead times, quality measures, and cost reductions help businesses excel at giving their customers the value they expect. The internal business perspective's goal is to identify the crucial business processes that produce and deliver the firm's products and services to customers while developing safeguards to make sure these processes are effective (Haleem & Muraleetharan, 2016).

Employee development programs and corporate cultural attitudes pertaining to both individual and corporate self-improvement are included in the learning and growth perspective. In order to achieve the organization's goals, factors like employee effectiveness, degree of firm culture alignment, teamwork, and congruence are important to consider. This viewpoint has a strong connection to the organization's sustainability issue, and it is becoming more and more important for staff members to be engaged in ongoing education. To help managers' focus staff training on the internal skills and capabilities needed to support value creation, metrics like employee motivation, empowerment, employee retention, and turnover must be put in place. (Benková et al, 2020).

The objective of the financial perspective is to determine whether the company's strategies are improving its bottom line. This viewpoint emphasizes productivity and revenue growth as the two main strategies. Measures like profitability, sales growth, and cash flow generation are crucial to a company's success and cannot be ignored. As a result, the BSC keeps the financial perspective because financial information is

useful in determining the easily quantifiable economic effects of prior actions. Net operating income, return on capital employed (ROCE), revenue growth, return on asset (ROA), cash flow, etc. are some examples of measures that are included. In order to meet the goals of stakeholders, the other three perspectives must first be considered (Panicker & Seshadri, 2013).

The vision and strategy of a company serve as the foundation of the balanced scorecard. The mission and strategy of a business unit should be translated into specific goals and metrics by the BSC, who takes the vision and strategy as givens. To complete the following management processes, the BSC's measurement focus is used: to clarify and translate vision and strategy; to communicate and link strategic objectives and measures; to plan, set goals and align strategic initiatives; and to improve strategic feedback and learning. The measures serve as a conduit between the strategy and practical implementation. The selection of objectives and metrics to track the execution of the strategy and vision is the central issue (Bikke, 2010).

The nine-step process suggested by Kaplan and Norton includes performing an overall organizational assessment, identifying strategic themes, defining perspectives and strategic objectives, developing a strategy map, directing performance metrics, honing and prioritizing strategic initiatives, automating and communicating, implementing the balanced scorecard, and finally gathering data, evaluation and revision of the scorecard. An evaluation of the current internal and external environments is finished at the Assessment step. The organization develops or re-validates high-level strategic elements (such as mission, vision, values, market assessments, enablers & challenges, primary and secondary customer / stakeholder needs analysis, and others) as part of this step, which is necessary for context when

formulating strategies. Creating or clarifying your customer value proposition, using a Strategy Profile to visualize your strategy, and breaking down the high-level strategic direction into three to four Strategic Themes (or goals) are all part of the strategy development process. Strategic themes are those areas of focus where the organization must excel in order to fulfill its mission and realize its vision, taking into account the enablers, obstacles, and customer value proposition it must meet (Roland *et al*., (2014).

The foundation of strategy is created in the step called Strategic Objectives. The foundation of an effective strategic planning and management system and the key to putting strategy into practice are strategic objectives. The success of a strategy depends on the quality of the objectives, which are outcomes that are improved continuously. Strategic theme-level objectives are created first, and then they are combined to create organizational-level objectives. Cause-and-effect connections are built between the Strategic Objectives at the Strategy Mapping stage, resulting in a "value chain" of how the organization's goods and services satisfy customers and stakeholders. To ensure a comprehensive strategy to achieve each strategic goal, strategy maps are created for each theme. These are then combined into a final organizational strategy map. A strategy map is a diagram that depicts the causal connections between goals from all four perspectives, outlining how the organization will get the desired results (Aranda & Arellano, 2010).

The Performance Measures (KPIs) are essential for monitoring an organization's strategy as it develops. Operational metrics concentrate on how resources, processes, and output are used. These metrics "drive" the desired business outcomes, some of which are more intermediate than others that are more final. Our method uncovers

these connections, enabling you to choose the most significant outcome metrics to assess whether your actions are producing the strategic outcomes you are seeking. Each of the goals on the strategy map has its own set of performance metrics. This step is focused on assisting you in creating the vital leading and lagging measures required to oversee strategy execution. The projects that are essential to the strategy's success are developed, given top priority, and put into action in the Strategic Initiatives step. Initiatives aid in bridging performance gaps so that targets are met. Instead of making a long list of potential actions and projects, it is crucial to concentrate the organization on carrying out the most important strategic projects. Without this focused discipline, businesses find it difficult to carry out their strategy (Aude *et al*., 2014).

The organization-level scorecard system is prepared for employee rollout once the strategic initiative step is finished. The purpose of this step in the process is to win over more internal supporters and form a team of workers who will begin to think more strategically and use the system to better inform decisions. A crucial deliverable, the Balanced Scorecard graphic unifies all the strategic components of strategy formulation and planning into a single, easily understood graphic that serves as the focal point of the process of explaining the organization's strategy to all employees. It is a one-page document that summarizes the organization's strategy in a clear, user-friendly manner to tell the value creation story. Data are converted into knowledge and understanding that is supported by evidence during the Performance Analysis step. Making better decisions with the aid of effective analysis will lead to improved strategic outcomes. The goal of this step is to measure and evaluate performance to determine what works and what doesn't, take corrective action, and transform the organization into a high-performance one (Hussein et al., 2011).

In the Alignment step, high-level enterprise strategy is cascaded to first business and support units, then to individual employees, transforming it from something only executives worry about to something everyone supports. Scorecards for business and support units, as well as individual scorecards for each employee or team, are produced during the alignment phase. Cascading conveys how organizational strategy is supported by departmental or unit strategy, and ultimately how individuals or groups of individuals contribute to the strategy through particular actions, projects, and tasks. Reviewing and revising is an opportunity provided by the evaluation. Leaders and managers assess how successfully the organization has achieved its goals during this phase, as well as how effectively the strategic management system has improved communications, alignment, and performance. It guarantees that the system of strategic planning and management is dynamic and incorporates constant improvement into daily operations and management (Roland *et al*., (2014).

The balanced scorecard has a wide range of advantages. The main advantage is that it aids organizations in turning strategy into practice. The balanced scorecard brings the company's overall strategy to life by defining and articulating performance metrics related to it. Additionally, it enables workers at all organizational levels to concentrate on crucial business drivers. The BSC also offers the managers a variety of viewpoints from which to select criteria. It adds work, customer, internal processes, and refining and optimization activities to the standard financial metrics. These standards are different from customary ones. Many businesses already have a sizable collection of operational and physical requirements for their activities. However, these standards are tailored to the particulars of these processes and are directed downward from the strategy to the operation. The BSC's criteria, on the other hand, are predetermined by the organization's strategic objectives and business-critical requirements. The BSC

expedites the process of defining strategy, mission, and vision by pressuring managers to choose a small number of crucial metrics from any angle (Terziev & Stoyanov, 2015).

The Balanced Scorecard also offers a potent framework for formulating and expressing strategy. A strategy map that incorporates the business model enables managers to consider the causal connections between the various strategic goals. The process of developing a strategy map makes sure that agreement is reached regarding a group of connected strategic goals. In order to create a complete picture of the strategy, performance outcomes as well as important enablers or drivers of future performance are identified (Ehrmann, 2000).

The balanced scorecard serves as a structured report that evaluates how well management of the business is performing. To assess the management team's contributions to the strategy and achievement of the goals set, key performance indicators (KPIs) can be used. Success is evaluated in relation to the predetermined objectives or goals to ascertain the rate of business expansion and how it compares to its rivals. The balanced scorecard can be used by other employees higher up in the organizational structure to demonstrate their value to the company's expansion or their eligibility for salary increases and job promotions. Focusing on a strategic issue important to the organization and using both financial and non-financial data to develop strategies are two of a balanced scorecard's key characteristics (Stoyanov, 2016).

The BSC also enables businesses to better match their organizational structure with the strategic goals. Organizations must make sure all business units and supporting roles are aiming for the same objectives in order to successfully execute a plan.

Achieving that and connecting strategy to operations will be facilitated by cascading the Balanced Scorecard into those units. Effectively used Balanced Scorecards also aid in coordinating organizational functions like budgeting, risk management and analytics with strategic objectives. This will contribute to the development of a truly strategy-focused organization (Muller, 2000).

The BSC has limitations in both concept and application, despite its widespread use and advantages. The data show that a larger proportion of companies implementing the BSC have either failed to meet their intended goals or have run into significant issues while doing so. The BSC concept lacks a clearly defined relationship with organizational performance, the objective and measure definitions exclude important stakeholders, the definition of key success factors required to identify KPIs is absent, and the four categories restrict the organization's perspective. In reality, the BSC concentrates resources to achieve its objectives, underutilizing organizational potential outside of the BSC's targets, hindering inter-organizational innovation, perceiving an organization to have hierarchical structures, clearly defined job responsibilities, and one-way linear cause-and-effect relationships, and encouraging closed innovation (Kraaijenbrink, 2015).

Overall, the Balanced Scorecard has emerged as a tried-and-true method for capturing, outlining, and converting intangible assets into tangible benefits for all parties involved in an organization. This method also enables organizations to successfully implement their differentiating strategies. The BSC offers a more thorough and in-depth analysis of organizational performance, setting up a system of indicators to support its integrated, holistic vision and get around the limitations of

purely financial indicator systems, clearly illustrating value creation processes and emphasizing its crucial role in performance management.

2.4.2 Porter’s Generic Theory

According to Porter (1980), generic strategy is a general approach to a company's positioning within an industry. It shows the pursuit of a profitable and long-lasting competitive position in opposition to the factors influencing industry competition. Identifying sources of competition and creating strategies that balance organizational capabilities with the constantly shifting business environment are necessary to determine a firm's relative position within its industry, which determines whether a firm's profitability is above or below the industry average (Thompson & Strickland, 2010).

The success or failure of businesses is primarily determined by competition. The appropriateness of a firm's performance-enhancing activities, such as innovations, a strong corporate culture, or effective implementation, is determined by competition. The pursuit of a favorable competitive position in an industry—the primary setting for competition—is referred to as competitive strategy. Establishing a profitable and long-lasting position against the factors affecting industry competition is the goal of competitive strategy. The selection of a competitive strategy is based on two key issues. The first is the potential for long-term profitability of various industries and the factors that influence it. The inherent profitability of an industry is one important factor in determining the profitability of a firm because not all industries provide equal opportunities for sustained profitability. The factors that determine a company's relative competitive position within a market are the second key question in competitive strategy. Regardless of what the average profitability of the industry may

be, some businesses are significantly more profitable than others in the majority of industries (Porter, 2000).

The choice of a competitive strategy is both difficult and exciting because a firm can influence both the competitive position and industry attractiveness. While some factors over which a firm has little control can affect an industry's attractiveness, competitive strategy has a significant amount of power to increase or decrease industry attractiveness. At the same time, a company's choice of strategy can obviously strengthen or weaken its position within an industry. Therefore, competitive strategy attempts to both respond to and change the environment in a way that is advantageous to a firm. Therefore, even though industry structure is unfavorable and the average profitability of the industry is thus low, a firm that can position itself well may earn high rates of return. Long-term superior performance is fundamentally based on sustained competitive advantage. Although a company may have a wide range of advantages and disadvantages over its rivals, there are only two fundamental types of competitive advantage that a company can have: low cost or differentiation. Any strength or weakness a company has is ultimately dependent on how it affects relative cost or differentiation. Differentiation and cost advantage are ultimately a result of industry structure. They result from a company's capacity to manage the five forces more successfully than its competitors. Fundamentally, competitive advantage arises from a company's ability to produce value for its customers that is greater than the cost of doing so. Value is determined by how much customers are willing to pay, and superior value results from offering lower prices than rivals for comparable benefits or from offering special advantages that more than make up for a higher price. Competitive advantage can be divided into two categories: cost leadership and differentiation (Pearce and Robinson, 2015).

In order to produce goods or services at the lowest cost compared to rivals, a comprehensive set of actions is taken as part of the cost leadership strategy. Under cost leadership, a company actively seeks out cost-cutting measures through restructuring, the use of technology, the innovation of processes, economies of scale, and the reengineering of activities to cut back on both time and expenses (Hitt *et al*., 2016). As a result, various sources of cost advantage exist and are influenced by how an industry is set up. The search for economies of scale, proprietary technology, preferential access to raw materials, and other elements may be among them. A company will perform above average in its industry if it can achieve and maintain "overall cost leadership," provided it can command prices that are at or close to the industry average. A cost leader's low-cost position translates into higher returns at comparable or lower costs than its competitors. For instance, banks pursued downsizing and restructuring strategies to reduce staff from 36,000 in 2015 to 31,000 by the end of 2018 in an effort to cut costs after Kenya implemented an interest cap in 2016. Further, banks adopted technology, reducing the number of branches from 1520 to 1505 by the end of 2019 (CBK, 2020).

A company that uses differentiation strategy aims to set itself apart from competitors by differentiating its goods and services from theirs. To make a product stand out, a company may use innovative distinctive product features, superior quality, improved performance, exceptional service, or new technology. Each industry has its own methods for differentiating itself, and these methods can include the product itself, the method of delivery used to sell it, the marketing strategy, and a wide range of other elements. If a company's price premium outweighs the additional expenses incurred by differentiation, it will perform better than average in its industry. Therefore, a differentiator must constantly look for ways to differentiate that result in a price

premium higher than the cost of differentiating. When businesses give the buyer exclusive or better significance in the direction of product quality, features, or follow-up support, Porter's differentiation strategy is skillfully implemented. As a result, businesses that use differentiation strategies can raise the price of their products or services based on attributes like features, distribution methods, service quality, or delivery channels. According to style, brand name, or image, the value may be valid or obvious. The differentiation strategy appeals to sophisticated or well-known customers who care about the distinctiveness or quality of the product and are prepared to pay a premium. If customers are devoted to a company's brand, it can also lessen competition with rivals. For instance, following Kenya's interest cap in 2016, banks bundled products like Asset Based Finance (ABF) with insurance products and charged a little bit more than usual. Additionally, as a way to improve their reputation, they introduced digital lending as a convenient method of lending away from collateral requirements and laborious, extensive paper work, such as KCB MPESA, M-shwari by NCBA, Equitel by Equity, and Timiza loan by ABSA (CBK, 2020).

The focus strategy focuses on a specific market segment and works to differentiate or gain a cost advantage within that market segment. The idea is that by concentrating solely on the group, the needs of the group can be better met. When a company uses a focus strategy, its customers are frequently very loyal, which deters other companies from engaging in direct competition. Focus strategy companies have lower volumes and consequently less negotiating power with their suppliers due to their narrow market focus. This strategy stands out from the others because it focuses on choosing a small area of competition within a given sector. The focuser chooses a segment or set of segments within the market and adjusts its strategy to cater to them exclusively.

The focuser attempts to gain a competitive advantage in its target segments despite the fact that it lacks a competitive advantage by tailoring its strategy for those segments. Businesses that are successful at focusing their efforts can adapt a wide range of product development strengths to a relatively small market segment that they are very familiar with. Two versions of the focus strategy exist. A firm seeks a cost advantage in its target segment when it is cost-focused, whereas it seeks differentiation in its target market when it is differentiation-focused. Both variations of the focus strategy are based on distinctions between the target segment of the focuser and other industry segments (Davidson, 2008). For instance, during Kenya's 2016 interest cap, banks prioritized consumer lending over lending to Medium and Small Enterprises (MSME) because pricing was unable to account for the risk associated with MSME financing (CBK, 2020).

A company that employs every generic strategy but is unable to succeed in any of them is said to be "stuck in the middle." It has no advantage over rivals. Under-average performance is typically the result of this strategic position. Because the cost leader, differentiators, or focusers will be better positioned to compete in any segment, a firm that is stuck in the middle will have an inferior position in the market. If a company that is stuck in the middle manages to find a lucrative product or customer, rivals with a long-term competitive advantage will swiftly take the spoils. Quite a few competitors are mired in the middle in the majority of industries. Only if the industry structure is extremely favorable or if a company is lucky enough to have rivals who are also in the middle will it be able to generate attractive profits. However, such a company will typically be much less profitable than competitors who implement one of the generic strategies. Because it reveals poorly thought-out strategies that have been supported by rapid growth, industry maturity tends to widen

the performance gaps between firms with a generic strategy and those that are stuck in the middle. Being caught in the middle frequently reflects a company's unwillingness to decide how to compete. Because different types of competitive advantage typically require inconsistent actions, it attempts to gain an advantage through all available channels but fails to do so (Kotler & Keller, 2016).

The idea that generic strategies can lead to better performance has generated a lot of interest and research within the field of strategic management. A boost in organizational performance is valued in a low-cost strategy. It includes the method used by the business to produce or distribute goods and services at a lower cost than its rivals. Following a low-cost strategy shouldn't be interpreted as offering a product or service that is subpar, but rather as having comparable qualities to rivals and a fair price. It is important to note that Porter has examined the connection between low-cost strategy and firm performance. He discovered that low-cost strategy is an effective means of realizing stable competitive advantage by lowering and controlling costs, which in turn improves organization performance (Cemel, 2015).

Additionally, the performance of an organization is significantly impacted by product differentiation. Products that stand out from the competition are more appealing to consumers. Additionally, they have a significant impact on an organization's performance when combined with innovation. Due to the features on the products, product differentiation increases customer satisfaction and brand loyalty. Additionally, it piques customers' curiosity and entices them to try the product. As a result, more people use goods and services that improve business performance. Organizations can gain a competitive edge on focus by locating a market niche. Competitive advantage is attained when the company decides to focus on a particular

customer segment, geographic market, or product line that has not yet reached saturation. Increased market size may not always result in higher profits, but it will eventually increase market share, which will ultimately improve firm profitability (Febrianti & Dora (2013).

Despite its significant contributions, many academics have criticized Porter's generic strategies. Porter's generic model is a highly generalized typology that, due to its rigidity and simplicity, may not be taken into account in the context of various market environments. This is one of the main limitations outlined by critics. For instance, some academics argued that the strategic framework differs for SMEs or the highly fragmented retail markets (Hambrick & Lei 1985; Borch & Brastad 2003; Alpkan *et al*. 2005). Porter's theory also ignores the possibility that the sources of organizational competitive advantage could change over time, necessitating a new development and interpretation of the theory in light of the emerging competitive landscape. Other criticisms of Porter's model come from different management schools and take a different strategic tack. The resource-based perspective contends that rather than emphasizing product-market positioning, strategic analysis should concentrate more on the key resources that enable the firms to achieve a particular competitive advantage (Kay, 1993). The limited value of competitive strategies in complex and dynamic market environments is emphasized by proponents of game theory, who also stress the significance of cooperative strategies in improving firm performance (Moore 1996, Brandenburger, 2002).

Despite its flaws, managers can still use Porter's generic model as a useful tool when trying to assess the competitive market environment and develop winning strategies. However, it's crucial to use these models while being aware of their limitations and

taking into account additional models or analytical frameworks that can supplement Porter's generalization of competitive forces and strategies. Overall, because of its strong connection to firm performance, Porter's generic strategy is appropriate for this study (Helms, 2006).

2.4.3 Price Theory

In order to explain economic activity in terms of the creation and transfer of value, which includes the trade of goods and services between various economic agents, price theory involves the analysis of price-taking behavior. It operates using a demand and supply model, which shows how the value of those variables is affected by external factors and how price and quantity traded are determined. Market price changes serve as a signal for how limited resource allocations should be made. A higher price encourages manufacturers to switch to producing that good, but it also encourages consumers to use a substitute product, and a lower price encourages consumers to purchase the affected good or service but makes it less profitable for businesses to do so. Therefore, a general purpose of price theory is to explain how prices are determined, behave, and have meaning (Hammond *et al.*, 2013).

Prices in a free market economy are established by the law of supply and demand, which controls the economy instead of government intervention. Businesses are motivated by self-interest to obtain the highest rents or sales of goods or services that produce the highest profits. The model emphasizes each person's freedom of choice, and employees strive to earn the highest possible wages and salaries. By means of the price mechanism, market mechanism, and competitive system, as goods' prices rise, the quantity offered typically rises, and consumers' willingness to purchase the good typically declines, though these changes are not always proportional. The widespread

economics presumption that prices are drawn to a stable equilibrium is thus supported by the free-market model. One typical example of a nation that uses the free market economic model is the United States (Bill, 2013).

Prices are not determined by a market mechanism in a command economy; instead, they are determined administratively through rules, commands, directives, and targets. Through monetary and fiscal policies, governments in this model control the economic development path. The government has its own objectives, such as maintaining social stability and high employment rates, as well as controlling inflation. In some industries, there is little competition due to monopolies' close ties to the government. Government is responsible for more than just maintaining the competitive environment and delivering public services; it also directs economic growth and regulates prices. For instance, command economies, in which the government dominates economic development and controls prices, exist in some Asian nations like Japan and Korea (Cavallo, 2016).

Therefore, a company's pricing strategy should include the policy it uses to decide how much to charge for its goods and services. Cost-based pricing, competition-based pricing, and value-based pricing are the three components of effective strategic pricing. The most common method of determining prices is cost-based pricing because it conveys a sense of prudent financial management. It entails raising prices to cover profit margins, such as by raising prices for goods or services by a set percentage. The price is then determined after calculating the unit and total costs, verifying the company's profit goals, and calculating the sales revenue. Due to the direct relationship between firm costs and profitability, accurate estimation of firm costs is necessary for any company to survive (Kotler & Armstrong, 2013).

The underlying tenet of value-based pricing is that there is no correlation between actual firm costs and customer value. Understanding value enables businesses to charge prices that are higher than their costs while still maintaining customer satisfaction. Managers concentrate on comprehending and raising customer value rather than on costs. Costs are calculated because they serve as the lower limit of prices; however, only an understanding of customer value can offer guidance on the upper limit of prices, and a strong appreciation of and quantification of customer value is essential to effective pricing (Hinterhuber, 2016).

Prices are chosen in accordance with those of competitors under a pricing strategy based on competition. To determine the appropriate pricing levels to be used by the firm, it uses important information like the price ranges of competitors and behavior expectations seen in the market. The main benefit of this strategy is that it takes into account the competitors' actual pricing situation. Its primary drawback is that demand-related factors are not taken into account. Additionally, a fierce focus on competition among rivals can raise the danger of a market price war breaking out (Giocoli, 2013).

Sometimes, the decision-making process regarding the pricing strategy is guided by governmental regulations. Governments can use price control mechanisms to maintain prices at predetermined levels and/or set the permitted rates of price increase in order to achieve certain national objectives. The basic tenet of price controls is that it is acceptable to monitor certain prices and eventually take action that improves the situation if the free movement of certain prices results in negative consequences or if it makes it impossible or very difficult for government to achieve some significant national goals, such as full employment without inflation or access to food for everyone. For instance, in the banking industry, interest rate caps are frequently

justified by the belief that banks' capacity to make excessive profits from their lending activities is what drives up interest rates. When oligopolistic structures and high entry barriers lead to little competition in the financial system and give incumbents the ability to set prices, the potential for high profits is especially great. Interest rate caps are frequently cited as a way to safeguard the public interest in such a situation by ensuring a fair and reasonable interest rate (Leslie, 2013).

Companies strategically use pricing to affect the entry and exit of competitors. Limit pricing and predatory pricing are the two primary types of strategic pricing. A monopolist may employ limit pricing as a pricing tactic to prevent entry. The level of supernormal profit would be extremely high if a monopolist set its profit maximizing price, which would draw new businesses to the market. In the short term, it results in less profit than is ideal, but over the long term, it may allow the company to maintain its monopoly with high profitability. It implies that businesses forgo immediate profits to prevent the entry of competing businesses and secure their future financial viability. The existing company can assert its seller power once the new entrant is no longer a threat and raise prices for an extended period well above average cost. The new participant may believe that if it is willing to participate as a game of strategy and suffer an initial loss, the existing company will decide it would be better to let prices go higher so that profits will increase once it has established its presence in the market and realizes its use of limit pricing did not work, even if that means the new entrant will be able to stay in the market. It results in less profit than is possible in the short term, but it may allow the company to maintain its monopoly position with high profitability over the long term (Sweeting *et al*., 2019).

Thus, Limit Pricing is a price strategy used to prevent new suppliers from entering the market by lowering the cost of the product, raising its output level, and establishing conditions that make it unprofitable or illogical for the new supplier to take advantage of the market's existing customer base. The fundamental concept behind limit pricing is that an established company may be able to influence how profitable it appears to be for other companies to enter its markets simply through its current pricing policy. As a result, the company may choose to lower its prices below its short-run maximizing levels in order to discourage entry. As a result, limit pricing has been a central theme in the literature on industrial organization for at least thirty years. In the last ten years, limit pricing has been the focus of several papers that use formal models of maximizing behavior. Most recently, analyses have focused on the decision-making dilemma of the established firm, presuming the limit-pricing tenet that a lower pre-entry price will discourage or limit entry (Susmita, 2017).

Predatory pricing refers to a pricing strategy used by businesses with the intent to harm or eliminate a rival. Generally speaking, the practice refers to offering certain important products for sale below their actual cost. Additionally, the predator needs to be reasonably certain that the competitor won't return to the market after he leaves it or that he won't be replaced by another player. The predation stage and the post-predation stage are the two stages that the traditional theory of predatory pricing envisions for the execution of the predation strategy. In the predation stage, the predator attempts to drive its prey off the market by pricing its product below some metric of economic cost, typically incremental cost. In the post-predation stage, the prey takes advantage of the lack of meaningful competition to raise the price of its product above levels that would otherwise be competitive, recovering the losses it suffered during the predation stage and going on to make monopoly profits.

Traditional predation is difficult and frequently irrational, according to the literature's consensus view, which has dominated for several decades. Recouping the losses incurred during the predation stage is essentially impossible because firms will reenter the market once the predator starts pricing at supra competitive levels. As a result, for the predation strategy to be effective, there must be some sort of entry barrier that prevents entry when the predator prices at levels that are above the level of competition (Dennis, 2006).

Due to marketing economies of scale, the entry barriers will be higher under a differentiated oligopoly strategy than they would be under a homogeneous oligopoly. It appears to accept that as output scale increases, advertising unit costs and possibly the cost of raw materials per unit of output are likely to decrease. As a result, as opposed to the homogeneous oligopoly case, the overall cost difference between the smaller and larger parties will be greater. Therefore, product differentiation will strengthen the scale barrier. His homogeneous oligopoly model provides a more rigorous analysis of differentiated oligopolies. It implies, however, that he is primarily worried about the effects of technological discontinuities on output and price, and that one of the main concerns is product differentiation (Chen et al., 2019).

Price theory therefore has significant managerial implications because it influences a firm's profitability and market competitiveness. Because the managers involved in this process must comprehend how their markets perceive prices, how to develop perceived value, what are the intrinsic and relevant costs to comply with, as well as take into account the pricing objectives and their competitive positions in the market, the process of creating and defining prices can occasionally be difficult and complex. Business managers are expected to use their expertise and judgment to make the best

decisions possible. It is crucial to understand the theories and concepts relating to pricing because every economic activity in the market is measured in terms of price. Pricing discusses the justification and underlying presumptions of pricing actions. It discusses how business managers come to their final pricing decisions and analyzes particular market needs (Kotler & Armstrong, 2013).

2.5 Empirical Literature Review

The study reviewed existing literature on product diversification, bank efficiency and risk management strategies in relation to firm financial performance as discussed below.

2.5.1 Product Diversification and Bank Financial Performance

A company can diversify by moving beyond its core market for one product and into others (Chandler, 1962). It is the expansion of a company or business unit into new markets through internal business development or acquisition, which requires adjustments to the organization's organizational structure, management systems, and other operational procedures. Based on the sales of various product categories listed in their financial data, it entails expanding its product to unrelated product categories (Su & Tsang, 2015).

Product diversification entails the production or marketing of new products in addition to already-existing ones. It is also described as a company's expansion beyond its current product and market while maintaining the broad parameters of the industry value chain. Corporate diversification, which refers to a company's expansion into related and unrelated investments, is regarded as a strategy for businesses to expand their operations in order to maximize their profits. Product diversification can be divided into related and unrelated categories (Oyedijo, 2012).

A strategy called related product diversification involves companies whose value chains have strategic or competitively advantageous cross-business value chain match-ups. When the value chain activities of various businesses are sufficiently similar to offer opportunities for the firms that are diversifying, there would be a strategic fit. Building shareholder value by capturing cross-business strategic is related product diversification. Utilizing connections to achieve a synergistic performance outcome and thereby increase shareholder value is the appeal of related diversification (Shen et al, 2014).

A second business that gains access to the company's core competencies is another opportunity for related diversification. To take advantage of synergies like transferring valuable expertise, technological know-how, or other capabilities from one business to another, most companies favor related diversification. Synergies can also be created by combining related activities of different businesses to reduce costs, by making use of a well-known brand name consistently, by working across industries to develop resources that are competitively valuable, by using a shared sales force to contact customers, by marketing related products jointly, and by collaborating on delivery (Pearce & Robinson, 2010).

Unrelated diversification is the pursuit of opportunities outside of an organization's current product and market base. An important part of a company's strategic management is its unrelated diversification strategy, and managers and academics are very interested in the connection between a firm's diversification strategy and its financial performance. Businesses are said to be unrelated if there are no beneficial cross-business relationships that are competitively competitive between them because of how different their value chains are (Kotler & Armstrong, 2013).

More than one business unit that conducts its operations in various industries is housed under the corporate roof of an unrelated diversified firm. There is no real possibility for the transfer of expertise, technology, or other resources from one business to another as a result of the differences in value chains. Many businesses choose to diversify into markets or ventures with promising profit prospects. The majority of the time, businesses seeking unrelated diversification always opts to buy an existing business rather than creating a subsidiary (Thompson et al, 2010).

Companies may diversify for a variety of reasons, including to use excess productive capacity, reinvest earnings, distribute risk, make up for technological obsolescence, hire top management, and so on (Ansoff, 2018). These factors may influence the vertical, horizontal, and lateral diversifications that companies engage in. While horizontal diversification entails the introduction of new products that capitalize on firms' know-how and experience, vertical diversification entails forging into the production of components, parts, and materials. Lateral diversification includes stepping outside the boundaries of the sector that the company belongs to (Ansoff, 2018). Additionally, a company can diversify its product line in two ways: through related diversification, which involves products from the same industry group, or through unrelated diversification, which includes products from various industry groups. The resource-based view (RBV), which proposes that the specific type of diversification strategy a firm can adopt and that its performance is dependent on its pool of resources and capabilities, has a significant impact on the relationship between product diversification and performance. RBV offers an internal viewpoint that highlights businesses' desire to maximize their available resources and capabilities by primarily diversifying into related industries (Wernerfelt, 2013).

The benefits of functional bank diversification are numerous, according to diversification proponents. According to Baele et al. (2007), diversification reduces operating costs by enabling economies of scale. Sharing inputs like labor, technology, and information across many business lines, in particular, produces significant cost savings and other synergistic benefits. The data gathered from the lending industry, for instance, can be effectively used to provide other financial products, like insurance and security underwriting. Additionally, information gained from investment banking can be used to enhance credit risk management and loan origination. Saunders (2014) additionally asserts that functional diversification may improve corporate governance by way of the takeover market. More specifically, a manager will be motivated to run a business effectively if cross-activity mergers are permitted in order to avoid being merged with or acquired by a high-performing unit. Francis et al. (2018) contend that diversification is advantageous from a risk perspective because a bank's various business lines may have low correlations.

The argument put forth by those who oppose bank income diversification is that diversification is expensive. First, according to Baele et al. (2007), diversification may make agency issues between internal and external parties, between business divisions, and between the business units and their clients worse. For instance, a bank manager might pursue diversification to advance personal interests even if doing so would lower the bank's franchise value. Second, diversification creates more business lines, which raises the costs of regulation associated with additional supervisions (Baele et al., 2007). Thirdly, DeYoung and Roland & DeYoung (2001) contend that because regulators do not require banks to hold capital against fee-intensive products, banks may be encouraged to use excessive financial leverage, which is likely to increase earnings volatility and raise the possibility of a systemic crisis.

Therefore, it is hypothetically debatable whether the advantages of functional diversification outweigh the disadvantages. It's interesting to note that empirical research is also ambiguous. For instance, a number of studies back the idea that diversification lowers risk (DeYoung & Torna, 2013: Meslier et al., 2014; Köhler, 2015; Nisar et al., 2018; Meles et al., 2016), while a number of other studies come to the opposite conclusion and claim that by diversifying, banks end up losing out in the long run (Stiroh, 2004; Stiroh & Rumble, 2006).

One of the most important strategies banks use is diversification. Banks are typically thought of as financial organizations that accept deposits and issue loans. But as banks' sources of income are expanded, non-interest income which primarily consists of commission, fee, and trading income is becoming more significant. The most striking change in Kenya during the low interest rate environment was a move away from the traditional "core" banking model, which prioritized interest income generation through deposit taking and lending, and toward a model that put an increasing emphasis on fee-generating activities like service fees, mobile banking commission, ATM transaction fees, bancassurance, and brokerage activities (Engle *et al*., 2014).

Numerous academics have empirically studied the link between product diversification and performance, with varying degrees of success. Early studies provided compelling evidence that businesses that diversified into related industries were more successful than those that did not (Rumelt, 1974, Montgomery, 1982). Recent research by Yigit & Tur (2012) using the Rumelt classification suggests that diversification improves firm performance because of scale and scope economies, market power, risk reduction, and learning curve effects. The researchers contend that

because a business entity can take advantage of synergies that result from preexisting relationships to achieve cost or differentiation advantages, related diversification leads to higher profits than unrelated diversification. Furthermore, Rishi et al. (2014) used a sample of 44 Indian businesses to demonstrate that diversified companies are more profitable than undiversified ones and have higher tangible assets.

Ade (2012) investigated the effectiveness of a sample of Nigerian businesses' product diversification strategies, including specialization, unrelated, related, and mixed product diversification. The results of using the panel regression analytical technique revealed that firms using related diversification strategies performed significantly better than those using unrelated diversification strategies in terms of growth and performance. The impact of portfolio diversification on the financial performance of Kenyan banks was studied by Makokha et al (2016). The study found that portfolio diversification had a significant and favorable impact on the financial performance of Kenyan commercial banks and that diversifying one's investment portfolio had led to increases in performance and profits in previous years.

A study by Berg (2016) attempted to explain the factors that influenced the costs and benefits of diversified firms in comparison to non-diversified firms. The study focused on Indian publicly listed firms between 2006 and 2012 and used accounting-based and market-based measures of firm performance. The results showed that diversified firms performed better on average than non-diversified firms. A study by Mashiri & Sebele (2014) on listed conglomerates in the food and beverage sector operating in the Zimbabwe Securities Exchange revealed a positive and linear relationship between diversification and firm performance as measured by turnover, while a study by Oladele (2012) on the product diversification and performance of

manufacturing firms in Nigeria indicated that diversifying firms had higher level of return on assets..

On the other hand, between 2007 and 2012, Phung Mishra (2016) conducted research on the effect of diversification on the performance of listed companies in Vietnam. According to their research, diversification had a detrimental impact on the firm's performance. The results also showed that the absence of an effective corporate governance system may encourage businesses to pursue diversification strategies that would harm their performance. According to Chen & Ho's (2000) study, diversification had a negative effect on a company's value in Singapore, indicating that there was a diversification discount.

The results of a study conducted by Doaei, Anuar, and Ismail (2015) on 102 manufacturing companies listed in Busra Malaysia showed a negative correlation between product diversification and efficiency as well as a negative correlation between international diversification and efficiency. According to the study, managers pursued their own interests based on the agency theory, and from this perspective, product diversification had a negative impact on firm performance.

Iqbal et al. (2012) looked into how diversification affected Pakistani businesses' performance, and the findings revealed that there is no correlation between the two. Furthermore, between 1995 and 2005, Kahloul & Hallara (2010) examined the connection between diversification and performance in 69 French large firms. As a result, they discovered that there is no connection between performance and diversification.

Product diversification has been a successful firm growth strategy in spite of the mixed findings. It is clear that the majority of the literature currently in print is based

on developed nations, whereas the topic of Kenyan banks has not yet generated much discussion. The topic of product diversification should be discussed in the Kenyan context given the growing interest in it brought on by the low interest rate environment in international financial markets.

2.5.2 Bank efficiency and Bank Financial Performance

Efficiency, according to Drucker (1963), is the capacity of an organization to produce its intended results with the least amount of input. He defines "doing things right" as efficiency, which is the highest possible ratio between the output and the input of the product development process. This ratio demonstrates the best use of the resources that are at hand and would enable achieving the maximum. The fundamental objective of efficiency is to deliver high-quality goods and services to customers in the most affordable and timely manner possible without sacrificing quality, allowing businesses to grow their revenue and performance. This is due to the fact that increasing efficiency has a direct impact on how well businesses perform and is frequently accomplished by streamlining businesses' core processes in order to effectively and economically respond to constantly changing market forces.

A broader definition of efficiency takes into account scale and scope economies: an efficient firm is one that grows to the ideal size for its sector (scale) and produces the ideal range of goods given the costs of its inputs (scope). The ability of larger businesses to spread out fixed costs, like advertising costs or the cost of technology, over a higher volume of output is a common source of scale economies. If customers favor dealing with large banks, for instance due to the convenience of one-stop shopping or due to the significance of the branch network, revenue scale economies may develop. Sharing data across product lines, such as understanding consumer

behavior, may lead to scope economies. Diseconomies may become apparent once a firm reaches a certain size or scope, when managers start to work outside of their areas of expertise, or when the internal hierarchical structure of the company lessens the power of the owners over managers. The ideal product mix and minimum efficient size depend on technology, regulatory requirements, and consumer preferences.

Businesses create and modify their business models to increase efficiency and successfully compete in a market. When the operating environment changes, banks typically reevaluate and/or modify their business strategies and models. For a bank to turn a healthy and sustainable profit, such evaluations and modifications of the business model are necessary. Bank business models (BBM) are also of interest to policymakers because variations in banks' business models may be systematically linked to variations in their performances and because banks play a unique social and economic role (Farnè & Vouldis, 2017). Empirically, banks use diversification for the first component by defining a bank's strategic choice possibility set with respect to income sources. The second way banks increase efficiency is by redesigning their cost structures to reduce waste and redundancy while maximizing the use of their resources, which include people, technology, and business processes. Efficiency-related internal cost reductions help businesses perform better by enabling them to compete more successfully in highly competitive markets. Since improving efficiency will result in better financial performance, the pursuit of efficiency is a fundamental concern for all businesses, including financial institutions. This assumption is supported by much of the efficiency research and discussion (Gill *et al*., 2014).

Investments in technology are essential for maximizing efficiency. Three areas of efficiency are impacted by new technologies: customer experience, employee

productivity, and process enhancements. Customers of banks have shown a growing desire for self-service options. Self-service technology not only makes businesses more efficient, but customers frequently prefer the option. Therefore, cutting down on human involvement and supporting quicker and more accurate processes are two ways that advanced IT systems contribute to improving efficiency. Reduced expensive human involvement is made possible by a high level of automation. IT allows information to be shared across a large organization and aids in maintaining control over a multinational corporation with numerous divisions and operations around the world (Rahim & Zainuddin, 2016).

The most successful companies have a flat hierarchy, shared support functions, and decentralization. The bank's organizational setup determines how cost-effective it is. Any organization's organizational structure, which shows the connections between and within its various production factors, is its most important component. These connections show how resources are organized and are set up to complete particular tasks. Organizational theory places a lot of emphasis on exploring organizational structures for the simple reason that every organization depends on them. By centralizing support functions like the information technology department, the human resources department, and other areas of expertise, significant economies of scale can be attained. By using a decentralized structure, successful banks make sure that business decisions are made as close to the market as possible. Therefore, organizing is a managerial task with a strategic focus that, if done well, will increase productivity and help the company achieve its goals. Within the organization, the best organizational structure for carrying out business strategy is decided. The characteristics of organizational structures have been identified as key determinants of business productivity and innovation (Drucker, 1963).

Developing a culture of cost awareness among the workforce is necessary for improving cost-efficiency. Banks with a corporate culture that continuously seeks to increase cost-efficiency, is deeply ingrained in overall strategy, is promoted throughout the organization, and places a high priority on it. A culture is a learned set of assumptions, standards, and behaviors that are transmitted to newcomers when it is deemed successful enough to do so. Fundamentally, culture matters because it has a significant impact on behavior. Understanding culture can therefore be helpful for understanding why people behave in particular ways and for using culture to further organizational goals and strategic goals. Culture is crucial because it has a big impact on cost management, which is a common factor and the main road map for achieving organizational efficiency. In a competitive market, the interaction of supply and demand determines the price of a good or service. To put it another way, a company must sell its goods or services at the market price in order to remain competitive when the market is influenced by competition. The contribution and consideration known as price includes cost and profit. In a competitive market environment, a company can only make a normal profit; there are few opportunities to make extraordinary profits. Cost consciousness plays a role in promoting organizational effectiveness, growth, and development because it allows a business to control the costs related to the production and delivery of the good or service. Cost management at different stages of the production and distribution cycle is the sustainable and surviving strategy for a business at the micro level and the economy as a whole at the macro level that faces the heat of fierce competition in the business environment of a market driven economy. Cost consciousness and cost culture are therefore essential to enhancing organizational efficiency through cost management (Schuldt & Giancarlo, 2020).

The senior management team of a company is another crucial factor that has a big impact on how effective it is. This is true because senior management's actions are essential for high performance and have an impact on a company's strategic direction. The ability of strategic decision-makers to recognize and seize any new opportunity presented by the external environment is a prerequisite for high profitability and sustainability. Therefore, in order to assess the current resource situation and search for opportunities in the external environment that are appearing as a result of changes in the external environmental demographics, top management needs entrepreneurial skills. A business with enough resources and capabilities can also outperform competitors in a market that is competitive. Businesses can put strategies into place that improve organizational performance overall if they have enough resources. Consequently, quality management is a management philosophy that is founded on concepts and practices that can boost effectiveness. With the aid of technologies, the principles offer general guidelines that are put into practice. It stands out due to the integration of the technologies, practices, and principles. Enterprise managers should understand and apply quality philosophy to achieve performance improvement goals and efficiency through the implementation of quality management practices in order to meet the challenges of the new global competition (Bouranta *et al*., 2017).

The connection between efficiency and a firm's performance has been the subject of numerous studies. Different conclusions, though, have been drawn from these studies. Dietrich (2010) looked at 11,728 UK manufacturing companies over the period of 1993 to 2007 to examine the relationship between productivity and profitability, and found a positive correlation. Mistry (2012) conducted a study in India to examine the variables that affect the auto industry's profitability. The study's conclusions showed that profitability and efficiency, as determined by the inventory turnover ratio, were

significantly positively correlated. Efficiency as measured by frontier analyses, according to a study by Baik et al. (2013) to determine how efficiency affects US firm profitability, has a positive impact. Additionally, Gill et al. (2014) examined how performance of listed companies on the Bombay Stock Exchange from 2008 to 2012 was impacted by efficiency. The study discovered a link between firm performance and efficiency as determined by the assets turnover ratio. Jakada & Aliyu (2015) noted that efficiency in Nigeria significantly increased firm performance (ROA) in a manner similar to this.

The effectiveness of Pakistan's large-scale manufacturing sector was studied by Ding et al. (2017). With the help of data envelopment analysis and stochastic frontier analysis, the efficiency level of 101 Pakistani industries was examined. The stochastic frontier analysis' findings showed that the large manufacturing firms' level of efficiency had slightly increased. The results of the data envelopment analysis further confirmed that as a result of economic reforms in Pakistan's manufacturing sector, the efficiency level of the sector has significantly increased and is positively affecting firm performance.

In a different study, Kumbirai & Webb (2010) examined the profitability and efficiency of five significant South African banks using financial ratios and found that the nation's financial system had enough capitalization and profitability to withstand the effects of the 2008 financial crisis. Chauveau and Couppey (2000) produced comparable results for the five major South African banks using data envelopment analysis methods. Their study focused on the technical effectiveness of the selected banks, and the results show that there aren't any significant problems with productive inefficiency.

Maredza and Ikhide (2013), on the other hand, used a two-stage methodology framework to evaluate the changes in productivity and efficiency at the four largest commercial banks in the nation. Their preliminary findings suggested a detectable but mild deviation in total factor productivity and efficiency measurements during the 2008 financial crisis. The financial crisis had a significant impact on the decline of bank efficiency, which was 16.96% lower than it was before the crisis, according to the findings of their second stage analysis, which used the censored Tobit model. Santosuosso (2014) also looked at the efficiency of 215 non-financial companies listed on the Italian Stock Exchange for the years 2004 to 2013. A weak correlation was found between effectiveness and the firms' profitability, as indicated by ROA and ROE, according to the study's correlational findings. Additionally, a study on the services industry in Jordan found that asset turnover, fixed asset turnover, and working capital turnover do not significantly affect a company's profitability (Warrad & Al Omari, 2015).

As a result, efficiency is widely recognized as having a favorable effect on business performance. Only profitable and effective banks can ensure reasonable returns to their stakeholders in a vibrant and competitive banking system like Kenya. Evidently, in a low-interest rate environment, Kenyan banks increased their use of alternative channels by leveraging technology like mobile money and digital banking to increase efficiency and subsequently lower costs associated with traditional brick and mortar approach. This led to the closure of branches and a reduction in staff in an effort to maintain profit margins. It was critical to evaluate how bank efficiency measures affected bank performance in Kenya's low interest rate environment. Therefore, efficiency is an essential element of a sound banking system and a key factor in determining bank performance. It became a focal point in Kenya as a result of higher

funding costs, an increase in defaults, and fewer opportunities for top-line growth during the interest capping period. When combined with the potential for additional compliance obligations, banks faced a higher level of difficulty they had not seen in many years. Many banks were forced to increase their focus on cost-cutting in order to increase efficiency as a result (Munywoki, 2017).

2.5.3 Risk Management and Bank Financial Performance

A fundamental concern in today's dynamic environment is risk management. A paradigm shift in how risk management is viewed has recently taken place. The trend is to approach risk management holistically rather than from a silo-based perspective. This approach is known as enterprise risk management (ERM), which is the process of identifying and analyzing risk from an integrated, company-wide perspective. It is a methodical and structured approach to coordinating strategy, processes, people, technology, and knowledge with the aim of assessing and managing the risks the company faces while producing value (Wu *et al.*, 2014).

The rise in interest in risk management has been attributed to a number of issues facing the business world, including corporate fraud, scandals, and the failure of significant corporations like Enron, Worldcom, and Barings bank. Governments, legislative bodies, regulatory agencies, and other participants in the international economic community were prompted by this to look into and better understand the existing and new risks that face organizations. Effective risk management is anticipated to boost a company's revenue and profitability, which will inevitably have an impact on financial performance (Paape *et al.*, 2012).

Risks come in three flavors: avoidable, external, and strategic. Downside risks include avoidable and external risks. Internal risks that can be prevented by the company

should be efficiently eliminated, typically through the use of internal audit techniques that are based on rules. Since external risks like PESTEL (political, economic, social, technological, ecological, and legal) cannot be prevented, the business should take steps to lessen their effects, such as through lobbying, business continuity plans, or risk transfer through insurance. Contrary to avoidable and external risks, strategy risks are ones that the company voluntarily accepts in an effort to improve firm performance. Strategic risks are thus those that businesses decide to accept in order to boost their firm value, which causes two issues. First, it changes the relationship between strategic risk and how the company views taking the risk. In contrast to the company that carefully considers a potential problem, the firm that carelessly does something without giving it any thought faces a strategic risk from that problem. A company that takes a certain action to boost performance faces a strategic risk, as opposed to a company that acts in the same way under the same conditions but for a different reason. It seems undesirable to depend a strategic risk on firm motivation. In addition, many people would assume that the company takes on all risks voluntarily in the hopes that they will aid the company in achieving its objectives, making all risks strategic (Kaplan & Mikes, 2012).

A new approach to risk management called enterprise risk management (ERM) entails managing a variety of risks holistically. Recent years have seen a change in the way that organizations view and manage risks, which are a key concern for any business. Organizations now approach risk management from a holistic perspective known as enterprise risk management, as opposed to the traditional risk management method that is based on the silo approach. In order to identify potential events that could have an impact on the entity and manage risk to be within its risk appetite, enterprise risk management is a process that is implemented by the board of directors, management,

and other staff members of an entity. This process is applied in strategy setting and across the enterprise. In recent years, enterprise risk management as a discipline has attracted unprecedented interest and global attention. A number of difficulties in the business world, including global financial crises, corporate frauds and scandals, as well as the failure of significant corporate entities, have been blamed for the increase in interest in ERM. Governments, legislative bodies, regulatory agencies, and other participants in the global economic community have been prompted by this to examine new information and understanding of the risks that organizations face today and in the future (Paape *et al*., 2012).

According to the ERM approach's justification, a company's performance is maximized when top management establishes strategy and goals that strike the ideal balance between growth and return goals, associated risks, and resource allocation in support of those goals. By managing uncertainties that could affect the accomplishment of organizational goals, the ERM approach seeks to create, protect, and enhance shareholder value. Strategic ERM implementation implies that an entity can best achieve its strategic, operational, reporting, and compliance goals by understanding the full range of risks that it faces. The ultimate goal of an ERM framework would therefore be to facilitate the process of being described, automated, monitored, and improved as part of the cycle of continuous innovation and responsiveness to the business dynamics in today's business environment (Teoh, *et al*., 2017).

Business risks such as interest rate risks, legal risks, credit risks, technological risks, etc. are prevalent in the banking industry and can have a detrimental effect on an organization's performance. This is due to the fact that banks need higher returns or

risk premiums in order to assume greater levels of risk and make up for the risk that diversification cannot completely eliminate. Therefore, taking risks is a fundamental component of banking, and the rewards for taking calculated risks in business often come in the form of profits. In particular, credit risk is the most significant exposure to risk for banks because of its close relationship to bank profitability and economic growth. A wise investment choice for banks entails maximizing return on investment while minimizing credit risk. Each loan that is not repaid reduces the profitability of banks, which could lead to bank failure if the bank is unable to settle its debts. By lowering operational risks and the uncertainty of returns that ensure high financial performance, successful implementation of ERM practices in the banking sector enables banks to increase value (Lechner & Gatzert, 2018).

Particularly, decisions made by banks regarding acquisitions, derivatives trading, or consumer loan lending are unquestionably strategic risk decisions. The interaction of the policies, procedures, and criteria that control how the bank makes new strategic decisions also contributes to the other portion of bank risks. One issue with ERM is the composition of a bank's entire lending portfolio; an excessively risky or undiversified portfolio can cause the bank to go bankrupt. A bank that has the policy of making the loan process as simple as possible for customers while also not verifying borrowers' credit histories or addresses before issuing a loan would be exposed to a strategic risk because the interaction of these two policies has a significant impact on the loans the bank makes and its resulting loan portfolio. However, the challenge for the bank's operational risk management is deciding which loans to turn down and what rates to offer prospective borrowers at various risk levels. In this case, the bank is not particularly worried about the drawbacks of a particular loan. The challenge is determining the right loan terms and prices in order

to maximize expected return. In contrast to strategic risks, the bank should place more emphasis on expected value than actual risk. Thus, lending money to people with a high likelihood of defaulting on their debts can be profitable at a high enough interest rate. Individuals may have a very low default probability, but they may also demand an interest rate so low that lending to them is unprofitable. Therefore, the expected value of each loan should be the bank's primary operational concern, but at the firm or strategic level, the bank should be concerned with the possibility that either a single large loan or the portfolio of loans, as well as the set of policies or criteria the bank will use to make loans, will significantly harm the organization (Bromiley *et al*., 2014).

Due to the difficulty in explaining the relationship between risk and firm performance, as a direct relation or merely as a consequence of risk, empirical evidence on the relationship between risk management and performance is still scarce in Kenya. Although preliminary research suggests a link between risk adoption and firm performance, the scope of the study has so far largely been limited to the US and Europe. Since businesses in African nations like Kenya differ greatly from those in the US and Europe, little is known about risk there (Falkner *et al*, 2015).

For a 5-year period (2000–2005), Pagach & Warr (2010) looked at the impact of risk management on the business performance of companies listed on the Polish Stock Exchange. The study came to the conclusion that risk management improves business performance. Silva & Chan (2014) also studied risk management adoption and business performance over a nine-year period in 30 companies that were listed on the Brazilian stock exchange. The results demonstrate a favorable and significant correlation between risk management and business performance. Teoh, *et al*,. (2017)

also looked at how risk management affected the performance of Malaysian public listed companies. The study discovered that Malaysia's adoption of risk management had a favorable effect on business performance. Furthermore, in the US insurance market, Hoyt & Liebenberg (2011) examined the connection between risk management and firm performance. Their findings suggested that risk management and performance are positively correlated. The effect of risk management on the performance of the brewery industry in Nigeria was examined by Ugwuanyi & Imo (2012). According to the study, risk management significantly and favorably impacts the performance of the Nigerian brewery industry. Waweru and Kisaka (2013) looked at the level of risk management implementation for 22 companies listed on the Kenyan Stock Exchange for the year that ended in December 2009. The findings demonstrated that raising the level of risk management implementation in businesses increases the value of those businesses.

In Malaysian publicly traded companies, Ping and Muthuveloo (2015) assessed the implementation of ERM and its impact on firm performance. They used a structural equation model to analyze almost 103 survey responses. Their findings suggested that the adoption of ERM had a favorable impact on business performance. In a related study, Hoyt et al. (2011) looked into the performance effects of ERM implementation by companies chosen from the banking and insurance sectors. The study discovered a favorable and significant correlation between the use of ERM and business performance. Further evidence that risk management enhances business performance comes from a survey of risk managers in the United States (US) (Gates *et al.*, (2012). Accordingly, a study of 82 US insurers reveals a significant positive relationship between risk management and firm performance (McShane *et al.*, 2011).

On the other hand, Shima et al. (2013) looked into the connection between risk management and the success of listed companies on the Malaysia Stock Exchange. 175 publicly traded companies from the years 2008 to 2012 were examined. According to the study, there is a bad correlation between Malaysian listed companies' performance and ERM. Additionally, Mojtaba & Davoud (2017) conducted research on how risk management affects the performance of listed companies in the Iranian financial market. The research discovered a link between risk management and poor performance for companies listed on the Tehran Stock Exchange. Ballantyne (2013) also examines risk management practices and business financial results using a sample of 134 publicly traded U.S. companies. According to the study, a firm's financial performance is not correlated with the adoption of risk management. Additionally, from 2011 to 2013, Agustina & Baroroh (2016) looked into the connection between risk management and company performance in 53 Indonesian banks. They used ROE to gauge business performance. Their findings showed that risk management and ROE have no relationship.

The studies indicate a tepid relationship between risk management and firm performance, but the majority of the data come from developed nations. The risk management and performance relationship among Kenyan firms, which differ from those in developed economies in a number of ways, is evidently poorly supported by empirical evidence. Therefore, it is important to comprehend how risk management affects bank performance in Kenya in light of the low interest rate environment.

2.5.4 Moderating Role of Interest Capping

A causal model where the dependent variable is a cause of the independent variable and the magnitude or direction of that causal impact depends on a third variable is

implicitly assumed by moderation. It describes a relationship between two variables, one of which is independent, and the other of which is dependent, in which a moderator variable affects the way an independent variable affects the dependent variable (Dawson, 2014).

The law of supply and demand serves as the basis for resource allocation, which is based on price theory. According to the law of supply, there is a positive relationship between price and the amount that producers are willing and able to supply, other things being equal. Quantity supplied rises as price rises, and quantity supplied declines as price falls. As a result, it is the procedure by which variations in prices signal and shape variations in the quality and type of produced goods and services (Dow & Rahi, 2003).

The macroeconomic environment, which has an impact on bank profitability, includes the level of interest rates. Numerous academics have looked into studies on how interest rates impact performance. The impact of monetary policy on bank profitability was examined by Borio et al. (2015). They looked at how interest rates affected the various profit-making categories, such as interest income, non-interest income, the amount of provisions, and overall profitability as determined by return on assets. The research found that bank income rises when interest rates rise and vice versa.

According to Alessandri & Nelson (2015), market interest rates have a consistent impact on bank profitability. With an increase in interest rates, the net interest margin rises. Banks increase their lending rates in response to higher interest rates and decrease their lending volume, possibly by tightening their lending standards, and vice versa. In their 2014 study, Genay and Podjasek looked at how an environment of

low interest rates brought on by an expansionary monetary policy affected bank profitability. Similar to the papers mentioned earlier, it is discovered that short-term interest rates have a favorable impact on the net interest margin. The impact on smaller banks is greater. Despite the fact that their analyses imply that flat term structures and low short-term interest rates squeeze profits, they argue that the overall impact of low interest rates on profits ends up being favorable due to their beneficial effects on the business cycle. Evidently, a larger weight is given to the macroeconomic environment when determining profitability. Furthermore, Genay and Podjasek (2014) contend that banks were able to offset the adverse effects of low interest rates on profits by changing their operational procedures, possibly by increasing fee income and decreasing loan loss provisions.

Irungu (2013) wanted to know how the performance of Kenya's commercial banks was affected by the interest rate spread. According to the study, there is a significant positive correlation between commercial banks' financial performance and interest rate spread. The study found that interest rate spread had an impact on asset performance in banks because it raised the cost of loans owed to borrowers and regulation of interest rates had a significant negative impact on asset performance. In a different investigation, Okech (2013) looked into how lending rates affected the performance of Kenyan commercial banks. In relation to lending interest rate, the study took into account management efficiency and operating cost efficiency. The study discovered a tenuous positive correlation between lending rates and commercial banks' performance.

By providing information and influencing management behavior to align bank strategy with desired output (performance), the introduction of interest rates cap in

Kenya between 2016 and 2019 moderated the impact on bank strategy and performance variables. Because management apathy in the wake of a low interest rate environment weakens the relationship between bank strategy and performance, caps served as a signal to bank management on how resources and strategy should be deployed in order to sustain performance (Frazier *et al*., 2004).

It is obvious that the low interest rate environment compelled banks to change their strategies through organizational restructuring, staff reductions, the adoption of technology, the withdrawal of credit from low-income earners, and an increase in lending costs via additional fees and commissions. Thus, as banks sought to maintain and enhance their performance goals, their strategies for bank efficiency, risk management, and diversification were clear (CBK, 2018).

Overall, bank profits fall in an environment with low interest rates, and it is also argued from one line of research that low interest rates actually hurt rather than help the banking system as a whole. In light of this, the current study aimed to quantify how interest capping affected Kenyan banks' performance and strategy.

2.6 Control Variables

2.6.1 Bank Size

One of the most important factors that captures economies of scale and diseconomies of scale when describing performance is a firm's size. The size of the company affects a number of banking operations, including access to equity capital, reputation, and investment opportunities. Larger banks have a greater say in strategic choices and a greater impact on stakeholders and rivals. This is due to the fact that a bank's size and individual characteristics in terms of assets, capital, deposits, and loans affect the

quality of decisions made regarding the activities that a bank undertakes, which in turn affects the strength of financial performance (Olowokure *et al*., 2015).

Prior studies have addressed the relationship between size and performance, and numerous empirical findings support the idea that size plays a role in determining bank performance. Various findings have been made after a review of the literature on the relationship between bank size and performance. A significant positive relationship between size and performance has been seen in earlier studies by Dogan (2013), Saeed (2014), Kigen (2014), Muhindi & Ngaba (2018). For example, a panel data study from 2012 to 2016 to evaluate the impact of bank size on the financial performance of Kenyan banks using the number of branches, capital base, number of customer deposits, loans, and advances as the key variables discovered a positive relationship between bank size and financial performance and revealed that larger banks exhibit higher ROA compared to medium and small banks. Leong and Dollar (2002) looked into how large a bank's assets were in relation to how profitable they were. They demonstrated, using data from Singaporean banks, that larger banks typically exhibit lower efficiency, resulting in lower return on assets (ROA) and return on equity (ROE) than smaller banks. Using panel data of 43 banks from 2007 to 2016, Mwangi, Makau, and Kosimbei (2014) determined the impact of bank size as measured by total assets on the financial performance of commercial banks in Kenya. The study's findings demonstrated that total assets had a favorable impact on ROA and ROE. The study also discovered that a bank's financial performance increases with size.

In contrast, other studies supported a negative relationship between bank size and performance, indicating that bigger banks perform worse than smaller ones. These

findings are supported by Antoun et al. (2018), Michael (2015), and Niresh & Velnampy (2014). For example, Michael (2015)'s study, which used a dynamic panel data estimation technique for a sample of 468 quoted firms operating in industrial sectors, found that size indicators like the log of total sales and assets are not correlated with ROA and ROE but are significantly and negatively correlated with market value. Murthy (2015) examined the income and profitability of banks in the GCC nations. The study demonstrated that the size of the total assets had a significant inverse effect on banks profitability using data from 78 banks between the years of 2002 and 2008. The size of the assets showed a negative relationship with profitability when Naceur (2003) looked into the factors affecting Tunisian banks' profitability over the 1980–2000 period. In their findings, Hassan and Bashir (2003) also demonstrated that bank size has a detrimental effect on profitability. When examining Jordanian commercial banks, AlKassim (2005) confirmed the findings of earlier researchers that there is an inverse relationship between bank total assets and profitability. In their study of the factors influencing Pakistani banks' profitability from 2005 to 2009, Gul et al. (2011) discovered an inverse relationship between shareholders' equity and bank profitability, though it was statistically insignificant. However, when examining European banks from 2006 to 2015, Menicucci and Paolucci (2016) found a statistically significant direct correlation between shareholders' equity and profitability.

In order for banks to gain size and growth advantages in the face of persistently low interest rates, the banking system must be consolidated through mergers and acquisitions (M&A). This is also true for the pressing need to make large-scale investments in new technologies. As a result, mergers and acquisitions are regarded as an efficient and well-known strategy used by organizations to compete in the modern,

globalized and dynamic environment. According to the literature, mergers and acquisitions (M&A) have been a crucial and important strategy for businesses to achieve growth and efficiency by generating synergies, cutting costs, acquiring assets, and entering new markets (Sherman, 2010).

Although the terms merger and acquisition are frequently used in opposition to one another, they refer to two distinct strategies for growing a company's clientele. A merger specifically refers to the joining of two or more businesses to form a new entity or holding company. One of the most prevalent defenses is that businesses can benefit from "synergies" after merging, such as anticipated cost savings, expansion opportunities, and other financial advantages that result from the cooperation of two businesses for the success of the enterprise. Instead, an acquisition is the purchase of stock or other assets from another business in order to gain managerial influence—mutual consent is not required. As they relate to combining resources, technology, and skills in an effort to improve the firm's performance and shareholders' wealth, profitability, survival, and shareholders appear to be the most crucial considerations and motivations for an organization considering mergers or acquisitions (Jagersma, 2005).

Over the past three decades, businesses in developed nations have heavily relied on M&A as a strategic tool for increasing performance and corporate restructuring. M&A has become more relevant, especially in the financial sector where banks are crucial to a nation's economic development. The analysis of the global financial sector reveals that banks are heavily involved in merger and restructuring processes, which are primarily seen in Europe and the US but have now spread globally (Awan & Mahmood, 2015).

Existing research shows a link between bank mergers and acquisitions and performance. The connection between M&A and the performance of the banks, however, has remained murky. Particularly, there is conflicting evidence regarding the impact of M&A on the bank's financial performance; however, some studies (Calomiris & Karenski, 2000; De Nicolo et al., 2003) report an improvement in financial performance following M&A. Akpan et al. (2019) recently looked at the effects of M&A on the operating performance of Nigerian banks between 1995 and 2012. After experiencing M&A, they observe a noticeable improvement in the investment banks. Similarly, Abdou et al. (2016) discover that M&A has a favorable impact on the financial performance of Nigerian banks. Hassen et al. (2018) investigate the effects of M&A on 60 banks in 17 different European nations between 2005 and 2013. They contend that M&A has a favorable impact, meaning that it ultimately succeeds in its objectives. Awan and Mahmmod (2015) also look at the effects of M&A on the performance of 7 commercial banks in Pakistan from 2002 to 2011. They demonstrate a favorable effect of M&A on banks' performance using four measurement ratios, including liquidity, profitability, solvency, and investment.

On the other hand, other studies (Berger et al., 2010; Badreldin, 2009; Rabier., 2017) show a decline in financial performance. According to some studies, almost half of M&A transactions fail to achieve their intended goals (Badreldin, 2009). Zhang (2015) looks into how mergers in Pakistan's banking industry from 1998 to 2006 affected costs and profit efficiency. They show that the bank's cost efficiency has increased following a merger, but they could find no convincing evidence of an increase in profit efficiency. Similar to this, Zhang (2015) investigates the financial performance of 10 Pakistani banks following M&A between the years of 2006 and 2011. Additionally, they employ four measurement ratios (profitability, efficiency,

leverage, and liquidity) and find that there has been no improvement in the performance of the bank following an M&A. Beccalli and Frantz (2009) make the claim that the operations of M&A are connected to a marginal decline in profit efficiency and a significant increase in cost efficiency while looking at the effect of M&A on the bank's performance.

In recent years, consolidation has reshaped the Kenyan banking industry, primarily with the goal of boosting profitability and absorbing struggling business models like smaller banks. Low interest rates make it unlikely that loans will be expanded, so asset growth through mergers and acquisitions is becoming more and more alluring. Because of the need to invest in new technologies at scale and the continued low interest rate environment, more banks are favoring large transformational deals like buyouts and corporate restructuring.

2.6.2 Bank Liquidity

The ability of a bank to guarantee the constant availability of funds to meet financial commitments or maturing obligations at a fair price is known as bank liquidity. It is the ability of a bank to pay off deposits when they are due and to carry out customer orders to make such payments. Banks heavily depend on customer deposits to distribute credit to their clients, so the more deposits a bank has, the more loan opportunities it will be able to offer clients to increase profits (Lee & Hsieh, 2013). Due to concerns about inadequate identification and management of liquidity risk, which are exacerbated by changes in the financial sector environment, and the complexity of the financial markets, regulators are focusing a lot of their attention these days on managing liquidity risk. Due to the growing interconnectedness of the

financial market, a liquidity shortage at one institution could have an impact on the banking system as a whole.

Due to the fact that banks convert deposits into loans, they are subject to liquidity risk. The role of liquidity risk management is to ensure the continuity of these key banking operations in order to maintain stakeholder confidence. Banking institutions' failure to provide the necessary funds for deposit withdrawals and loan growth results in problems with bank liquidity. In general, banks obtain the deposits required to maintain liquidity from retained deposits, cash reserves, short-term assets like easily redeemable government securities, or from maintaining credit lines with other financial institutions. In the long run, banks can also obtain deposits by borrowing money, typically at higher interest rates, or by selling off assets that they own (Dabiri *et al*, 2017).

With varying degrees of success, a number of papers have looked at the connection between liquidity and performance in the banking industry. There is a beneficial relationship between liquidity and bank profitability, according to studies by Lartey & Antwi (2013), Wambu (2013), Elsiefy (2013), Alshatti (2014), Islam & Nishiyama (2016), and others. In particular, Wambu (2013) found a positive correlation between bank liquidity and profitability in his study of the profitability and liquidity of Kenyan commercial banks between 2008 and 2012. The risk-return trade-off theory is supported by this. Additionally, the data demonstrates that the impact of liquidity risk on bank performance is adverse during financial crises. As a result, banks will try to increase their liquidity during the crisis in an effort to boost profitability, which will raise their financial costs and decrease their operational effectiveness. Banks typically maintain low levels of liquidity, which is advantageous for banks looking to reduce

their financial costs. These effects, however, typically lessen during a crisis. This suggests that banks with higher performance pose a greater liquidity risk (Osborne et al., 2012)

On the other hand, a study by Dabiri et al. (2017) on the profitability and liquidity of Islamic banks in the United Kingdom for the years 2005-2015 came to the opposite conclusion, finding that liquidity has a negative impact on bank profitability. Additionally, research conducted in Asia and Africa by Bassey & Moses (2015) and Lee & Kim (2014) revealed a negative correlation between liquidity risk and bank performance.

The impact of liquidity regulation on banks is examined by Banerjee & Hitoshi (2014), who also look into how banks reacted to tighter liquidity regulation in the UK. The findings imply that the new, stricter liquidity regulation that was implemented in the UK had an impact on how assets and liabilities were composed by banks. Reduced share loans and increased deposits from more stable non-bank and non-financial corporation deposits were used to make up for the calibration of high quality liquid assets to total assets. Comparatively, DeYoung et al. (2018) investigated how commercial banks responded to the low interest rate environment by changing their liquidity strategies. They discover that banks reduce their loan portfolios and boost their liquidity positions.

In order to maintain adequate liquidity to withstand a variety of stress events, such as interest capping, a bank should develop a strong liquidity risk management strategy. To ensure that the bank maintains sufficient liquid assets and to manage liquidity risk in accordance with risk tolerance, bank executives must develop frameworks, approaches, and practices. Additionally, banks should implement strategies that

effectively diversify the sources and maturity of deposits. In order to effectively diversify its deposit sources and regularly assess its capacity to raise deposits quickly from each source, it should maintain a strong presence in the funding markets it has chosen and a good working relationship with deposit suppliers. To ensure that estimates of raising deposits are still accurate, it needs to identify the key factors that affect its ability to raise money and carefully scrutinize those components (Wiley, 2018).

2.7 Summary of Gaps

An institution's strategy decision and implicitly the level of interest rates in the economy have an impact on how well it performs. As a result, the claim that a firm's strategy must be in line with its external environment in order to perform better has a long history in the literature on strategic management (Porter, 1980).

The effect of the low interest rate environment on bank strategy and performance has recently been the subject of renewed discussion on a global scale. A climate that promotes economic growth by lowering the cost of capital and expanding access to credit for businesses was the goal of policies like lowering interest rates. Despite their good intentions, rate caps have generally had a negative effect on bank performance (Naceur, 2003; Khan et al., 2016; Ng'ang'a 2017). In an effort to maintain performance that defied expectations, Kenyan banks changed their strategies by examining product diversification, bank efficiency, and risk management techniques (Maimbo & Gallegos, 2014; Mironga, 2019; Assuncao *et al*., 2014).

The Balance Scorecard (BSC) approach was used in the study to take into account the previously unresearched aspect of moderation through interest capping. Recent management research has focused on the BSC approach to measuring bank

performance; see Lee et al. (2013), Haleem & Muraleetharan (2016), and Tjader et al. (2014). Customers, internal business processes, learning and growth dimensions, as well as the financial perspective, are among the non-financial components of the BSC.

Even though the majority of empirical research on the impact of interest capping environments on bank strategy and performance has been conducted in developed nations (Equifax, 2014; Heng, 2015; Timsina et al., 2014; Khan & Sattar, 2016; Miller, 2013; Scheiber et al., 2016; Madaschi & Nuevo 2017), there is surprisingly little information available in Kenya. Therefore, this study concentrated on the Kenyan case and attempted to determine how the BSC approach could be used to determine how the bank's performance during the interest cap period was affected by the bank's strategies for risk management, diversification, and bank efficiency.

2.8 Conceptual Framework

This study focused on the moderating effect of interest capping on bank strategy and bank performance in Kenya. The BSC approach (Kaplan & Norton, 1992), which assesses firm performance from both a financial and non-financial perspective, served as the foundation for the study. According to this study, a successful bank is one that is diversified, risk-averse, and focused on efficiency.

Traditional financial metrics by themselves cannot be used to assess organizational performance, according to Kaplan & Norton (2004). This is due to the fact that businesses operate in complicated environments where understanding their objectives and means of achieving them is essential to their own survival. As a result, other non-financial measures, such as customer, internal business process, and learning and growth dimensions, were created to complement the financial measure.

Contextual to this study, the independent variables as measured by product diversification, bank efficiency and risk management were moderated by interest capping to explain Kenya's bank financial performance. Based on the various concepts and previous studies, the following conceptual framework showing the relationship between independent variables and dependent variable was created:

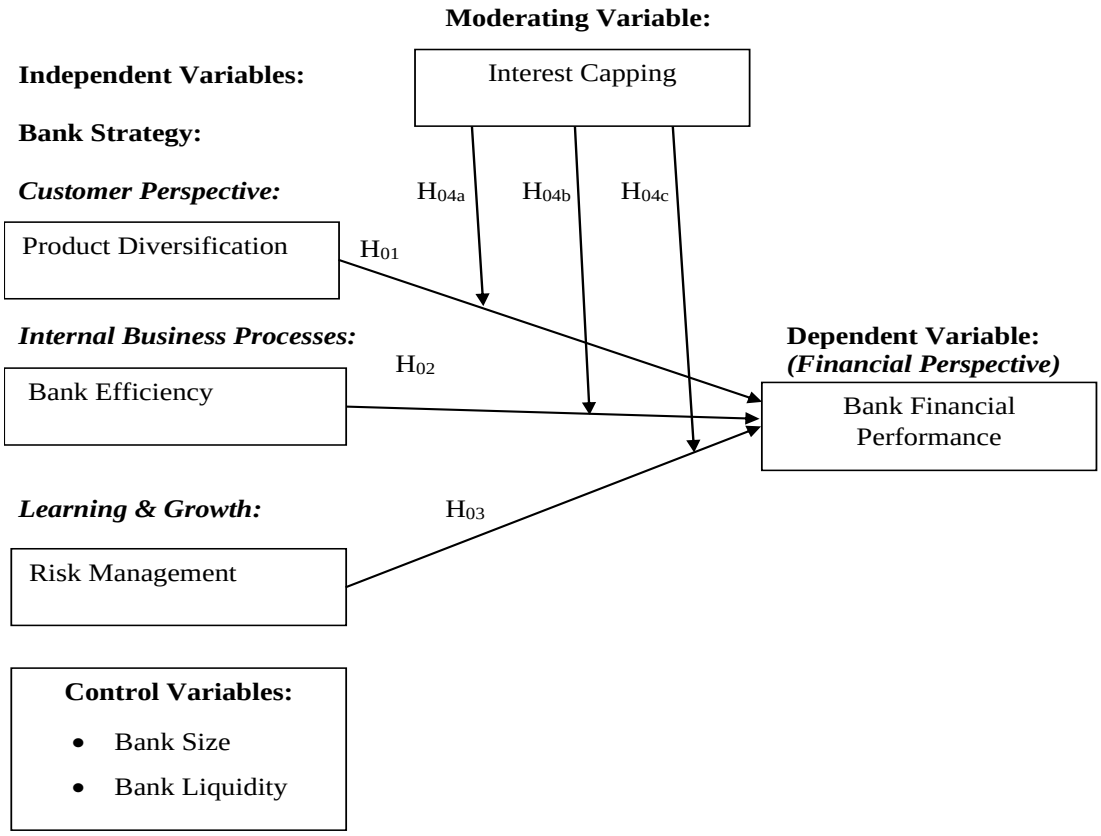

Figure 2.1: Conceptual Framework
Source: Developed for the study (2022).

Using the BSC approach, the lead indicators in the customer perspective, internal processes, learning and growth perspectives drive bank financial performance after controlling for bank size and liquidity. On interest capping moderation, the study sought to determine the moderating effect of interest capping on bank strategies and bank financial performance in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discussed the philosophical assumptions and the design strategies that underpinned the research study. It detailed the sample size, the sampling strategy, data collection instruments and procedure, measurement of variables and data analysis. It concluded with model specification and the presentation of test of regression assumptions.

3.1 Research Philosophy

The study adopted a positivist stance, which holds that the best ways to comprehend events are through observation and reason. According to this theory, reality is predetermined objectively and can be measured using variables that are unrelated to the researcher (Fadhel, 2002). This stance was appropriate because it showed a causal relationship that was derived using a scientific method like quantitative research and also applies a theory verification approach.

3.2 Research Design

The study used explanatory longitudinal research design. This method was used in the study to identify the cause-and-effect relationship and to explain the relationship between variables (Saunders et al., 2014).

Explanatory longitudinal research design goes beyond description to explain the causes of a phenomenon in order to predict future occurrences. It also evaluates the effects of specific changes to current circumstances. The method seeks to address the fundamental questions of "how" and "why" a particular phenomenon exists, such as the variety and differences among specific strategies or actions (Zikmund et al.,

2013). The explanatory case study research design was deemed to be the most appropriate due to the study's cross-sectional nature and the need to explain the nature of the relationship between the independent variables (product diversification, bank effectiveness, and risk management) and the dependent variable (bank financial performance).

Because it provided a rich environment for the development of estimation technique and theoretical results, the study used quantitative panel data regression methodology (Hsiao et al., 2003). Particularly, panel data had a better ability than a single cross-section or time series data to capture change in a number of bank variables over time. Along with combining the cross-sectional dimensions of product diversification, bank efficiency, and risk management to produce more reliable results, it also captured the time series dimension for the study's time period of 2013 to 2019.

The study's theoretical underpinnings were the linearity, independence, and homoscedasticity presumptions of regression analysis. The study tested the moderating impact of interest capping on bank strategic indicators related to product diversification, bank effectiveness, and risk management on bank performance in order to determine linearity. The regression model took into account homoscedasticity in the test of similar variation in the residuals or amount of error at each point across the model, in addition to assuming independence between bank strategies and performance.

Baron and Kenny (1986), Pasiouras and Kosmidou (2006), Hayes (2013), Chortareas et al. (2012), and Rughoo & Sarantis (2014) are some of the papers that used this kind of analysis. The main reason they chose panel data analysis was that it not only

captured the time series dimension but also provided more robust results through cross-sectional dimensions.

3.3 Target Population

The target population for this study was 42 commercial banks in Kenya. Commercial banks provided a fertile ground for the empirical testing because interest rate changes influence demand and supply of money in the economy and that banks are the major economic agents that implement central bank monetary policy.

All commercial banks in Kenya formed the unit of analysis for the study and the sampling frame was CBK database for the year ended 2019. Purposive or judgmental sampling technique was used where particular banks were selected deliberately because the researcher believed they warrant inclusion because they met the inclusion and exclusion criteria.

The inclusion criteria entailed commercial banks which were in operation during the research period from 2013 to 2019 as per CBK database (Appendix III). The exclusion criteria entailed isolating banks that were placed under receivership or registered in Kenya after 2013. Charterhouse bank, Dubai, Imperial and Chase banks were excluded because they were in receivership during the research period between 2013 to 2019. SBM and Mayfair banks were excluded because they started operations in 2017 and were not in operation in the entire research period between 2013 to 2019. Further, Bank of India was excluded because it is a fully owned foreign bank whose financial data on the Kenyan market were not available. Therefore, the sample reduced to 35 banks.

3.4 Data Types and Data Collection Instruments

Secondary data from annual audited financial reports for the sampled banks for the periods 2013 to 2019 were used to meet the objectives of the study. Further, the CBK bank supervision annual reports were also utilized to compliment bank annual audited financial reports. This report is released every year by the Central Bank of Kenya and it features analysis and commentary on bank financial performance relating to Kenya. Related studies, which used secondary data to measure bank performance using similar approach include Miller (2013), Ng'ang'a (2017) & Mironga (2019).

Data collection schedule (Appendix IV) was used to extract data from bank annual reports. The instrument comprised six inputs namely; net commission, total revenue, operating costs, total deposits, loan loss provision and total loan book for both pre-interest cap period and the post-interest cap period.

3.5 Data Collection Procedure

The data was extracted by documentation through CBK annual financial statements database reports covering banks in Kenya from 2013 to 2015 for the pre-interest capping period and 2017 to 2019 for post-interest capping period. A large amount of data on banks financial performance in Kenya is reported publicly as a regulatory requirement and international accounting practices are followed to ensure standardization. The unit of our analysis for the study was bank-year.

The Data Collection Schedule was used to record six inputs derived from bank balance sheet and profit and loss statements. These inputs are net commission, total revenue, operating costs, total deposits, loan loss provision and total loan book for both the pre-interest period and the post-interest period (Appendix IV).

Thereafter, five ratios involving net commission on total revenue, cost-to-income ratio, loan loss provision on total loan, total loans to total deposit and total revenue on total assets were computed. The ratios relate to product diversification, bank efficiency, risk management, bank liquidity ratio and Return on Assets (ROA) respectively.

3.6 Measurement of Variables

The dependent variable was bank financial performance while the independent variables were product diversification, bank efficiency and risk management. The impact of interest capping was analyzed and interpreted as moderating the influence of the independent variables on bank performance.

The variables were derived from bank financial statements for the period under study. The study used financial ratio analysis (FRA) to measure, describe and analyze bank performance. FRA is effective in comparing bank performance and it compensates for disparities and controls for any size effect on the financial variables being studied (Samad, 2004). Additionally, ratios reveal trends which create benchmarks against which bank strategy and performance can be analyzed. Specifically, the measurements of the variables are elaborated below;

3.6.1 Bank Financial Performance

Bank financial performance was the dependent variable of the study and is mainly measured by profitability which is proxied by two alternative measures: Return on Assets (ROA) and Return on Equity (ROE). ROA has been widely been used in previous management literature to depict management's ability to maximize use of assets to generate revenue (Marti *et al.*, 2015; Disegni *et al.*, 2015; Eccles *et al.*, 2014). The higher the ROA, the more profitable is the bank.

Therefore, the study used ROA because it evaluates the relative profitability of asset utilization by taking into account both revenue and assets of the bank. Further, data on total revenue and total assets was readily available in the financial statements. The ROA formula adopted by the study is depicted below;

ROA=Total Revenue / Total Assets

3.6.2 Bank Strategy

Bank Strategy as a construct of the independent variables was measured using three variables namely product diversification, bank efficiency and risk management as described below;

3.6.2.1 Product Diversification

Product diversification was measured using Herfindahl–Hirschman diversification index as it is deemed suitable to measure the share of the commission income from total bank revenue which was beneficial in interpreting management's strategy on revenue streams. The ratio described the commission growth or decrease by the relative proportion of commission to the total revenue.

In the past, management studies by Saunders *et al.* (2014), Jouida (2018) and Batool & Jamil (2019) among others have used the ratio. The diversification formula adopted by the study is depicted below;

Product diversification=Net commission/Total Revenue

3.6.2.2 Bank Efficiency

The proxies used to sketch business efficiency are cost-to-income ratio (CIR) and noninterest expense over total assets ratio. CIR measures management's efficiency in managing operating costs and is depicted by the portion of the total revenue absorbed by

operating costs. It is widely adopted in management studies such as Baik *et al* (2013), Gill *et al* (2014) and Jakada & Aliyu (2015) among others. The lower the ratio, the more efficient is the bank.

This study used CIR because it has intuitive appeal and it was a good measure to reveal management's ability to cover its operating expenses from obtained revenue. The CIR formula adopted by the study is depicted below;

CIR=Operating Cost/Total Revenue

3.6.2.3 Risk Management

The Loan Loss Provision (LLP) to total loans ratio has been widely adapted to measure risk in banks. It indicates management's ability to regulate credit risk because it defines the proportion of loan provision amount in relation to total loan amount. Studies that have employed loan loss provision include Silva & Chan (2014), Muriithi & Waweru (2016) and Teoh *et al* (2017). Other alternative measures for risk include interest income to total revenue and loan non-performing loans to total loan.

The study used loan loss provision as a measure for risk because it is an indicator of risk management which affects profitability of banks. The risk formula adopted by the study is depicted below;

Risk Management=LLP/Total Loan

3.6.3 Interest rate

The study used CBK macro statistics on annual average interest rates for the industry for the years 2013 to 2019 to extract the interest rate figure (moderator) for each year under study (Appendix V). CBK collects information on annual average interest rates for all banks and thereafter compute the weighted average of interest rate which is a

single interest rate that yields the average lending rate for the industry for a particular year.

To calculate the weighted average interest rate for the industry loans, CBK multiplies each bank's outstanding loans by its average rate of interest rate and then add the results for all banks and divide by the sum of all industry loan balances. This is consistent with the research by D'Alberto (2015), Khan & Satar (2016) and Genay & Podjasek (2014).

3.6.4 Control Variables

The inclusion of bank Size and bank liquidity as control variables in the study checked for possible omitted primary variable biases consistent with previous studies (Lee & Hsieh, 2013; Alshatti, 2014; Do & Vu, 2019).

3.6.4.1 Bank Size

The study measured bank size by the natural logarithm of the value of total assets in Shillings and the formula adopted by the study is depicted below:

$$\text{Bank Size} = \text{Log of Total Assets}$$

The choice of this variable was because larger banks are more influential in strategic decisions and that increased size is presumed to confer benefits such as greater market power, improved technological efficiency and ability to secure funding at a lower cost which enhance performance. This is consistent to the work done by Petria et al (2015), Saeed (2014) & Antoun *et al* (2018).

3.6.4.2 Bank Liquidity

Loan to Deposit Ratio (LDR) was used to gauge the composition of the sum of loans compared to bank deposits available and is an indicator of management's ability to

meet their obligations when they fall due such as customers' access to cash at sight or short notice and commitment to lend. The ratio is represented in the equation below;

Loan-to-Deposit (LD Ratio) =Total Loans/Total Deposits

LD ratio was appropriate for the study because of its simplicity and is consistent to the work done by Wambu (2013), Alshatti (2014), Islam & Nishiyama (2016). An LD ratio greater than 100% is a cause of concern as it indicates that the bank is lending more than the available deposits.

3.7 Data Analysis

Data collected from financial reports were keyed in, coded, cleaned and analyzed quantitatively. The data was analyzed using Stata version 13 because the built-in functions offer constructive and reliable data processing capabilities which were sufficient for the study.

3.7.1 Descriptive statistics

To look for trends and describe the data, descriptive statistical methods were used, particularly measures of central tendency like mean, variance, and standard deviation. In an easy-to-understand manner, descriptive statistics summarize the data and describe the fundamental characteristics of a population or sample (Zikmund *et al*,. 2013).

3.7.2 Inferential Statistics

To make inferences about significant relationships between variables, inferential statistics are used (Vanderstoep & Johnston, 2009). They are used to test various hypotheses about the relationships between variables or to estimate characteristics of the population from sample data.

The study used Pearson's moments correlation and hierarchical regression analysis. Correlation described the strength and direction of linear dependence between the dependent and independent variables. Thus, Pearson's moments correlation coefficient was used to index the degree of linear association between bank performance and bank strategic indicators. The Pearson correlation coefficient, *r*, takes values between -1 and 1. The further away *r* is from zero, the stronger the linear relationship between the two variables. The sign of *r* corresponds to the direction of the relationship. If *r* was positive, then as one variable increases, the other tended to increase. If *r* was negative, then as one variable increases, the other tended to decrease.

3.8 Model Specification

3.8.1 Hierarchical Regression

The study used hierarchical multiple regression analysis following Baron and Kenny (1986) and Ishak & Al-Ebel (2013) methodology where the study examined the effect of interest cap on bank financial performance in the context of independent variables in the study.

The moderator (interest cap) on predictor variables was expected to exert an effect on bank financial performance and thus moderation analysis for the study was appropriate. The moderating role of interest rate capping was expected to alter the rate of interest chargeable on bank loans and thereupon provided an understanding of the effect of interest capping environment on bank financial performance.

The conditions for moderation that the study complied with entailed firstly, the moderation test had to be a linear model to estimate the effect of the interaction of predictor variables on the dependent variable (Andersson *et al*., 2014; Baron & Kenny, 1986). Secondly, the model with the interaction had to be significant to aid in

decision making. Thirdly, the scores on all quantitative variables had to be normally distributed and the residuals must not be auto correlated. Lastly, the variance of the residuals had to be constant or no extreme outliers (Dawson, 2014).

The Dependent variable was abbreviated as Financial Performance (FP) while the independent variables were abbreviated as Product Diversification (PD), Bank Efficiency (BE) and Risk Management (RM) while the control variables are Bank Size (BS) and Bank Liquidity (BL). The Interest Rate capping as a moderator was represented by IR. The models were as follows:

$$FP_{i,t} = \alpha + \beta_1 BS_{i,t} + \beta_2 BL_{i,t} + \varepsilon \quad (1)$$

$$FP_{i,t} = \alpha + \beta_1 C_{i,t} + \beta_2 PD_{i,t} + \beta_3 BE_{i,t} + \beta_4 RM_{i,t} + \varepsilon \quad (2)$$

$$FP_{i,t} = \alpha + \beta_1 C_{i,t} + \beta_2 PD_{i,t} + \beta_3 BE_{i,t} + \beta_4 RM_{i,t} + \beta_5 IR_{i,t} + \varepsilon \quad (3)$$

$$FP_{i,t} = \alpha + \beta_1 C_{i,t} + \beta_2 PD_{i,t} + \beta_3 BE_{i,t} + \beta_4 RM_{i,t} + \beta_5 IR_{i,t} + \beta_6 PD_{i,t}{}^{*} IR_{i,t} + \varepsilon \quad (4)$$

$$FP_{i,t} = \alpha + \beta_1 C_{i,t} + \beta_2 PD_{i,t} + \beta_3 BE_{i,t} + \beta_4 RM_{i,t} + \beta_5 IR_{i,t} + \beta_6 PD_{i,t}{}^{*} IR_{i,t} + \beta_7 BE_{i,t}{}^{*} IR_{i,t} + \varepsilon \quad (5)$$

$$FP_{i,t} = \alpha + \beta_1 C_{i,t} + \beta_2 PD_{i,t} + \beta_3 BE_{i,t} + \beta_4 RM_{i,t} + \beta_5 IR_{i,t} + \beta_6 PD_{i,t}{}^{*} IR_{i,t} + \beta_7 BE_{i,t}{}^{*} IR_{i,t} + \beta_8 RM_{i,t}{}^{*} IR_{i,t} + \varepsilon \quad (6)$$

Where;

α = Constant term

β = Regression coefficient

$C_{i,t}$ = Control Variables

ε = Error term

i = bank entity

t = period 2013…2015 for pre-interest period and 2017…2019 for post-interest period.

3.8.2 Random and Fixed Effects Test

The hierarchical nature of the study induced a way to check whether there were omitted variables that could be correlated with the explanatory variables in the model

or vice versa. Effectively, panel data models offer two major approaches to resolve the problem through Fixed Effects (FE) and Random Effects (RE) models.

The relationship between predictor and outcome variables within an entity is investigated by the fixed effects (FE). Each thing has unique qualities of its own that might or might not have an impact on the predictor variables. According to FE, it is necessary to control any individual variable that might affect or skew the predictor or outcome variables. So that the study can evaluate the predictors' net effect, FE takes away the influence of time-invariant characteristics from the predictor variables. Additionally, the FE model makes the assumption that time-invariant characteristics are specific to each individual variable and should not be correlated with other personal characteristics (Green, 2012).

Contrary to the fixed effects model, the random effects model assumes that variation between entities is random and unrelated to the predictor or independent variables included in the model. Regression coefficients can thus differ between subjects or clusters in RE models.

The Hausman test (1978) was used to determine which approach between random effect and fixed effect was most effective. The test determined whether the variations between entities were random and unrelated to the independent or model-relative predictors. The appropriate hypothesis test used was as follows:

H_0*: The preferred model is random effects*

H_1*: The preferred model is fixed effects*

The null hypothesis was rejected if the Hausman statistic was less than its critical value i.e. reject H_0 if $p<0.05$.

3.8.3 Unit Root (Stationarity) Test

The unit root test was used to determine whether or not the study's time series data were stationary. In order to determine whether a series is stationary or not, the study performed a stationarity test using the Dickey-Fuller test (1979);

H_0: *The time series is stationary*

H_1: *The time series is not stationary*

In figuring out the study's stationality or unit root, the value coefficient was important. The null hypothesis that the time series is stationary was typically rejected when the p-value was less than 0.05.

3.9 Test of Regression Assumptions

The study had its foundations in the assumptions underlying regression analysis about stationarity, normality, linearity, homoscedasticity, independence and multicollinearity as follows:

3.9.1 Normality Test

According to Osborne and Waters (2002), regression presupposes that variables have a normal distribution. The following null and alternative hypotheses were used in the study's Shapiro-Wilk (Shapiro & Wilk, 1965) test to determine whether the data were normal:

H_0 : *The data are sampled from a normal distribution*

H_1 : *The data are not sampled from a normal distribution*

The most popular and widely used method, the Shapiro-Wilk test, was utilized because it has a greater ability to identify nonnormality (Yap & Sim, 2011). There is insufficient evidence to conclude that the data do not follow a normal distribution if the p-value is higher than the significance level of 0.5, so the null hypothesis is not

rejected. In contrast, the test disproved the normality hypothesis when the p-value was less than 0.05 and came to the conclusion that the data are not distributed normally.

3.9.2 Linearity Test

The assumption of linearity in regression analysis states that the relationship between the dependent and independent variables is linear. To determine the degree of linear correlation between each bank's strategic indicator and its financial performance variable, the study used Pearson's correlation coefficient (Pearson, 1986). The coefficient measured how linearly bank performance and bank strategic indicators were related. The hypothesis tested was as follows;

H_0: *The variables are not linearly related*

H_1: *The variables are linearly related*

The Pearson correlation coefficient, *r*, takes values between -1 and 1. The further away *r* is from zero, the stronger the linear relationship between the two variables. The sign of *r* corresponds to the direction of the relationship. If *r* was positive, then as one variable increases, the other tended to increase. If *r* was negative, then as one variable increases, the other tended to decrease. A perfect linear relationship (r=-1 or r=1) means that one of the variables can be perfectly explained by a linear function of the other (Von & Wiedermann, 2014).

Further, the coefficient of determination R^2 was used to reveal the strength of the relationship i.e. how much variability of bank financial performance was explained by the bank strategic indicators. The index ranges from 0 to 1 and values greater than 0.5 meant that the model accounted for greater amount of variance of bank financial performance (Von & Wiedermann, 2014).

3.9.3 Homoscedasticity Test

Regression makes the underlying assumption that the model errors' variance, which is unknown but finite, is constant for all values of the predictor variables (Weisberg, 2005). According to homoskedasticity, the variance of random error is fixed at the same value for all observations. Heteroskedastic random errors are when the classical linear regression model's random errors are not homoskedastic. The Breusch-Pagan test (1979) was used in the study to identify any instances of linear heteroskedasticity that resulted from variations in the conditional variance of the bank financial performance variable for various levels of the bank strategic indicators. The purpose of the study was to determine whether the variance of the regression errors was influenced by the values of the bank's strategic indicators. The Hypothesis testing was as follows;

H_0: *The error variances are all equal.*

H_1: *The error variances are not equal.*

The existence of homoscedasticity served as the null hypothesis in this statistical test. The existence of heteroscedasticity was confirmed if the p value was less than 0.05, which meant that the alternative was accepted and the null hypothesis was rejected. These tests follow the same methodologies used by Miller (2013), Nganga (2017), and Mironga (2019).

3.9.4 Independence Test

In time series data, regression presupposes that the dependent variable is error-free and that there is no correlation between successive residuals (Chatterjee & Hadi, 2012).The Wooldridge (1985) statistic was used for the independence test. This is a measurement of autocorrelation in regression analysis residuals. It is possible for predictors to appear significant when they are not because autocorrelation implies that

the errors of adjacent observations are correlated. The Wooldridge hypotheses used was as follows;

H_0: *No First-order autocorrelation exist*

H_1: *Fist-Order autocorrelation exists*

The test statistic, which has an F-distribution under the null hypothesis, is the F-statistic resulting from the regression of the residuals on the lagged residuals. The null hypothesis was rejected and serial correlation was declared to be present if the p-value corresponding to the F-statistic was less than the selected significance level of 0.05. This method is comparable to that employed by Capuno et al. (2019) and Nguyen et al. (2020).

3.9.5 Multicollinearity Test

When there is correlation among the predictors in a regression model, multicollinearity exists. Tolerance and its inverse, the variance inflation factor (VIF), were used in the study to identify multicollinearity. The tolerance measures the proportion of a predictor's variance that cannot be explained by other predictors, whereas the VIF measures the extent to which multicollinearity inflates the variance of the coefficient estimate (Toldridge, 2015). The null and alternate hypothesis was as follows;

H_0 : *Multicollinearity exit*

H_1 : *Multicollinearity does not exist*

As a rule of thumb, Researchers such as Salmeron *et al*. (2019) have shown that VIF exceeding 10 indicates the presence of multicollinearity while Jamal (2017) stated that a tolerance value of 0.10 is recommended as the minimum level of tolerance.

Table 3.1: Test Summary Table

ASSUMPTION	TEST	INTERPRETATION
Normality Test	Shapiro-Wilks test	Reject Ho if $p < 0.05$
Linearity Test	Pearson Correlation	r -1 to 1; r > 0=positive association. R^2 will show strength of relationship
Homoscedasticity Test	Breusch-pagan Test	Reject Ho if $p<0.05$
Independence Test	Wooldridge test	Reject Ho if $p<0.05$
Multicollinearity Test	Tolerance & Variance Inflation Factor (VIF)	T<0.1 a concern

Table 3.2: Summary of Hypothesis Test

Hypothesis	Test Statistic	Decision Rule
H_{01}: Product diversification has no significant effect on bank financial performance.	β, p-value	Reject H_{01} if P<0.05
H_{02}: Bank efficiency has no significant effect on bank financial performance.	β, p-value	Reject H_{02} if P<0.05
H_{03}: Risk management has no significant effect on bank financial performance.	β, p-value	Reject H_{03} if P<0.05
H_{04a}: Interest cap has no significant moderating effect on product diversification-bank financial performance relationship.	β, p-value	Reject H_{04a} if P<0.05
H_{04b}: Interest cap has no significant moderating effect on bank efficiency-bank financial performance relationship.	β, p-value	Reject H_{04b} if P<0.05
H_{04c}: Interest cap has no significant moderating effect on risk management-bank financial performance relationship.	β, p-value	Reject H_{04c} if P<0.05

3.10 Ethical Considerations

The ethical issues of informed consent, confidentiality and conflict of interest were adhered to by the researcher through being honest and credible during data collection. The research received an authorization letter and a research license to conduct

research from Moi University and NACOSTI respectively. Subsequently, the research was subjected to plagiarism test to cross-check text for duplicated content in order to maintain academic integrity. Specifically, the research used audited financial statements which are free from bias because they were prepared in accordance to International Accounting Standards. Further, data collected was only used for the purpose of this study and all sources of information were cited and referenced by the researcher.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

4.0 Introduction

This chapter presents the data analysis, presentation and interpretation of data outputs generated from the STATA version 13. The areas covered include descriptive statistics, diagnostic tests and inferential statistics. The descriptive statistics on bank financial performance, bank liquidity, bank size, product diversification, bank efficiency, risk management and interest rate capping were analyzed using the mean, standard deviation, minimum and maximum descriptive measures. The regression assumptions tests including linearity, normality, heteroskedasticity, independence and multicollinearity tests were also run and presented. Finally, the inferential statics were analyzed and presented using correlation and hierarchical regression.

4.1 Descriptive Statistics and Research Variables

The table 4.1 presents the descriptive statistics and it showed that Return on Asset (ROA) for post-interest cap period between 2017 to 2019 with a mean of 0.0720414 declined in comparison to pre-interest cap period between 2013 to 2015 which stood at 0.0858541. The decline in performance signifies that the capping of interest rate during post-interest cap period to 13% from as high as 16.6% during pre-interest cap period influenced bank financial performance. Further, this is an indicator that banks changed their lending strategy by cutting on lending which reduced revenue. This is consistent with research by Boro et al. (2015) and Alessandri & Nelson (2015), which found that a decline in interest rates has a significant negative impact on bank profits and alters banks' lending strategy by reducing their willingness to extend new credit.

The decline in standard deviation to 0.0215203 during post-interest cap period from 0.0264693 during pre-interest cap showed that the impact of interest capping on bank performance was more consistent and apparent during post-interest cap period. Moreover, the differences in the minimum and maximum measures showed that the performance of some banks were much better than others during pre and post-interest cap periods.

Bank Liquidity (BL) improved from a mean of 0.7850533 during pre-interest cap period to a mean of 0.7521941 during post-interest cap period. The improved liquidity during interest cap period confirms banks' strategy to cut lending during post interest cap period. This is in line with the findings of DeYoung et al. (2018), who described commercial banks' liquidity strategies and verified that banks reduce their reliance on loans and increase their liquidity positions in response to the low interest rate environment. Further, bank liquidity showed an increase in standard deviation from 0.1305898 during pre-interest capping period to 0.168186 during post interest capping period. This signifies that banks strategy to lend during pre-interest capping was more consistent & more resounding than post-interest capping period where banks were reacting and employing different strategies on investment of deposits to counter interest capping. The maximum and minimum variations in bank liquidity indicate that some banks have higher and better liquidity positions than others.

The mean of Bank Size (BS) as represented by the log of assets was 10.56139, standard deviation 1.323079, minimum 8.218787 and maximum 13.23228 before the capping period and mean of 10.84872, standard deviation 1.413863, minimum 8.257126 and maximum of 13.70856 after the capping period. The bank size mean showed that banks assets were higher during interest cap period than pre-interest

capping period indicating that banks undertook restructure strategies through reorganization, mergers or consolidation of assets during interest capping period. This is in line with the findings of Hessen et al. (2020) and Akpan et al. (2019), who noted that large transformational deals like M&A, buyouts, and corporate restructuring become alluring to gain synergies of size advantages when loan expansion prospects are limited due to low interest rates.

The standard deviations showed a higher spread from the mean during the interest cap period indicating that banks had different strategies to capitalize their assets during interest cap period such as restructure, mergers or consolidation of assets. The minimum value showed that smaller banks clustered around the same mean in terms of bank size during both periods while the maximum value pointed to a wide variation in the size of larger banks during interest cap period.

The mean of Product Diversification (PD) before the capping period was 0.2324656, standard deviation 0.1101513, minimum 0.0479134 and maximum 0.540553 and mean 0.2766804, standard deviation 0.1123433, minimum 0.0646708 and maximum 0.5631399 during the capping period. This showed that product diversification strategy was more pronounced during the capping period. This is a pointer that banks shifted their focus from traditional lending strategy to commission-based business strategies such as service fees, loan negotiation fees, brokerage fees as well as fees derived from trading in stocks and bonds. This is consistent with studies conducted by Baele et al. (2007), Wani et al. (2015), and Engle et al. (2014), which highlighted that diversification is advantageous to banks in their effort to maximize their pool of resources after economic shocks like a low interest rate environment and to increase their economies of scale. The standard deviation indicated that in both periods the

spread of data was clustered around their means. The minimum and maximum data showed that there were minimal increments in product diversification between highly diversified banks and those banks with slight diversification in both periods.

The Bank Efficiency (BE) mean was 0.6776054, standard deviation 0.2591698, minimum 0.2454819 and maximum 1.376033 before the capping of interest rates and mean was 0.7450336, standard deviation 0.2628885, minimum 0.2291031 and maximum 1.488087 during the interest cap period. The average bank efficiency showed that banks were less efficient during interest capping period as compared to pre interest cap period. This is because banks total revenue declined relative to total costs during interest capping period owing to interest capping. This confirms banks focus on strategies such as restructure, reorganization and digitization during interest cap period in order to sustain performance. The study's findings are in line with a 2013 South African study by Maredza & Ikhide, which demonstrated that environmental instability, such as a low interest rate environment, was a significant contributor to bank inefficiency. The standard deviation showed that the variation in efficiency levels was more during interest capping period than pre-interest cap period. The maximum and maximum values indicate that different banks have different efficiency levels with more efficient banks (minimum) at 24.5% and 22.9% efficiency levels for pre and post-interest capping period respectively. The maximum indicate that less efficient banks (maximum) are loss making.

The Risk Management (RM) showed the mean before interest capping was 0.0118488, standard deviation 0.0081814, minimum -0.0024367 and maximum 0.0431387 and for post-interest cap the mean was 0.0138713, standard deviation 0.0103531, minimum -0.0128946 and maximum 0.0436536. The risk management

mean was high during the capping period which confirms that the interest capping period was a more risky business environment for banks than the pre-interest cap period. This is corroborated by research by Wang et al. (2016) and Dries et al. (2022), which showed that the growth of the prime market for risk was closely related to changes in the macroeconomic environmental factors, such as a decline in interest rates. Standard deviation was high during the interest rate capping period which implies that banks faced different sources of risk such as loan defaults and inability to finance small and medium enterprises because they were considered risky. The maximum indicator showed that the risk indicator was the same for both periods while the differences in the minimum indicator showed that banks were faced with a more risky business environment during interest capping period.

The data on bank interest rate (IR) which is a moderator showed that the average interest rate declined to 13.06667 during interest capping period compared to pre-interest cap period which was high at 16.6333. The decline was as a result of the Kenyan government directive to regulate the cost of commercial credit by imposing a government cap on the rates. The variations in the maximum rates and minimum rates indicate that different banks were lending at different rates during both periods. However, the standard deviation showed that the variation was insignificant during both periods.

Table 4.1: Descriptive statistics of Variables

Variable |Obs	Mean	Std. Dev.	Min	Max
Pre-capping period (2013-2015)				
ROA | 105	.0858541	.0264693	.0376127	.148527
BL | 105	.7850533	.1305898	.4721417	1.07685
BS | 105	10.56139	1.323079	8.218787	13.23228
PD | 105	.2324656	.1101513	.0479134	.540553
BE | 105	.6776054	.2591698	.2454819	1.376033
RM | 105	.0118488	.0081814	-.0024367	.0431387
M | 105	16.63333	.5012804	16.1	17.3
Mixed Period (2016)				
ROA | 35	.0845266	.0256983	.0273109	.1313245
Post-capping period (2017-2019)				
ROA | 105	.0720414	.0215203	.0253048	.1120971
BL | 105	.7521941	.1681859	.3747425	1.211755
BS | 105	10.84872	1.413863	8.257126	13.70856
PD | 105	.2766804	.1123433	.0646708	.5631399
BE | 105	.7450336	.2628885	.2291031	1.488087
RM | 105	.0138713	.0103531	-.0128946	.0436536
M | 105	13.06667	.5337939	12.4	13.7

ROA: Return On Asset, **BL:** Bank Liquidity **BS:** Bank Size, **PD:** Product Diversification, **BE:** Bank Efficiency, **RM:** Risk Management and **M:** Interest Rate Capping

Whereas bank financial performance as depicted by ROA declined from 8.5% during pre-interest cap period to 7.2% during post interest cap period, ROA for the mixed period reveals that the impact of interest caps as introduced in September 2016 were instantaneous because its effect in the last quarter of 2016 was sufficient to reduce bank performance as illustrated in Figure 4.1 below:

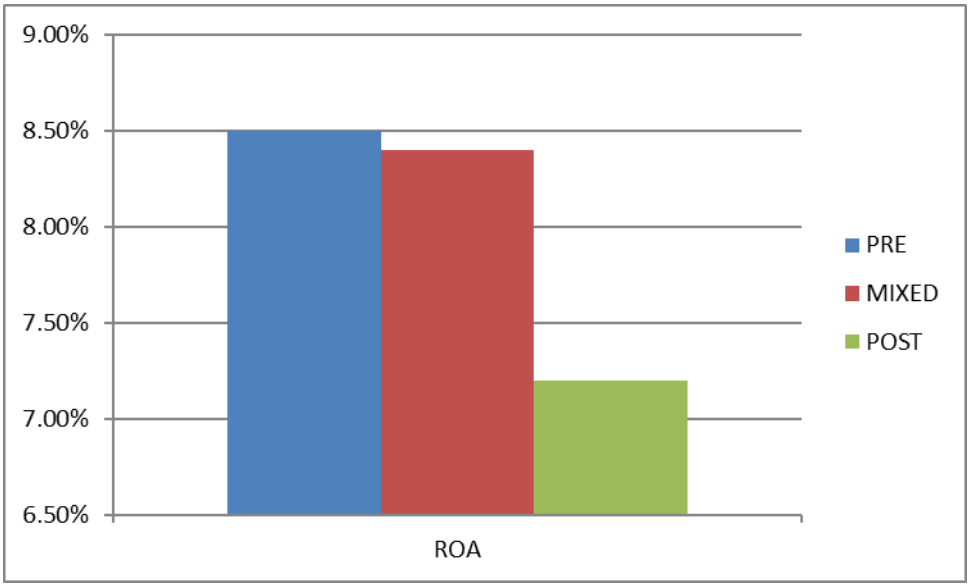

Figure 4.1: Bank performance pre, post & mixed period.

4.2 Diagnostic Tests

The study run several diagnostic tests to evaluate the regression model assumptions and investigated whether or not there were observations with large undue influence on the analysis. The regression tested runs included normality, heteroskedasticity, multicollinearity, serial autocorrelation and unit root tests.

4.2.1 Normality Test

Calculating confidence intervals for forecasts and determining whether model coefficients are significantly different from zero are made more difficult by normality violations. The Shapiro-Wilk test, which determines whether the data comes from a normal distribution, was used to determine the normality. The null hypothesis is disproved and the data tested are not normally distributed if the p value is less than 0.05. The null hypothesis of normally distributed data cannot be rejected if the p value is greater than 0.05. **Table 4.2** showed that the p values for return on assets, bank liquidity, bank size, product diversification bank efficiency, risk management and interest rate were greater than 0.05, therefore, the study failed to reject the null

hypothesis and conclude that the data is normally distributed. Shapiro-Wilk test was used because it has more power to detect the nonnormality and is the most popular and widely used method (Yap & Sim, 2011). The tests were based on the following hypotheses:

H_0 : The data are sampled from a normal distribution

H_1 : The data are not sampled from a normal distribution

Table 4. 1: Shapiro-Wilk W test for normal data

Variable	Obs	W	V	Z	Prob>z
roa	245	0.99560	0.784	-0.565	0.71385
bl	245	0.98949	1,873	1,459	0.07232
bs	245	0.98873	2.007	1.620	0.05266
pd	245	0.98960	1.954	1.434	0.07573
be	245	0.98864	2.024	1.639	0.05065
rm	245	0.99310	1.230	0.481	0.31509
m	245	0.99232	1.369	0.730	0.23264

4.2.2 Multicollinearity Test

When there are two or more independent variables in a multiple regression model that are highly correlated with one another, multicollinearity occurs. High levels of inter-variable correlation weaken the statistical potency of regression models by reducing the precision of the estimated coefficients. As a result, some or all of the regression coefficients have inflated standard errors. The variance inflation factor (VIF) was used to find multicollinearity. When the predictor variables are not linearly related, the variance of the estimated regression coefficients is inflated. This is measured by the variance inflation factor (VIF).

When the VIF is 1, the variables are said to be uncorrelated; when it is greater than 10, the variables are said to be highly correlated. The VIF for each variable in Table 4.3 is less than 10, which indicates that there is no correlation between any of the

independent variables. Additionally, the tolerance values reveal that all of the variables were greater than 0.1, ruling out multicollinearity between the study's exogenous variables.

Researchers like Salmeron et al. (2019) have demonstrated that the presence of multicollinearity is indicated by a VIF greater than or equal to 10, while Jamal (2017) stated that a tolerance value of 0.10 is advised as the minimum level of tolerance.

Table 4.3: Variance Inflation Factor

Variable	VIF	1/VIF
rm	9.65	0.103625
m	8.03	0.124566
bs	2.83	0.353907
be	1.65	0.604844
pd	1.27	0.789788
bl	1.23	0.815118
Mean VIF	4.11	

4.2.3 Homoskedasticity Test

The homoscedasticity assumption is crucial to linear regression models. According to homoskedasticity, the variance of random error is fixed at the same value for all observations. The classical linear regression model's random errors are heteroskedastic when they are not homoskedastic (Petrovi, 2017). As a result, it is a situation in which the random disturbance in the relationship between the independent variables and the dependent variable occurs when the size of the error term varies across independent variable values and is the same for all independent variable values. The degree of heteroskedasticity affects how much the homoscedasticity assumption is violated. The homoscedasticity was assessed using the Breusch-Pagan test. The chi-squared distributed statistic produced by the Breush-Pagan test is 2.59 for your set of data. The chi-squared test yields a p-value, and if the p-value is less

than 0.05, the null hypothesis is typically rejected. The alternative hypothesis is heteroskedasticity, and the null hypothesis is homoskedasticity. Table 4.4 showed that the p value is greater than 0.05 therefore the study failed to reject the null hypothesis and conclude homoscedasticity. This result corresponds to the research by Miller (2013), Ng'ang'a (2017) & Mironga (2019).

Table 4.4: Breusch-Pagan Test for Heteroskedasticity

Ho:	Constant variance
	Variables: fitted values of ROA
chi2(1)	= 2.59
Prob > chi2	= 0.1076

4.2.4 Independence Test

There is no correlation between successive residuals, which is one of the basic tenets of linear regression. In other words, it is assumed that the residuals are independent. The standard errors of the coefficients in a regression model are likely to be underestimated when this presumption is violated, leading to predictor variables being regarded as statistically significant when they are not. The Wooldridge test was used in the study to validate this presumption. A statistical test called the Wooldridge test for independence in panel data is employed in econometrics to determine whether serial correlation exists in the panel data. When the error terms in a regression model are correlated over time, a panel data analysis assumption is broken, leading to serial correlation, also known as autocorrelation.

Using panel data techniques, such as fixed or random effects, to estimate the model, followed by regressing the residuals on the lagged residuals, is how the Wooldridge

test for independence is conducted. The alternative hypothesis is that there is serial correlation in the errors, contrary to the null hypothesis that there is not.

The test statistic, which has an F-distribution under the null hypothesis, is the F-statistic resulting from the regression of the residuals on the lagged residuals. The null hypothesis is rejected and serial correlation is said to exist if the p-value associated with the F-statistic is less than the selected significance level, typically 0.05. Table 4.5 showed that the p value was greater than 0.05 indicating that the study failed to reject the null hypothesis concluded absence of autocorrelation. This is consistent to the results obtained by Capuno *et al.* (2019) & Nguyen *et al.* (2020).

Table 4.5: Wooldridge test for autocorrelation in panel data

F(1,	34)	=	1.114
	Prob > F	=	0.2986

4.3 Correlation Analysis

The association and strength of a linear relationship between two variables are calculated using correlation analysis. It determines how much one variable will change as a result of a change in the other. A strong relationship between the two variables is indicated by a high correlation, whereas a weak relationship is indicated by a low correlation. Between two variables, there may be a positive correlation, a negative correlation, or no correlation at all. When two variables move in the same direction and have a positive correlation, this means that as one variable rises, the other rises as well, and vice versa. When there is a negative correlation between two variables, it means that the variables are moving in the opposite directions; as one variable rises, the other falls, and vice versa. There is no correlation when one variable does not have an impact on the other.

The strength and direction of the relationship between variables were calculated using the Pearson correlation coefficient in the study. The Pearson correlation coefficient (r) ranges from -1 to 1. The strength of the linear relationship between the two variables increases as r moves further away from zero, and the direction of the relationship is determined by the sign of r. If r was positive, both variables tended to rise as one increased if r was positive. If r was negative, the tendency was for the other variable to decrease as one increased. According to Von & Wiedermann (2014), a perfect linear relationship (r=-1 or r=1) means that a linear function of one variable can perfectly explain the other.

Table 4.5 showed that there existed a significant weak positive relationship between bank liquidity and return on assets (r= 0.0537, p=0.000). This means that bank's strategy to increase the proposition of liquidity position owing to reduced lending significantly increases return on assets. The results are in line with studies by Wambu (2013) and Osborne et al. (2012), which looked at commercial banks' liquidity strategies and discovered that during a crisis, banks will increase their liquidity position to increase profitability.

The association between bank size and return on assets showed a strong negative and significant relationship (r= 0.6846, p=0.000). This means that banks consolidation strategies to increase size and growth advantages significantly reduced return on assets due to high cost outlay involved in consolidation. The findings are consistent with earlier research by Michael (2015) and Antoun et al. (2018), which demonstrated that large banks' complexity makes it harder to manage risk, control costs, and maintain operational efficiency, which can ultimately have a negative impact on performance.

The association between product diversification and return on assets reveals a strong negative and significant relationship (r= -0.5367, p= 0.000). This means that an increase in banks engagement in product diversification strategies reduced banks performance. This result is comparable to studies by Phung (2016) and Doaei, et al. (2015), which demonstrated that diversification has a detrimental impact on firm performance.

The association between bank efficiency and return on assets reveals a strong positive and significant relationship (r= 0.5963, p= 0.000). Thus, it can be argued that an increased pursuit of efficiency strategies by banks led to improved return on assets. This result is consistent with the conclusions reached by Baik et al. (2013), Gill et al. (2014), and Jakada & Aliyu (2015) that greater efficiency results in better financial performance.

The association between risk management and return on assets showed a moderately strong positive and significant relationship (r=0.4664, p=0.000). This means that an increase in the level of risk management implementation strategies by banks positively contributed to the increase in return on assets. These findings support earlier studies by Teoh, et al. (2017), Silva & Chan (2014), and Waweru & Kisaka (2013) that found a beneficial relationship between risk management and performance.

The association between interest rate and return on assets showed a moderately weak positive and significant relationship (r= 0.1357, p=0.000). This implies that return on assets increases with the increase in interest rates. This is in line with earlier studies by Genay & Podjasek (2014), Borio et al (2015), and Alessandri & Nelson (2015), which found a correlation between higher interest rates and better bank performance.

Table 4.6: Correlation Matrix

	roa	**bl**	**bs**	**pd**	**be**	**rm**	**m**
roa	1.000						
bl	0.0537	1.0000					
bs	-0.6846	0.2226	1.0000				
pd	-0.5367	0.1032	0.7026	1.0000			
be	0.5963	0.0924	-0.3876	-0.1875	1.0000		
rm	0.4664	0.10000	-0.3107	-0.2211	0.5203	1.0000	
m	0.1357	0.1174	-0.0883	-0.0414	0.3254	0.9049	1.0000

ROA: Return On Asset**, BL:** Bank Liquidity **BS:** Bank Size, **PD:** Product Diversification, **BE:** Bank Efficiency, **RM:** Risk Management and **M:** Interest Rate Capping

4.4 Panel Data Analysis

A dataset that tracks an entity's behavior over time is called panel data. Cross-sectional or longitudinal time series data are other names for it. This study examined 35 banks' actions between 2013 and 2019 before and after interest rate capping. The study was able to take into account factors that could not be observed or measured, such as variations in banking practices or factors that changed over time but not across entities, thanks to the use of panel data.

4.4.1 Unit Root (Stationary) Test

If the mean and variance of a time-series data remain constant over time, the data is said to be stationary (Gujarati, 2013). Unit roots can be used to determine some characteristics of a series' underlying data generation process. The series fluctuates around a fixed long-run mean when there is no unit root (stationary), which suggests that the series has a finite variance that is independent of time. On the other hand, non-stationary series have a time-dependent variance and have no tendency to return to a long-run deterministic path. Because random shocks have long-lasting effects on non-stationary series, the series behaves randomly.

The dickey-fuller test (1979) was used in the study to confirm stationarity. Because it is based on regression and is simple to calculate, this test has maintained its popularity over time. In general, the null hypothesis is the absence of a unit root, and the alternative hypothesis is stationarity. The null hypothesis, which states that the stationarity of the panel data holds, is rejected by a p-value of less than 0.05 when the hypotheses were tested at a 5% significance level.

The table 4.6 showed that the p-values for every variable was less than 0.05, therefore, the null hypothesis for unit root was rejected and the study concluded that there was stationarity in time series data. This signifies that the means and variances in the data do not depend on time, hence the application of the regression model produces meaningful results (Gujarati, 2013).

Table 4.7: Dickey-Fuller Test for Unit Root

Variable	Test statistic	p-value
Return On Assets	-6.870	0.000
Bank Liquidity	-6.364	0.000
Bank Size	-6.790	0.000
Product Diversification	-7.447	0.000
Bank Efficiency	-6.91	0.000
Risk Management	-10.337	0.000
Interest Rate	-10.568	0.000

4.4.2 Fixed Effects Model

According to fixed effect models, the relationship between the explanatory and response variables is constant or fixed across all observations (Torres-Reyna, 2007). This indicates that distinctive personal characteristics of people are correlated with independent variables and do not change over time.

The table 4.7 presented the fixed effects regression results and showed that the overall model was significant and that product diversification, bank efficiency, risk management and interest rate explained 67.68% variation in return on assets. Specifically, product diversification had a positive and significant (β= 0.0029789, p= 0.000) effect on return on assets, suggesting that a unit increase in product diversification strategies increases return on assets significantly by 0.0029789. Bank efficiency showed a positive and significant (β= 0.2829227, p= 0.000) effect on return on assets. This indicates that a unit increase in bank efficiency strategies increases return on assets by 0.2829227. Risk management had a positive and significant (β= 20.55832, p= 0.000) effect on return on assets, inferring that a unit increase in risk management strategies significantly increases return on assets by 20.55832. Interest rate had a positive and significant (β= 1.751561, p= 0.000) effect on return on assets, displaying that a unit increase in interest rate capping significantly increases return on assets by 1.751561.

Table 4.8: Fixed-effects (within) regression

```
                                  Number of obs      =       245
Group variable: BANK              Number of groups   =        35
R-sq:  within  = 0.6768           Obs per group: min =         7
     Between   = 0.7615                        avg =       7.0
     Overall   = 0.7084                        max =         7
                                  F(4,206)           =    107.85
corr(u_i, Xb)  = 0.3530           Prob > F           =    0.0000
------------------------------------------------------------------------------
         ROA |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          PD |   .0029789    .000371     8.03   0.000     .0037103    .0022474
          BE |   .2829227   .0527694     5.36   0.000     .1788853    .3869601
          RM |   20.55832   2.696699     7.62   0.000     15.24165    25.87498
           M |   1.751561   .2096187     8.36   0.000     2.164834    1.338288
       _cons |   .0755761   .0037627    20.09   0.000     .0681578    .0829945
-------------+----------------------------------------------------------------
     sigma_u |  .01167995
     sigma_e |  .00898149
         rho |  .62841312   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(34, 206) =     8.49          Prob > F = 0.0000
```

4.4.3 Random Effects Model

The random effect model assumes that the individual or group effects are uncorrelated with other independent variables when estimating the coefficients (Torres-Reyna, 2007). The model is time invariant and allows for heterogeneity, but the relationship between the individual specific effect and the independent variables is not known.

Table 4.8 presents the random effect regression results. The results implied that the overall model was significant (p= 0.000) and that product diversification, bank efficiency, risk management and interest rate capping explained 67.18% variation in return on assets. Product diversification had a positive and significant (β= 0.0027813, p= 0.000) effect on return on assets, implying that a unit increase in product diversification significantly increases return on assets by 0.0027813. Bank efficiency had a positive and significant (β= 0.2841871, p= 0.000) effect on return on assets, demonstrating that a unit increase in bank efficiency significantly increases return on assets by 0.2841871. The risk management had a positive and significant (β= 26.29499, p=0.000) effect on return on assets signifying that a unit increase in risk management significantly increases return on assets by 26.29499. Interest rate had a positive and significant effect (β= 2.140916, p= 0.000) on return on assets, confirming that a unit increase in interest rate increases return on assets significantly by 2.140916.

Table 4.9: Random-effects GLS regression

		Number of obs	=	245	
Group variable: BANK		Number of groups	=	35	
R-sq: within	= 0.6718	Obs per group: min	=	7	
between	= 0.7906	avg	=	7.0	
overall	= 0.7271	max	=	7	
		Wald chi2(4)	=	527.61	
corr(u_i, X)	= 0 (assumed)	Prob > chi2	=	0.0000	

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
PD	.0027813	.0003435	8.10	0.000	.0034545	.002108
BE	.2841871	.0459064	6.19	0.000	.1942123	.374162
RM	26.29499	2.691558	9.77	0.000	21.01963	31.57035
M	2.140916	.2107534	10.16	0.000	2.553985	1.727847
_cons	.0736889	.00337	21.87	0.000	.0670839	.0802939

sigma_u	.00697989
sigma_e	.00898149
rho	.37653878 (fraction of variance due to u_i)

4.4.4 Hausman Test

Between the Fixed Effects Model and the Random Effects Model, the Hausman test (1978) was used to determine which model was preferred (Sutikno et al., 2017). In contrast to the alternative hypothesis (Ha), which states that the preferred model is fixed effects, the null hypothesis (Ho) states that the preferred model is random effects. If the Hausman statistic was less than its critical value, the null hypothesis was rejected. The null hypothesis was rejected if the Hausman statistic was less than its critical value, indicating that the fixed effect model was the preferred model to be used in the regression analysis. The hypotheses were tested at a 0.05 significance level.

A Hausman specification test was performed following the execution of the two regression models to select between the fixed and random effects estimator to be used in the ensuing regressions.

The table 4.9 presents the hausman results which indicate that the p-value was less than 0.05 meaning that the study rejected the null hypothesis and concluded that the fixed effect model was the preferred model for running the regression effects.

Table 4.10: Hausman Test

	---- Coefficients ----			
	(b) Fixed	(B) random	(b-B) Difference	sort (diag (V_b-V_B)) S.E.
PD	.0029789	.0027813	.0001976	.0001402
BE	.2829227	.2841871	-.0012645	.0260234
RM	20.55832	26.29499	-5.736672	.1664318
M	1.751561	2.140916	.3893549	.

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2 (4) = (b-B)'[(V_b-V_B) ^ (-1)] (b-B)
= 31.84
Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)

4.5 Regression Analysis

Determining the moderating impact of interest capping on bank strategies and bank performance was the study's main goal. To examine the direct and moderating effects of the independent and moderating variables on financial performance, respectively, a hierarchical regression model with six models was used. In a hierarchical regression, the dependent and controls variables were regressed in the first model, the dependent, controls, independent, and moderator variables were regressed in the second model, and the dependent, controls, independent, and moderator were regressed in models four through six by gradually introducing the interactions to test the hypotheses. The Hausman's tests used to distinguish between random and fixed effects suggested that all

models adopt fixed effects models. The null hypothesis is rejected when the p-value is less than 0.05, which was the level of significance used to test the research hypotheses.

4.5.1 Control Variables and Bank Financial Performance

The study run a regression model to determine how bank liquidity (BL) and bank size (BS) affected bank financial performance for the period 2013-2019. The table 4.10 regression results indicated that the overall model was significant and that bank liquidity and bank size explained 43.04% variation in bank financial performance. Bank liquidity had a positive and significant (β= 0.0130589, p= 0.050) effect on bank financial performance. These results showed that a unit increase in bank liquidity caused an increase in bank financial performance by 0.010589 which implies that an increase in bank liquidity resulted in an increase in bank performance. The results are in line with those of Islam & Nishiyama (2016) and Alshatti (2014), who came to the same conclusion about the relationship between bank profitability and liquidity.

Bank size had a negative and significant (β= -0.0000718, p= 0.000) effect on bank financial performance. The results showed that a unit increase in bank size caused a decrease in bank financial performance by 0.0000718 which implies that an increase in bank size resulted in a decrease in bank performance. These results are consistent with research by Antoun et al. (2018) and Murthy (2015), which demonstrated that the size of the bank had an adverse impact on bank profitability.

Table 4.11: Control Variables and Bank Financial Performance

Period 2013-2019	**Variable** **Firm Financial Performance**	**Coef.**	**p-value**
	Bank Liquidity	0.010589	0.050
	Bank Size	-0.0013355	0.000
	Constant	0.0836463	0.000
Prop>F= 0.000			
R-squared(within)= 0.4304			

4.5.2 Direct Variables and Bank Financial Performance

A fixed effects regression model was conducted for the effects of product diversification (PD), bank efficiency (BE), risk management (RM) on bank financial performance while controlling for the effects of Bank Size (BS) and Bank Liquidity (BL) during the period 2017-2019. The results in table 4.11 showed that the overall model was significant ($p<0.05$). The R-Square (0.70.60) for the overall model means that the variables account for up to 70.60% of the variations in bank financial performance.

Product diversification had a negative and significant effect ($\beta= -0.021718$, $p= 0.000$) on bank financial performance. The p-value was less than 0.05 indicating that product diversification strategies had a significant effect on bank financial performance. Moreover, the negative coefficient indicates that a unit increase in product diversification strategies decreased bank financial performance by 0.021718 units. The findings of Phung (2016) and Doaei et al. (2015), who established that diversification has a negative and significant effect on firm performance, are in line with the findings of this study.

Bank efficiency had a positive and significant effect ($\beta=0.2696149$, $p= 0.000$) on bank financial performance. The p-value was less than 0.05 indicating that bank efficiency strategies had a significant effect on bank financial performance. Moreover, the positive coefficient indicates that a unit increase in bank efficiency strategies increases bank financial performance by 0.2696149 units. Overall, the findings are in line with those of Baik et al. (2013), Gill et al. (2014), and Jakada & Aliyu (2015), who found that efficiency had a significant favorable impact on firm performance.

Risk Management had a positive and significant effect ($\beta= 19.6547$, $p= 0.000$) on bank financial performance. The p-value was less than 0.05 indicating that risk

management strategies had a significant effect on bank financial performance. Moreover, the positive coefficient indicates that a unit increase in risk management strategies increased bank financial performance by 19.6547 units. Overall, the findings are in line with those of Baik et al. (2013) and Gill et al. (2014), who demonstrated that risk management practices and firm performance are positively correlated.

The Interest Rate (IR) had a negative and significant effect (β= -1.68053, p= 0.001) on bank financial performance. The p-value was less than 0.05 indicating that changes in interest rate had a significant effect on bank financial performance. Moreover, the negative coefficient indicates that a unit increase in interest rate decreased bank financial performance by 1.68053 units. Overall, the findings are in line with those of Irungu (2013), Borio et al. (2015), and Alessandri & Nelson (2015), who came to the conclusion that bank profitability falls as interest rates fall and vice versa.

Table 4.12: Direct Variables and Bank Financial Performance

Period: 2013-2019	**Variable**		
	Firm Financial Performance	**Coef.**	**p-value**
	Bank Liquidity	0.0139593	0.001
	Bank Size	-0.0000203	0.001
	Product Diversification	-0.021718	0.000
	Bank Efficiency	0.2696149	0.000
	Risk Management	19.6547	0.000
	Interest Rate Capping	-1.68053	0.000
	Constant	0.065758	0.000
Prop>F= 0.000	**R-sq (within)= 0.7060**		

4.5.3 Conditional Direct effects and Bank Financial Performance

The study conducted a fixed effect regression to determine the moderating effect of interest rate capping on the relationship between product diversification, bank efficiency and risk management on bank financial performance. The table 4.12 presents conditional effects of product diversification, bank efficiency and risk management on bank financial performance.

The moderation results showed that the overall model for 2013-2019 with p=0.000 was significant. This implies that interest rate moderation significantly affected the relationship between bank strategies (Product Diversification, Bank Efficiency and Risk Management Strategies) on bank financial performance. The R square (0.79.95) indicates that the interaction model explains up to 79.95% of the variation in financial performance up from previous model's 70.60% without interaction. This confirms an R square change of ($\Delta R2$ =9.35%) implying that the variance accounted for with the interaction is significantly more than the variance accounted for without the interaction. This indicates that interest rate capping significantly moderates the relationship between bank strategies and bank financial performance. The findings are in line with those of Borio et al. (2015) and Alessandri & Nelson (2015), who came to the conclusion that interest rates are a component of the macroeconomic environment that influences firm profitability.

The moderation effect of interest capping on the relationship between Product Diversification (PD) and bank financial performance had a positive and significant effects (β= 0.1223164, p= 0.000) on bank financial performance between 2013-2019. The R squared (R2 =0.7474) indicates that the model accounted up to 74.74% of the variation in bank financial performance. This presents an increase from 70.60% from

the previous model signifying an R squared change (ΔR2 = 4.14%) meaning the variance accounted for with the interaction is significantly more than the variance accounted for without the interaction. Thus, the beta coefficient is different from zero, the model is significant and there is a significant R2 change. This implies that interest capping had a significant moderating effect on the relationship between product diversification and bank financial performance. The majority of the findings highlight how businesses are motivated to diversify in response to changes in macroeconomic factors like interest rate capping in order to maximize their pool of resources and improve performance (Cornett et al., 2002; Wan et al., 2011).

The moderation effect of interest capping on the relationship between Bank Efficiency (BE) and bank financial performance had a negative and significant effects (β= -18.20388, p= 0.000) on bank financial performance between 2013-2019. The R squared (R2 =0.7968) indicates that the model accounts up to 79.68% of the variation in bank financial performance. This presents an increase from 74.74% from the previous model signifying an R squared change (ΔR2 = 4.94%) meaning the variance accounted for with the interaction is significantly more than the variance accounted for without the interaction. Thus, the beta coefficient is different from zero, the model is significant and there is a significant R2 change. This implies that interest capping had a significant moderating effect on the bank efficiency and bank financial performance. Overall, the findings support the findings of research by Warrad & Omari (2015) and Maredza & Ikhide (2013) that interest caps were a significant contributor to bank inefficiency and that the benefits of bank efficiency strategies were not immediately apparent.

The moderation effect of interest capping on the relationship between Risk Management (RM) and bank financial performance had a negative and significant effects (β= -99.21179, p=0.034) on firm financial performance between 2013-2019. The R squared (R2 =0.7995) indicates that the model accounted up to 79.95% of the variation in bank financial performance. This presents an increase from 79.68% from the previous model signifying an R squared change (ΔR2 = 0.27%) meaning the variance accounted for with the interaction is significantly more than the variance accounted for without the interaction. Thus, the beta coefficient is different from zero, the model is significant and there is a significant R2 change.

This implies that interest capping had a significant moderating effect on the relationship between Risk Management and bank financial performance. The research by Shima et al. (2013) and Mojtaba & Davoud (2017), whose findings demonstrate a negative and significant relationship between risk management strategies and bank performance, is in line with these findings. Figures 4.2, 4.3 and 4.4 present the modgraphs for the interaction and the figures illustrate that bank's engagement in Product Diversification, Bank Efficiency and Risk Management Strategies enhanced performance. This means that whereas interest cap moderation on Bank Efficiency and Risk Management strategies had a negative or no effect respectively on performance, banks engagement in these two strategies increases bank performance in the long-term akin to product diversification strategies.

Table 4.13: Conditional Direct Variables and Bank Financial Performance

Period 2013-2019	**Variable**		
	Firm Financial Performance	**Coef.**	**p-value**
	Bank Liquidity	0.0110538	0.001
	Bank Size	-0.0000171	0.001
	Product Diversification	-0.0022015	0.000
	Bank Efficiency	0.4331749	0.000
	Risk Management	40.18176	0.000
	Interest Rate Capping	-2.459915	0.000
	Product Diversification: Interest Rate Capping	0.1019856	0.000
	Bank Efficiency: Interest Rate Capping	-15.53521	0.000
	Risk Management: Interest Rate Capping	-99.21179	0.034
	Constant	0.0565682	0.000
Prop>F= 0.000	**R-sq (within)= 0.7995**		

4.5.4 Modgraph

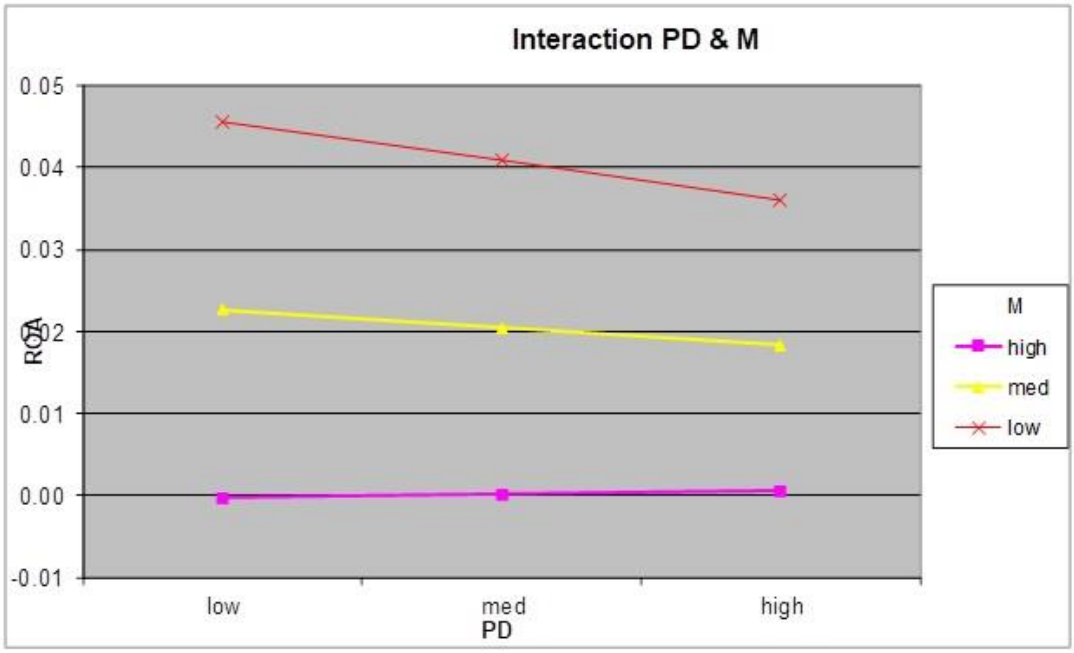

Figure 4.2: Modgraph PD, M & ROA

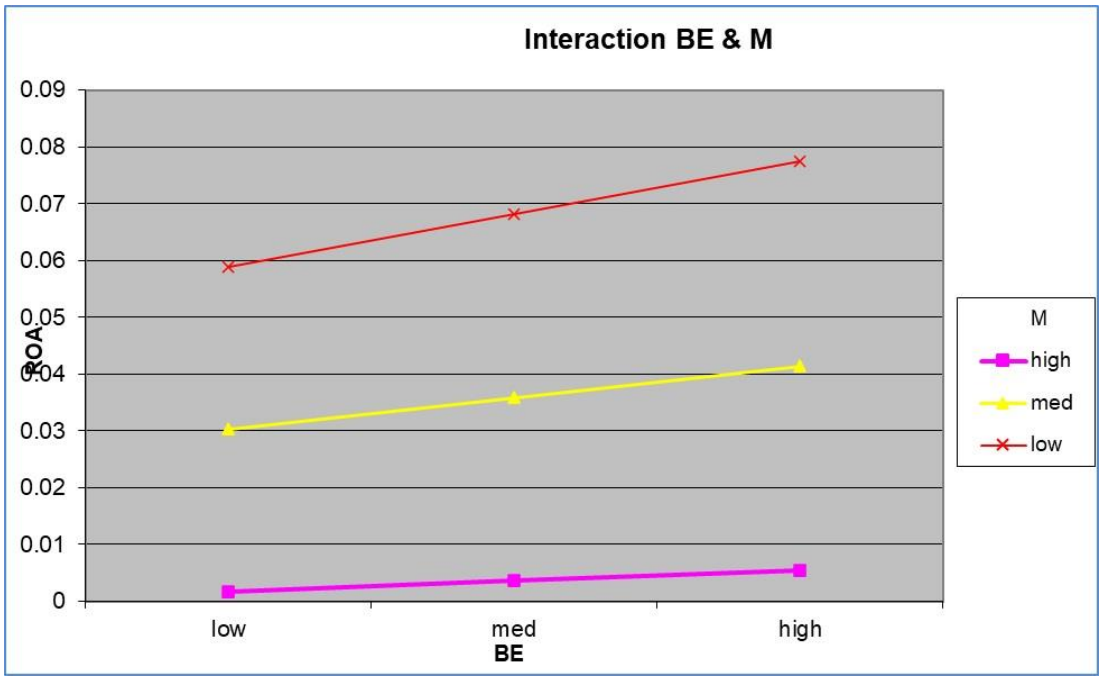

Figure 4.3: The Modgraph BE, M & ROA

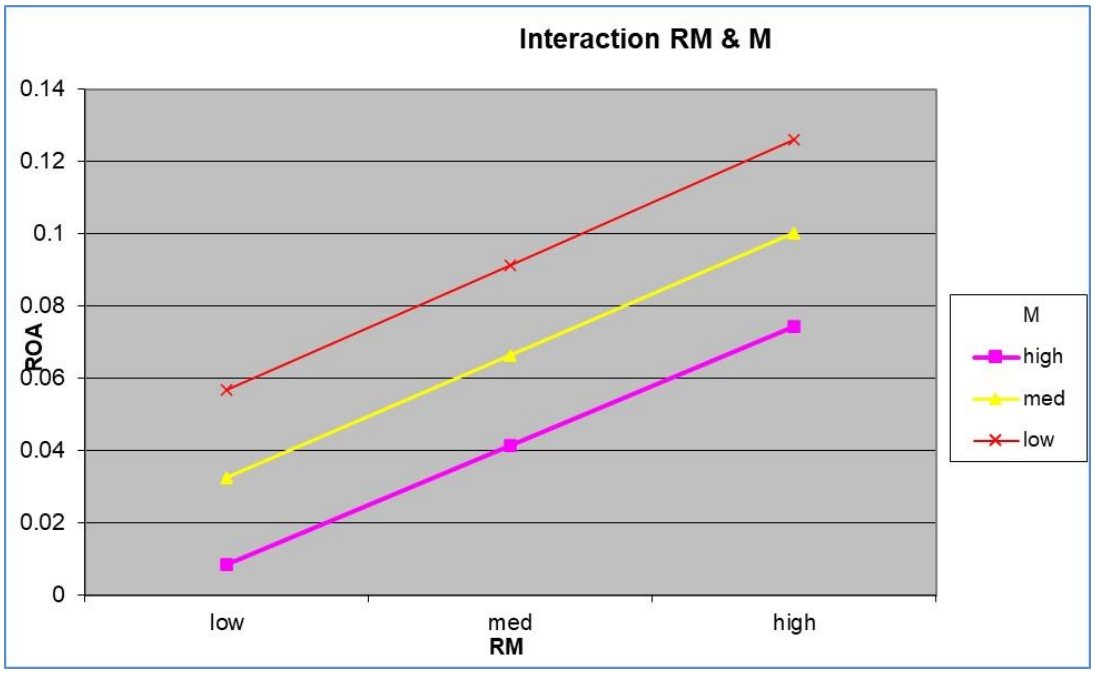

Figure 4.4: The Modgraph RM, M & ROA

4.6 Hypothesis Testing

The table 4.13 below present results of the hypotheses testing for the study and subsequently the discussion of the results:

Table 4.14: Summary of Hypothesis Test

Hypothesis	Test Statistic	Decision Rule
H_{01}: Product diversification has no significant effect on bank financial performance.	β =-0.002, p<0.05	Reject
H_{02}: Bank efficiency has no significant effect on bank financial performance.	β = 0.433, p<0.05	Reject
H_{03}: Risk management has no significant effect on bank financial performance.	β = 40.182, p<0.05	Reject
H_{04a}: Interest cap has no significant moderating effect on product diversification-bank financial performance relationship.	β = 0.102, p<0.05	Reject
H_{04b}: Interest cap has no significant moderating effect on bank efficiency-bank financial performance relationship.	β = -15.535, p<0.05	Reject
H_{04c}: Interest cap has no significant moderating effect on risk management-bank financial performance relationship.	β = -99.212, p>0.05	Failed to Reject

The table 4.14 above present results of the hypotheses testing for the study as discussed below:

H_{01}: Product diversification has no significant effect on bank financial performance

The analysis showed that Product diversification (PD) had a negative and significant effect on bank financial performance during the period 2013-2019. The regression coefficient of PD at -0.0022015 is negative and significant at p-value of 0.000 which

is less than 0.05. This implies that the study rejected the null hypothesis and concluded that product diversification had a significant effect on bank financial performance.

The research by Phung (2016), Doaei, et al. (2015), which demonstrated that diversification had a negative and significant impact on firm performance, is consistent with this finding.

H_{02}: Bank efficiency has no significant effect on bank financial performance

The results showed that Bank Efficiency (BE) had a positive and significant effect on bank financial performance during the period 2013-2019. The regression coefficient of BE at 0.4331749 is positive and significant at p-value of 0.000 which is less than 0.05. This denotes that the study rejected the null hypothesis and concluded that Bank Efficiency had a significant effect on bank financial performance.

This finding backs up earlier research by Jakada & Aliyu (2015), Gill et al. (2014), and Baik et al. (2013) who noted that efficiency had a favorable and significant impact on firm performance.

H_{03}: Risk management has no significant effect on bank financial performance

The analysis showed that Risk Management (RM) had a positive and significant effect on firm financial performance during the period 2013-2019. The regression coefficient of RM at 40.18176 is positive and significant at p-value of 0.000 which is less than 0.05. This signifies that the study rejected the null hypothesis and concluded that Risk Management had a significant effect on bank financial performance.

This is consistent with the findings of Pagach & Warr (2010), Waweru & Kisaka (2017), and Teoh et al. (2017), who found a significant and positive relationship between risk management and firm performance.

H_{04a}: Interest cap has no significant moderating effect on product diversification-bank financial performance relationship

The moderation of interest rate capping on the relationship between product diversification and bank financial performance revealed a positive and significant effect on bank financial performance during the period 2013-2019 with regression coefficient at a positive value of 0.1019856 and significant at a p-value of 0.000 which is less than 0.05. This confirms that the study rejected the null hypothesis and concluded that the interest rate capping had a significant moderating effect on the relationship between product diversification and bank financial performance.

The results are consistent with those of Geney & Podjasek (2014) and Irungu (2013), who argued that the macroeconomic environment resulting from a low interest rate environment carries a greater weight in determining firm profitability.

H_{04b}: Interest cap has no significant moderating effect on bank efficiency-bank financial performance relationship

The results demonstrated that interest capping significantly moderates the relationship between bank efficiency and bank financial performance with a regression coefficient at a negative value of -15.53521 and a p-value of 0.000. The p-value being less than 0.05 connotes that the study rejected the null hypothesis and concluded that interest rate capping had a significant moderating effect on the relationship between bank efficiency and bank financial performance.

This result is in line with the claims made by Maredza & Ikhide (2013), who maintain that one of the main causes of bank inefficiency is environmental turbulence brought on by changes in macroeconomic factors like interest rate capping.

H_{04c}: Interest cap has no significant moderating effect on risk management-bank financial performance relationship

The moderation results showed that Risk Management (RM) had a negative but not significant effect on firm financial performance during the period 2013-2019. The regression coefficient of RM at -99.21179 is negative and not significant at p-value of 0.099 which is greater than 0.05. This implies that the study failed to reject the null hypothesis and concluded that interest cap had no significant moderating effect on the relationship between risk management and bank financial performance.

The results support studies by Agustina & Baroroh (2016) and Ballantyne (2013) that claimed there was no connection between the use of risk management strategies and a company's financial performance.

4.7 Discussion of the Findings

The descriptive statistics on Return on Asset (ROA) affirm a decline in bank performance following implementation of interest capping in Kenya. There was a decline in the mean of ROA from 0.0858551 during the pre-interest capping period (2013-2015) to 0.0720414 during post-interest cap period (2017-2019). The decline in performance signifies that the capping of interest rate during post-interest cap period to 13% from as high as 16.6% during pre-interest cap period influenced bank financial performance. These statistics imply that changes in interest rates in the banking environment affect bank performance. Implicitly, this is an indicator that banks changed their lending strategy by cutting on lending which reduced bank profitability.

This view is supported by research from Borio et al. (2015) and Irungu (2013), who found that bank income declines when interest rates fall and vice versa.

The descriptive statistics on Bank Liquidity (BL) confirm an increase in the liquidity position of banks subsequent to the implementation of interest capping in Kenya. Bank Liquidity (BL) improved from a mean of 0.7850533 during pre-interest cap period (2013-2015) to a mean of 0.7521941 during post-interest cap period (2017-2019). This implies that banks adopted a hold strategy on deposits by curtailing lending of loans. This position is supported by DeYoung et al. (2018), who described commercial banks' liquidity strategies and found that, in response to a decline in interest rates, banks shift away from loans and increase their liquidity positions.

The descriptive statistics on Bank Size (BS) reveal that banks grew in size following introduction of interest caps in Kenya. The mean bank size increased to 10.84872 during interest capping period from a mean of 10.56139 during pre-interest capping period. Since banks adopted a reduce-lending strategy owing to the low interest rate environment, the increase in bank size during interest capping period is attributed to bank consolidation through Mergers & Acquisition and absorption of struggling business models such as smaller banks by larger banks. This means that with limited prospect of loan expansion due to low interest rates, asset growth via mergers and acquisitions increasingly became attractive to banks during interest capping period. This implies that more banks were favoring large transformational deals such as buyout and corporate restructuring to achieve greater size advantages in the face of continued low interest. This outcome is consistent with those of Jagersma (2005), Sherman (2010), and Awan & Mahmood (2015) who showed that organizations undergoing mergers or acquisitions during difficult economic times should prioritize

survival because it is related to combining resources, technology, and skills in an effort to maintain firm performance.

The descriptive statistics on Product Diversification (PD) demonstrate an increase in revenue from commission or fee generating activities during interest capping period in contrast to the reliance on banks core business of lending focusing on interest income generation during pre-interest capping period. The mean product diversification increased to 0.2766804 during interest capping period from a mean of 0.2324656 during pre-interest capping period. This implies that Kenyan banks increasingly shifted away from the traditional core banking model focusing on interest income generation through deposit taking and lending, towards a banking model that increasingly focuses on fee generating activities such as service fees, mobile banking commission, ATM transaction fees, bancassurance and brokerage activities during interest capping period. This is consistent with studies conducted by Baele et al. (2007), Engle et al. (2014), and Kohler (2015), which stressed that banks will adopt a diversification strategy in an effort to maximize their pool of resources and increase economies of scale following economic shocks such as a low interest rate environment.

The mean Bank Efficiency (BE) statistic showed that banks were less efficient during interest capping period as compared to pre-interest cap period. The mean bank efficiency ratio increased to 0.7450336 during interest capping period from a mean of 0.6776054 during pre-interest capping period. An increase in the ratio is an indication that the banks were more inefficient during interest capping period in comparison with the pre-interest capping period because the higher the ratio, the more inefficient is the bank. This signifies that banks total revenue declined relative to total costs

during interest capping period on account of low interest rate caused by interest capping. Further, the increase in cost is a confirmation of banks focus on capital intensive strategies such as restructures, reorganization, digitization and adoption of diversification strategies during interest cap period in order to sustain performance. The study's findings are consistent with those of Maredza & Ikhide (2013), who conducted research in South Africa and found that environmental instability, such as a low interest rate environment, is a significant contributor to bank inefficiency.

The mean Risk Management (RM) statistic affirms that interest capping period was a more risky and difficult credit operating environment for banks than during the pre-interest capping period. Evidently, the mean Risk Management statistic increased from 0.0118488 during pre-interest capping period to 0.0138713 during interest capping period. This implies that bank loan-loss provisions increased relative to total loans during interest capping period due to difficult credit risk operating environment. This is consistent with research conducted by Li & Zou (2014), who stated that the level of risk that banks assume is one of the most important risks that can affect bank performance, particularly in the wake of a challenging business environment like a decline in interest rates.

The mean on Interest Rate (IR) which is the moderator revealed that there was a decline in the average applicable interest rate during interest capping period. The mean Interest Rate declined to 13.06667 during interest capping period from a mean of 16.63333 during pre-interest capping period. The decline in mean interest rate confirms that the Kenyan government succeeded in the introduction of interest rate capping policy since the interest rates in Kenya remained relatively low during interest cap period at an average rate of 13% in line with the government’s intention

to protect consumers from predatory lending and excessive interest rates as well as to enhance affordability of credit particularly to the population at the bottom of the pyramid (CBK, 2019). This is supported by studies by Tantri (2018) and Borio et al. (2015), which suggested that monetary policy is a component of the macroeconomic environment, where factors like changes in interest rates are out of the control of businesses, who are forced to comply.

The correlation results showed that there exist a weak positive relationship between Bank Liquidity (BL) and Return on Assets (ROA). The Pearson correlation coefficient for bank liquidity (0.0537) affirmed a positive association with bank financial performance. This implies that banks strategy to hold deposits which subsequently led to increased liquidity position during interest capping period had a positive effect on bank financial performance. The analysis provides evidence that banks strategy to hold on deposits which increases liquidity translates to better bank financial performance in the context of low interest rate environment. The results are consistent with research by Osborne et al. (2012) and Wambu (2013), which attested that banks with better liquidity positions maintain those positions. Therefore, banks should develop a solid liquidity risk management strategy that ensures they have enough liquidity to withstand a variety of stress events, such as an environment with low interest rates.

The correlation between Bank Size (BS) and Return on Assets (ROA) revealed a negative association. The Pearson correlation coefficient for bank size (-0.6846) affirmed a strong negative association with bank financial performance. This signify that as banks engaged in large transformational deals such as buyout and corporate restructuring to increase in size, they encountered diseconomies of scale, which

increased costs per unit of output that result from firm inefficiencies. These inefficiencies arose from increased bureaucracy and difficulty in coordination among different divisions and departments. This is in line with research by Antoun et al. (2018) and Murthy (2015), which found that firm size has an inverse relationship with firm profitability.

The correlation between Product Diversification (PD) and Return on Assets (ROA) displayed a negative association. The Pearson correlation coefficient for Product Diversification (-0.5367) implies a negative association with bank financial performance. This result suggests that the strategies banks adopted to diversify into new product categories during interest capping period had a negative effect owing to higher costs due to the need for additional resources to manage new business lines or product categories. Further, diversification spread resources and attention across a wider range of bank activities, leading to inefficiencies and reduced profitability. This is consistent with the findings of Phung (2016) and Doaei et al. (2015), who found that diversification has a detrimental impact on firm performance.

The correlation between Bank Efficiency (BE) and Return on Assets (ROA) displayed a positive association. The Pearson correlation coefficient for Bank Efficiency (0.5963) implies a positive association with bank financial performance. This is an indication that banks effort to improve efficiency by cutting down costs and streamlining core processes in response to interest cap had a positive impact on bank financial performance. This outcome corroborates research by Dietrich (2010), Gill et al (2014), and Jakada & Alivu (2015), all of which found that emphasizing cost-cutting measures to boost efficiency has a positive impact on businesses' profitability.

The correlation between Risk Management (RM) and Return on Assets (ROA) displayed a positive association. The Pearson correlation coefficient for Risk Management (0.4664) implies a positive association with bank financial performance. The analysis provides evidence that prudent credit risk management positively correlates with profitability. This implies that effective and efficient management of credit risk may result to minimal default and delinquency and hence increases banks' financial performance. Thus, it is critical that banks practice prudent risk management practices to safeguard bank assets in pursuit of improved bank financial performance. The findings support previous studies by Silva & Chan (2014), Ping & Muthuveloo (2015), and Teo et al. (2017) that found a link between risk management and firm performance.

The correlation for the moderator namely Interest Rate (IR) and Return on Assets (ROA) displayed a positive association. The Pearson correlation coefficient for Interest Rate (0.1357) affirms a weak positive association with bank financial performance. This finding implies that an increase in interest rate causes a moderate increase in bank profitability and vice-versa. Thus, the presumption that the low interest rate environment weakens bank performance is confirmed by this research analysis. The research by Genay & Podjasek (2014), Alessandri & Nelson (2015), and Borio et al. (2015), which found a positive relationship between the level of interest rates and the performance of commercial banks, is in agreement with the findings.

The regression results for Bank Liquidity (BL) showed that bank liquidity had a positive and significant impact on bank financial performance. The regression coefficient for bank liquidity at $\beta = 0.0110538$ is positive and significant at $p = 0.001$. This result indicates that excess liquidity enabled banks to pursue diversification

strategy into other alternative sources of income such as investing in short-term securities in order to cushion against financial shocks such as low interest rate environment. The findings coincide with earlier research by Alshatti (2014) and Islam & Nishiyama (2016), which found a strong and positive relationship between liquidity and bank profitability.

The regression results for Bank Size (BS) showed that bank size had a negative and significant effect on bank financial performance. The regression coefficient for bank size at β= -0.0000171 is negative and significant at p= 0.000. This finding indicates that larger banks have more complex bureaucratic processes and organizational structures that can slow down decision-making and impede performance. This finding fits in with studies by Michael (2015), Murthy (2015), and Antoun et al. (2018), which discovered that firm size had a significant negative relationship with firm profitability.

The regression results for Product Diversification (PD) showed that product diversification has a negative and significant effect on bank financial performance. The regression coefficient for product diversification at β= -0.0022015 is negative and significant at p= 0.000. The results imply that diversification can result in higher costs relative to revenue due to complexity in managing multiple product lines which can be more challenging than focusing on a single core business. The findings of Chen & Ho (2000), Doaei et al. (2015), and Phung (2016), who came to the conclusion that there is a negative and significant relationship between diversification strategy and corporate performance, are consistent with this conclusion.

The regression results for Bank Efficiency (BE) showed that Bank Efficiency has a positive and significant effect on bank financial performance. The regression

coefficient for bank efficiency at β= 0.4331749 is positive and significant at p= 0.000. This implies that for every unit increase in bank efficiency, financial performance of commercial banks in Kenya was predicted to increase by 0.4331749 units. The findings justify that banks efficiency strategies such as restructuring, consolidation and digitization paid-off during interest capping period since banks were able to control expenses and optimize on performance. Thus, the results support the fact that efficiency as measured by cost-to-income ratio has an impact on the profitability of a firm and that cost management at the various phases of a firm is a sustainable survival strategy in the wake of volatile business environment. The research by Gill et al. (2014) and Jakava & Aliyu (2015), who recognized that efficiency strategies has a positive and significant impact on firm performance, was in line with the study's findings. Commercial banks must therefore ensure effective use of company resources in order to achieve improved performance.

The regression results for Risk Management (RM) showed that Risk Management had a positive and significant effect on bank financial performance. The regression coefficient for risk management at β= 40.18176 is positive and significant at p= 0.000. The results reveal that risk management strategies by banks amid interest capping contributed significantly to financial performance and a confirmation that prudent risk management positively correlates with profitability. This is because effective and efficient management of risk may result to minimal default and delinquency and hence increases banking performance. Furthermore, better risk management in terms of reduction in the cost of bad loans that abate provisions results in better bank performance. This implies that the experience of interest capping period in Kenya led banks to be more careful by adopting stringent lending standards which led to an increase in profitability. Thus, banks' practice of prudent risk management

and safeguarding the assets of the bank is vital in achieving banks' strategic objectives and to ensure sound financial performance to shareholders amid changes in the business environment. The results of earlier empirical studies by Silva & Chan (2014), Ping & Muthuveloo (2015), and Teoh et al. (2017), which found that risk management improves firm performance, are in line with the present ones. In order to improve bank performance, bank managers should reduce risk by utilizing the appropriate risk management techniques.

The regression results for Interest Rate (IR) revealed that Interest Rate had a negative and significant effect on bank financial performance. The regression coefficient for interest rate at β= -2.459915 is negative and significant at p= 0.000. Because banks were able to offset the negative impact of low interest rates on profits by changing their business strategies, according to research by Genay and Podjasek (2014), even though interest rates decreased, the net effect of low interest rates on profits turns out to be positive.

The moderating results revealed that Interest cap had a positive and significant (β= 0.1019856, p= 0.000) moderating effect on the relationship between Product Diversification (PD) and bank financial performance. The null hypothesis stating that Interest cap has no significant moderating effect on the relationship between product diversification and bank financial performance relationship was rejected and concluded that interest cap significantly moderates the relationship between product diversification and bank financial performance. Thus, reduction of interest rates through interest caps motivated banks to explore product diversification strategies because bank's indifference in the wake of reduced interest rates would result in a decline in performance. This research analysis thus supports the hypothesis that the interest caps

strengthened the link between product diversification and bank performance. This result is in line with studies by Baele et al. (2007), Engle et al. (2014), and Kohler (2015), who stressed that banks will implement a diversification strategy in the wake of economic shocks like a low interest rate environment in order to improve performance.

The moderating results revealed that Interest cap had a negative and significant (β= -15.53521, p= 0.000) moderating effect on the relationship between Bank Efficiency (BE) and bank financial performance. This signifies that bank total revenue declined relative to total costs during interest capping period on account of low interest rate caused by interest capping. Further, the increase in cost is confirmation of banks focus on capital intensive strategies such as restructures reorganization, digitization, and adoption of diversification strategies during interest cap period in order to sustain performance. Also, despite the growth of digital platforms to access banking services, a big portion of customers still opt to go physical to banking halls for some services. This means that digital transformation remains a complex and long-term process. The study's findings are consistent with those of Maredza & Ikhide (2013), who conducted research in South Africa and found that environmental instability, such as a low interest rate environment, is a significant contributor to bank inefficiency.

The moderating results revealed that Interest cap had a negative and but not significant (β= -99.21179, p= 0.099) moderating effect on the relationship between Risk Management (RM) and bank financial performance. This implies that there is weak or no evidence to support the claim that increased engagement in risk management strategies amid interest cap environment leads to an increase in bank performance. This is in line with studies by Agustina & Baroroh (2016) and Ballantyne (2013),

which discovered no correlation between the use of risk management and a company's financial performance.

Table 4.15: Summary of the Fixed Effects Regression Models

Variable ROA	Model 1 Coef. Sig.	Model 2 Coef. Sig.	Model 3 Coef. Sig.	Model 4 Coef. Sig.	Model 5 Coef. Sig.	Model 6 Coef. Sig.
BL	0.01*	0.01**	0.01**	0.01**	0.01**	0.01**
BS	-0.00***	-0.00**	-0.00**	-0.00**	-0.00**	-0.00**
PD		-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
BE		0.41***	0.27***	0.25***	0.48***	0.43***
RM		-0.67***	19.65***	31.09***	37.66***	40.18***
M			-1.68***	-3.06***	-2.42***	-2.46***
PD:M				0.12***	0.10***	0.10***
BE:M					-18.20***	-15.54***
RM:M						-99.21
R-sq	0.4304	0.6069	0.7060	0.7474	0.7968	0.7995
ΔR2	**0%**	**41.00%**	**16.33%**	**5.86%**	**6.66%**	**0.33%**
Prob >F	0.000	0.000	0.000	0.000	0.000	0.000
Constant	0.08***	0.06***	0.07***	0.71***	0.06***	0.06***

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the findings, conclusions and recommendations for policy, practical, managerial, theoretical and further studies.

5.1 Summary of the Findings

The overall aim of the study was to determine the moderating effect of interest capping on bank strategies and bank performance in Kenya using the Balance Scorecard approach. The bank strategic variables were product diversification, bank efficiency and risk management as independent variables while bank financial performance and interest cap were the dependent and moderator variables respectively. The target population of the study was 42 banks as per CBK database for the year ended 2019 and the research focused on 35 banks which met the inclusion and exclusion criteria. Secondary data from annual audited financial reports for the sampled banks for the periods 2013 to 2019 were used to conduct a 7-year panel data analysis that resulted in a total of 245 firm-year observations. Furthermore, the Balance Scorecard model was the underpinning theoretical foundation for the study because of its strong link to firm performance.

5.1.1 Summary of the Descriptive Statistics

The decline in ROA from 8.58% before interest capping period to 7.20% during interest capping period is an affirmation that a reduction in interest rates as an environmental factor weakens bank financial performance. This view is supported by research from Borio et al. (2015) and Irungu (2013), who found that bank income

declines when interest rates fall and vice versa. DeYoung et al.'s (2018) assertion that commercial banks will adopt a hold strategy on deposits in response to a reduction in interest rates is consistent with an improvement in banks' liquidity position from 78.5% before interest capping period to 75.2% during interest capping period. The fact that the average size of banks increased from 10.5 before the interest cap to 10.8 during the cap confirms that banks prioritized consolidation strategies like mergers and acquisitions in an effort to maintain their performance. This outcome is consistent with research by Jagersma (2005), Sherman (2010), and Awan & Mahmood (2015), which showed that organizations undergoing mergers or acquisitions in difficult economic times do so primarily out of a desire to survive.

According to studies by Baele et al (2007), Engle et al (2014), and Kohler (2015), banks will implement a diversification strategy to try to maximize their pool of resources in the wake of economic shocks like a low interest rate environment. The product diversification index increased from 23.24% before interest capping period to 27.66% during interest capping period. Additionally, the study by Maredza & Ikhide (2013), which demonstrated that environmental turbulence like a low interest rate environment is a significant contributor to bank inefficiency, is consistent with the decline in mean bank efficiency statistic from 67.66% before interest capping period to 74.5% during interest capping period. According to research by Li & Zou (2014), changes in environmental factors, such as a decline in interest rates, usher in a more risky and challenging operating environment for banks. As a result, the risk management factor increased from 1.18% before interest capping period to 1.38% during interest capping period. Based on research by Borio et al. (2015) and Gamble et al. (2015), which suggested that monetary policy is a part of the macro-economic environment where factors like interest caps are outside of the control of firms who

have no choice but to comply. The decline in mean interest rate as a moderator from 16.63% before interest capping period to 13.06% during interest capping period confirms that the Kenyan government succeeded in the implementation of interest rate capping policy.

5.1.2 Summary of the Correlation Results

The product diversification correlation coefficient (-0.5367) suggests a negative correlation between bank financial performance and product diversification. This suggests that a decrease in bank performance resulted from a rise in product diversification strategies. This result is comparable to studies done by Phung & Doaei, et al (2015), who demonstrated that diversification has a negative impact on the firm performance. Furthermore, according to the results of Dietrich (2010), Gill et al (2014), and Jakada & Alivu (2015), efficiency has a positive impact on firm performance, thus the correlation coefficient for bank efficiency (0.5963) implies a positive association with bank financial performance.

The research by Silva & Chan (2014), Ping & Muthuveloo (2015), and Teo et al. (2017), which established that risk management results in minimal default and delinquency and therefore increases firms' financial performance, is consistent with the correlation coefficient for risk management (0.4664), which suggests a positive association with bank financial performance. The research by Genay & Podjasek (2014), Alessandri & Nelson (2015), and Borio et al. (2015), which came to the conclusion that there is a positive relationship between the level of interest rates and the performance of commercial banks, is consistent with the correlation on interest rate (0.13570). This research analysis thus confirms the hypothesis that the low interest rate environment weakens bank performance.

5.1.3 Summary of Regression Results

Overall, the effects of interest cap moderation on bank efficiency and product diversification on a company's financial performance were significant, but the effects of interest cap moderation on risk management were not significant. It should be noted that the results of product diversification suggest that banks benefited from diversification strategy, which is consistent with the conclusions of Baele et al. (2007), Engle et al. (2014), and Kohler (2015). The conclusion regarding bank efficiency is consistent with the South African study by Maredza & Ikhide (2013), which demonstrated that environmental turbulence, such as a low interest rate environment, is a significant contributor to bank inefficiency. Contrarily, the lack of significance of the relationship between interest cap moderation and bank financial performance suggests that there is scant or no evidence to support the assertion that increased use of risk management strategies in the context of an interest cap environment causes either an improvement or deterioration in performance. According to studies by Agustina & Baroroh (2016) and Ballantyne (2013), the adoption of risk management does not affect a company's financial performance.

5.1.3.1 Summary of the Control Variable Regression Results

The regression results for Bank Liquidity (BL) showed that bank liquidity had a positive and significant impact on bank financial performance. The regression coefficient for bank liquidity at $\beta = 0.0110538$ is positive and significant at $p = 0.001$. This result indicates that excess liquidity enabled banks to pursue diversification strategy into other alternative sources of income such as investing in short-term securities in order to cushion against financial shocks such as low interest rate environment. The findings are consistent with earlier research by Alshatti (2014) and

Islam & Nishiyama (2016), which found a strong and positive relationship between liquidity and bank profitability.

Bank size had a negative and significant (β= -0.0000171, p= 0.001) effect on bank financial performance. The results showed that a unit increase in bank size caused a decrease in bank financial performance by 0.0000171 which implies that an increase in bank size resulted in a decrease in bank performance. These results are consistent with research by Antoun et al. (2018) and Murthy (2015), which demonstrated that the size of the bank had an adverse impact on bank profitability.

5.1.3.2 Summary of the Product Diversification Regression Results

The regression results for Product Diversification revealed a negative and significant effect on bank financial performance (β= -0.0022015, p= 0.000). This means that a unit increase in diversification strategies decreased bank financial performance by 0.0022015 units. The results imply that diversification can result in higher costs relative to revenue due to complexity in managing multiple product lines which can be more challenging than focusing on a single core business. This outcome backs up the conclusions reached by Chen & Ho (2000), Doaei et al. (2015), and Phung (2016), who found a negative and significant relationship between corporate performance and diversification strategy.

5.1.3.3 Summary of the Bank Efficiency Regression Results

The regression results for Bank Efficiency showed a positive and significant effect on bank financial performance (β= 0.4331749, p= 0.000). This means that a unit increase in bank efficiency strategies increased bank financial performance by 0.4331749 units. The findings imply that banks efficiency strategies such as restructuring, consolidation and digitization during interest capping period paid-off and that cost

management at the various phases of a bank is a sustainable survival strategy in the wake of volatile business environment. These results are consistent with studies by Jakava & Aliyu (2015) and Gill et al (2014), which found a significant and positive relationship between efficiency strategies and firm performance.

5.1.3.4 Summary of the Risk Management Regression Results

The regression results for Risk Management revealed a positive and significant effect on bank financial performance (β= 40.18176, p= 0.000). This means that a unit increase in risk management strategies increased bank financial performance by 40.18176 units. The results imply that prudent credit risk management strategies positively correlates with profitability because it results to minimal default and delinquency on loans in conformity with previous empirical study by Teoh *et al* (2017) who came to the conclusion that risk management techniques improve business performance.

5.1.3.5 Summary of the interest rate regression results

The regression results for Interest Rate revealed a negative and significant effect on bank financial performance (β= -2.459915, p= 0.000). This means that a unit increase in interest rate decreased bank financial performance by 2.459915 units. Because banks were able to offset the negative impact of low interest rates on profits by changing their business strategies, according to research by Genay and Podjasek (2014), even though interest rates decreased, the net effect of low interest rates on profits turns out to be positive.

5.1.3.6 Summary of the Moderating Effects

Interest cap had a positive and significant moderating effect (β= 0.1019856, p= 0.000) on the relationship between product diversification and bank financial performance. The results imply that the reduction in interest rates forced banks to explore product

diversification strategies because bank's indifference in the wake of reduced interest rates would result in a decline in performance. According to research by Baele et al. (2007), Engle et al. (2014), and Kohler (2015), who stressed that banks will adopt diversification strategies in order to increase performance in the wake of economic shocks like a low interest rate environment, interest caps strengthened the relationship between product diversification and bank performance.

Furthermore, interest caps had a negative and significant moderating effect (β=-15.53521, p= 0.000) on the relationship between bank efficiency and bank financial performance. This shows that, due to the low interest rate brought on by interest capping, the bank's total revenue decreased in relation to its total costs during the interest capping period. In addition, the cost hike confirms that banks' focus on capital-intensive strategies—such as restructuring and reorganization, digitization, and the adoption of diversification strategies—was expensive in the short-run. Additionally, a significant portion of customers still choose to visit physical banking halls for some services, despite the expansion of digital platforms for accessing banking services. The study's findings are consistent with those of Maredza & Ikhide (2013), who conducted research in South Africa and found that environmental instability, such as a low interest rate environment, is a significant contributor to bank inefficiency.

Furthermore, interest cap had a negative but insignificant moderating effect on the association between risk management and bank financial performance (= -99.21179, p= 0.099). This suggests that there is little or no evidence to support the claim that greater use of risk management techniques in an environment with interest cap results in improved performance. According to studies by Agustina & Baroroh (2016) and

Ballantyne (2013), the adoption of risk management does not affect a company's financial performance.

5.2 Conclusions

The study sought to determine the moderating effect of interest capping on bank strategies and bank performance in Kenya. The Balance Scorecard as a tool to evaluate firm performance underpinned the conceptual framework for the study through application of product diversification, bank efficiency and risk management strategies. The observed strategies adopted by banks amid interest capping environment had a foundation in Porters generic model (1980) while price theory laid the foundation on the relationship between interest rate and firm performance. Furthermore, the study used explanatory research design and quantitative panel data regression methodology to generate the results.

Generally, the study revealed that only two of the three observed strategies employed by banks during interest capping period namely product diversification and bank efficiency strategies had significant effect on bank performance. Product diversification results showed a positive and significant effect on bank financial performance while the results on bank efficiency affirmed a negative and significant effect on bank financial performance. Conversely, risk management had a weak or no significant effect on bank financial performance. Moreover, whereas the study confirmed that interest caps weaken bank performance, interest cap moderation strengthened the relationship between product diversification and bank efficiency. Therefore, the results confirmed the efficacy of product diversification strategy adoption in a low interest rate environment which offers opportunities for banks to enhance performance.

Specifically, the study sought to determine the effect of product diversification on bank financial performance. The results established a negative and significant relationship between product diversification strategy and bank financial performance. The results imply that diversification can result in higher costs relative to revenue due to complexity in managing multiple product lines which can be more challenging than focusing on a single core business.

The study also sought to determine the effect of bank efficiency on bank financial performance. The results revealed that there is a positive and significant relationship between bank efficiency strategies and bank financial performance. The normative implications of the finding is that taking measures to enhance bank efficiency through cost rationalization strategies such as restructuring, consolidation and digitization in the wake of low-interest rate environment pays off and that cost management at the various phases of a bank is a sustainable survival strategy in the wake of low-interest rate environment.

Moreover, the study sought to determine the effect of risk management on bank financial performance. The study concludes that risk management strategies employed by banks had a positive and significant effect on bank financial performance. Whereas low interest-rate environment ushered in a riskier and more difficult operating environment, the study reveals that prudent credit risk management during interest capping period resulted in minimal default in loans and hence increased banking performance. Thus, the experience of low interest rate environment led banks to tighten their lending standards by avoiding risk prone segments such as SME’s in favor of less risky segments like consumer and secured lending in order to enhance performance.

Furthermore, the study sought to establish the moderating effect of interest cap on product diversification strategy and bank financial performance relationship. The study established that interest cap had a positive and significant moderating on the relationship between product diversification strategy and bank financial performance. The results imply that the reduction in interest rates forced banks to explore product diversification strategies because bank's indifference in the wake of reduced interest rates would result in a decline in performance. Thus, interest caps strengthened the relationship between product diversification strategy and bank performance.

On the moderation effect of interest cap on bank efficiency and bank financial performance relationship, the study established that interest caps had a negative and significant moderating effect on the relationship between bank efficiency and bank financial performance. The results signify that while cost rationalization strategies can be effective in reducing costs and improving short-term profitability, it has a negative effect on bank's performance amid interest cap environment. Thus, bank efficiency strategies such as restructuring, consolidation, and digitization and other related cost minimization strategies at various phases of a bank in the wake of low-interest rate environment weakens bank performance and is not a sustainable strategy in the long-term. Also, despite the growth of digital platforms to access banking services, a big portion of customers still opt to go physical to banking halls for some services.

Finally, the study established that interest caps had a negative but not significant moderating effect on the relationship between risk management and bank financial performance. The results suggest that there is weak or no evidence to support the claim that increased engagement in risk management strategies such as review of lending strategies by tightening credit standards in some sectors like SME's amid interest cap environment leads to an increase in bank performance. Therefore, there is weak or no

evidence to confirm whether interest caps weaken or strengthen the relationship between risk management strategies and bank performance.

5.3 Recommendations

The study recommendations included; policy recommendations, practical implications, managerial implications, theoretical implications and recommendations for further research.

5.3.1 Policy recommendations

Since the study shows that product diversification results in higher and stable profits, CBK should encourage banks to leverage on new technologies to create non-traditional products that increasingly shift away from the traditional core banking model focusing on interest income generation towards a banking model that increasingly focuses on fee generating activities such as service fees, mobile banking commission and brokerage activities amid low interest rate environment. Furthermore, banks should adopt distributed fintech strategy which involves partnering with fintech firms to digitize operations contrary to embedded fintech strategy where banks leverage fintech to digitize operations. CBK and legislators should consider a participatory approach when setting monetary policies by involving all stakeholders to support financial inclusiveness in all sectors of the economy.

5.3.2 Practical implications

Banks need to invest in Research & Development (R&D) to experiment with technological innovations on new product development to drive product diversification proposition which increases firm revenues amid low interest rate environment. Banks decision to conduct such experiments is key for firm stability in performance because it does not only provide opportunities to capture specific

markets when the experiment succeeds, but also contributes to expanding the number of product varieties the firm can offer in the product range.

5.3.3 Managerial implications

Since the study underscored a positive association for product diversification on bank performance amid low interest rate environment, bank managers need to pay more attention to diversification strategy to increase revenue streams. Thus, bank managers should focus on other alternative sources of income such as fees and commission by combining related activities of separate businesses to exploit common use of well-known brand name and cross-business collaboration to create competitively valuable resource, strengths and capabilities that increase revenue streams.

5.3.4 Contribution to knowledge

The study contributes to the body of literature on the concept of strategy and firm performance. The results of study drew widely from Porters generic strategies in highlighting product diversification strategy as an opportune strategy to be adopted by banks in the context of low interest rate environment. Furthermore, The Balance Scorecard (BSC) supported the conceptual framework for the study through application of product diversification, bank efficiency, risk management strategies and bank financial performance as a replicate for customer, internal processes, learning & growth and financial perspectives respectively. Price theory laid the foundation on the relationship between interest rate and bank performance where low interest rate environment was found to weaken bank performance. Thus, the findings were in line with the Balance Scorecard model, Porters generic strategy and price theory.

5.4 Limitations of the Study

There are two major limitations in this study that could be addressed in future research. First, the study limited itself to only 35 banks in Kenya due to access to data and in conformity to the research's inclusion and exclusion criteria. For more conclusive results, all banks should be studied in order to increase accuracy and representativeness of bank's universe as a whole. However, this was not possible due to time and financial constraints. Secondly, the study on the moderating effect of interest capping on bank strategies and firm performance is a maiden research in Kenya. Findings from this study will be more conclusive if the results are replicated. A repeated research generating similar results will be viewed as verifying this study.

5.5 Recommendations for Further Research

Future research could incorporate more variables such as service quality and culture as essential strategies for better performance in today's competitive environment by use of such metrics as Customer Effort Score (CES) and Net Promoter Score (NPS). Another possible extension could be the use of comparative methodology to compare and contrast pre-interest capping period and post interest capping period on a prolonged period of thirteen years.

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APPENDICES

Appendix I: List of Banks in Kenya

NO.	TIER 1 BANKS	TOTAL ASSETS (FY2019)
	Bank	**KSH. BILLION**
1	KCB Bank Kenya Ltd	898
2	Equity Bank Kenya Ltd	673
3	Co-operative Bank of Kenya Ltd	457
4	NCBA Bank Kenya Plc	494
5	ABSA Bank Kenya Plc	374
6	Standard Chartered Bank Kenya Ltd	302
7	Stanbic Bank Kenya Ltd	303
8	Diamond Trust Bank Ltd	386
9	I & M Bank Ltd	315
10	National Bank of Kenya Ltd	111
11	Citibank N.A Kenya	96
12	Bank of Baroda	143
13	Bank of Africa Kenya Ltd	43
14	Chase Bank (K) Limited (in receivership)	exclusion criteria
15	SBM Bank Kenya Ltd	Exclusion criteria
16	Imperial Bank Limited (in receivership)	exclusion criteria
17	Family Bank Limited	78
18	Bank of India	62
19	Ecobank Kenya Ltd	23

20	Prime Bank Ltd	110
21	Dubai Bank Kenya Ltd	Exclusion criteria
22	Consolidated Bank of Kenya	11
23	Gulf African Bank Ltd	35
24	First Community Bank Ltd	18
25	Habib Bank A.G Zurich	24
26	African Banking Corporation Ltd	29
27	Charterhouse bank Ltd	Exclusion criteria
28	Credit Bank Ltd	21
29	Victoria Commercial Bank Ltd	36
30	UBA Kenya Bank Ltd	16
31	Development Bank of Kenya	15
32	Access Bank Kenya Plc	10
33	Sidian Bank Ltd	26
34	Mayfair CIB Bank Limited	Exclusion criteria
35	M-Oriental Bank Ltd	12
36	Guaranty Trust Bank (K) Ltd	42
37	HFC Ltd	56
38	Jamii Bora Bank Ltd	13
39	Spire Bank Ltd	6
40	Paramount Bank Ltd	10
41	Middle East Bank (K) Ltd	5
42	Guardian Bank Ltd	16

Appendix II: Data Collection Schedule

NO	**Bank**	**Net Commission**	**Total Revenue**	Operating Cost	**Total Deposits**	**Total Loans**	**NPL**	**DP: ROA**	**IV_1: PD**	**IV_2: BE**	**IV_3: RM**	**CV_1 BS**	**CV_2 BL**
1	KCB Bank Kenya Ltd												
2	Equity Bank Kenya Ltd												
3	Co-op Bank of Kenya Ltd												
4	NCBA Bank Kenya Plc												
5	ABSA Bank Kenya Plc												
6	Standard Chartered plc												
7	Stanbic Bank Kenya Ltd												
8	Diamond Trust Bank												
9	I & M Bank Ltd												
10	National Bank of Kenya												
11	Citibank N.A Kenya												
12	Bank of Baroda												

13	Bank of Africa Kenya												
14	Chase Bank (K) Limited												
15	SBM Bank Kenya Ltd												
16	Imperial Bank Limited												
17	Family Bank Limited												
18	Bank of India												
19	Ecobank Kenya Ltd												
20	Prime Bank Ltd												
21	DIB Bank Kenya Ltd												
22	Consolidated Bank												
23	Gulf African Bank Ltd												
24	First Community Bank												
25	Habib Bank A.G Zurich												
26	ABC Ltd												
27	Charterhouse bank Ltd												

28	Credit Bank Ltd												
29	Victoria Commercial Bank Ltd												
30	UBA Kenya Bank Ltd												
31	Development Bank of Kenya												
32	Access Bank Kenya Plc												
33	Sidian Bank Ltd												
34	Mayfair CIB Bank Ltd												
35	M-Oriental Bank Ltd												
36	Guaranty Trust Bank												
37	HFC Ltd												
38	Jamii Bora Bank Ltd												
39	Spire Bank Ltd												
40	Paramount Bank Ltd												
41	Middle East Bank (K)												
42	Guardian Bank Ltd												

ROA=Total Revenue/Total Loans, PD=Net Commission/Total Revenue, BE=Operating Cost/Total Revenue, RM=NPL/Total Loans, BS=Log of Loans & BL=Total Loan/Total Deposit

Appendix III: Banks Weighted Average Interest Rate

YEAR	LENDING RATE %
2013	17.3
2014	16.5
2015	16.1
2016	16.6
2017	13.7
2018	13.1
2019	12.4

The weights correspond to each banks market share in loans and advances

Source: Central Bank of Kenya, 2020.

Appendix IV: Bank Codes

BANK CODE	BANK
1	KCB
2	Equity Bank
3	Coop Bank
4	SCB
5	BBK
6	CFC Stanbic
7	Diamond Trust Bank
8	I & M Bank
9	NBK
10	CitiBank NA
11	Bank of Baroda
12	Bank of Africa-K
13	Family Bank
14	EcoBank Kenya
15	Prime Bank
16	Consolidated Bank
17	Gulf Bank
18	First Community Bank
19	ABC Bank
20	Paramount Bank
21	Victoria Com Bank
22	Guardian Bank
23	M-Oriental Bank
24	UBA Bank
25	Credit Bank
26	Access Bank
27	Sidian Bank
28	NCBA
29	HFC
30	Spire Bank
31	Development Bank
32	Middle East Bank
33	Habib Bank
34	Guaranty Trust Bank
35	Jamii Bora Bank

Appendix V: Variable Inputs Collected

YEAR	BANK CODE	TL	TD	TA	NC	TR	OC	LLP
2013	1	227,721	305,659	390,852	17,125	50,110	27,080	996
2014	1	283,738	377,271	490,338	22,001	57,949	29,104	3,089
2015	1	345,969	424,391	558,094	19,732	59,027	30,310	2,179
2016	1	385,745	448,174	595,240	22,449	69,476	33,104	3,823
2017	1	422,685	499,549	646,668	23,000	71,385	34,996	5,914
2018	1	455,880	537,460	714,313	22,973	71,803	34,698	2,944
2019	1	535,371	686,583	898,572	28,171	84,301	38,679	8,889
2013	2	171,363	195,153	277,729	2,992	41,861	20,656	2,402
2014	2	214,170	245,582	344,572	3,297	47,649	24,759	1,590
2015	2	269,893	303,206	428,062	3,969	56,055	29,664	2,433
2016	2	266,068	337,204	473,713	12,032	55,191	30,264	6,102
2017	2	279,092	373,143	524,465	16,342	58,791	31,909	2,716
2018	2	223,565	341,622	573,384	17,365	46,371	24,989	2,936
2019	2	276,863	380,603	673,682	20,732	55,148	29,174	3,458
2013	3	137,100	175,400	231,213	9,300	27,900	17,400	2,400
2014	3	179,500	217,700	285,388	10,800	32,100	20,100	2,100
2015	3	208,600	265,400	342,556	13,200	36,100	21,400	3,600
2016	3	232,300	260,200	351,901	12,800	42,300	24,600	3,900
2017	3	253,900	287,400	386,911	13,500	41,600	25,300	6,100
2018	3	245,410	306,117	413,467	12,893	43,678	25,692	1,840
2019	3	266,712	332,823	457,053	17,156	48,459	27,794	2,539
2013	4	129,672	154,720	220,391	7,067	23,827	10,472	787
2014	4	122,749	154,064	222,495	8,170	26,075	11,729	1,308
2015	4	120,394	172,036	233,966	7,249	24,814	11,063	4,591
2016	4	128,290	186,598	250,482	8,590	27,395	12,229	1,878
2017	4	134,328	213,349	285,724	8,772	26,626	12,785	3,770
2018	4	127,860	224,284	285,404	5,938	27,775	14,579	1,349

2019	4	136,534	228,434	302,138	5,951	27,950	15,542	234
2013	5	121,504	151,125	206,739	9,062	27,922	15,565	1,223
2014	5	128,991	164,504	225,841	8,684	28,288	14,590	1,405
2015	5	150,293	165,083	240,877	9,051	29,462	15,622	1,766
2016	5	175,676	178,180	259,718	9,349	31,683	16,904	3,927
2017	5	175,858	185,977	271,177	8,457	30,258	16,782	3,115
2018	5	177,354	207,408	324,840	6,711	27,823	17,021	3,871
2019	5	194,895	237,739	374,904	6,885	29,567	18,617	4,201
2013	6	69,133	95,027	180,512	3,189	15,436	8,212	767
2014	6	88,347	96,830	180,999	3,555	15,536	8,144	703
2015	6	104,982	106,493	208,452	2,945	15,348	8,271	907
2016	6	115,588	119,904	214,683	3,243	16,303	10,716	1,752
2017	6	130,536	155,406	248,739	4,348	16,766	10,902	2,761
2018	6	146,604	191,585	290,570	4,998	20,030	11,082	2,064
2019	6	152,817	194,222	303,625	5,653	21,630	13,920	3,151
2013	7	110,945	133,507	166,520	3,350	14,499	6,223	899
2014	7	137,655	163,348	211,539	3,777	16,816	7,197	851
2015	7	177,545	202,458	271,609	4,698	20,625	8,171	2,150
2016	7	186,303	255,679	328,044	4,997	25,452	9,195	4,197
2017	7	196,048	286,751	363,303	5,125	25,766	10,560	4,151
2018	7	193,074	300,003	377,719	5,161	26,171	11,503	2,709
2019	7	199,089	302,641	386,230	5,472	25,550	11,902	1,025
2013	8	91,883	97,145	141,364	1,960	12,322	4,664	472
2014	8	101,927	99,211	154,163	1,855	12,091	3,960	788
2015	8	114,927	116,686	191,657	2,031	14,467	5,024	695
2016	8	120,697	129,636	210,542	2,273	17,444	5,534	2,884
2017	8	135,098	147,582	240,111	2,739	17,889	5,959	4,059
2018	8	166,737	213,139	288,522	3,936	22,845	8,223	3,807
2019	8	175,329	229,737	315,291	3,994	23,481	9,147	636

2013	9	39,566	77,973	92,556	1,614	8,494	6,395	282
2014	9	65,641	104,734	123,092	2,136	9,933	8,105	525
2015	9	62,531	103,439	121,250	2,127	9,192	7,588	8,628
2016	9	55,022	93,870	112,086	2,857	10,649	8,154	2,415
2017	9	52,361	94,276	109,873	2,429	9,154	7,612	754
2018	9	47,779	98,866	114,849	1,991	8,019	7,563	185
2019	9	45,872	86,953	111,950	2,098	8,410	9,168	1,985
2013	10	24,338	43,762	71,243	3,382	7,578	2,593	1
2014	10	24,200	51,227	79,398	2,864	7,408	3,172	91
2015	10	29,498	62,477	88,147	2,895	8,573	2,789	208
2016	10	27,437	62,486	103,324	2,784	8,990	2,950	-95
2017	10	37,187	64,369	98,232	4,098	9,517	3,144	35
2018	10	26,436	54,789	85,639	3,873	9,174	3,531	172
2019	10	26,025	62,457	96,570	4,093	9,378	3,732	123
2013	11	23,579	41,877	52,022	276	3,320	815	72
2014	11	28,389	48,683	61,945	256	3,632	937	85
2015	11	31,018	52,929	68,178	340	4,048	1,562	602
2016	11	36,401	64,874	82,907	373	5,364	1,488	436
2017	11	42,207	73,005	96,132	780	6,556	1,502	364
2018	11	41,571	101,958	123,014	445	6,881	1,723	429
2019	11	46,942	117,173	143,311	1,014	7,750	2,284	773
2013	12	31,091	36,740	52,683	1,153	4,563	3,384	567
2014	12	38,464	41,671	62,212	1,302	4,868	4,175	517
2015	12	37,799	47,488	69,280	1,122	4,272	2,912	2,779
2016	12	31,542	34,464	55,996	946	3,969	2,905	1,216
2017	12	27,388	31,572	54,191	1,194	2,449	2,637	7
2018	12	21,188	30,122	49,081	1,003	2,186	2,284	-159
2019	12	15,982	33,327	43,996	781	1,778	2,582	2,396
2013	13	27,943	34,583	43,514	1,703	6,303	4,196	321

2014	13	37,925	47,136	61,834	2,360	8,012	4,957	382
2015	13	55,584	62,711	81,281	2,472	9,377	6,208	212
2016	13	50,164	41,395	69,492	1,705	9,126	7,614	847
2017	13	43,472	47,362	69,135	1,780	6,553	6,979	931
2018	13	44,113	48,483	67,011	2,038	7,272	5,632	1,204
2019	13	50,594	58,054	78,918	2,068	8,354	5,648	1,283
2013	14	18,460	25,351	36,907	731	1,633	2,864	320
2014	14	22,982	32,414	45,934	1,173	2,170	2,670	-56
2015	14	29,621	34,479	52,427	1,314	3,024	2,931	48
2016	14	24,474	32,243	47,124	997	1,287	4,176	1,209
2017	14	16,371	43,686	53,456	719	2,938	4,372	1,776
2018	14	13,023	57,970	75,378	912	3,021	2,778	71
2019	14	21,377	44,747	54,464	1,067	2,785	2,649	125
2013	15	25,530	40,562	49,461	335	3,324	1,371	139
2014	15	33,422	45,075	54,918	376	3,892	1,546	101
2015	15	39,845	50,887	65,002	447	4,468	1,766	152
2016	15	39,359	49,313	65,338	993	4,544	2,208	209
2017	15	38,817	57,555	77,999	1,361	4,990	2,725	341
2018	15	36,777	71,075	100,136	1,978	5,740	3,321	188
2019	15	37,006	80,983	110,676	2,162	6,551	3,859	352
2013	16	10,855	11,711	16,779	369	1,519	1,255	407
2014	16	9,212	10,642	15,077	322	1,381	1,208	448
2015	16	9,221	9,996	14,136	317	2,015	1,378	589
2016	16	9,161	9,492	13,918	270	1,438	1,406	309
2017	16	8,421	8,646	13,456	324	1,276	1,320	395
2018	16	8,430	8,589	12,887	299	1,405	1,388	368
2019	16	7,369	8,772	11,861	344	1,221	1,322	416
2013	17	10,665	12,970	16,054	325	1,612	1,178	43
2014	17	13,791	15,790	19,750	370	1,922	1,305	31

2015	17	15,428	19,017	24,707	845	2,855	1,765	203
2016	17	16,193	26,074	27,156	398	2,448	1,694	52
2017	17	19,384	21,755	31,316	678	2,631	2,377	644
2018	17	22,606	26,689	33,326	769	2,975	2,682	736
2019	17	22,673	27,818	35,123	754	2,699	2,481	670
2013	18	7,211	9,932	11,305	262	1,112	911	42
2014	18	9,766	13,339	15,278	401	1,305	1,206	104
2015	18	10,940	12,350	14,565	292	1,334	1,323	218
2016	18	10,936	12,655	14,962	445	1,452	1,493	279
2017	18	9,727	14,774	17,360	484	1,286	1,070	188
2018	18	9,027	14,618	17,880	460	1,180	1,458	301
2019	18	9,910	16,126	18,763	441	1,196	1,011	-345
2013	19	11,491	16,479	20,644	517	1,766	1,125	49
2014	19	13,680	16,391	22,073	533	1,913	1,414	162
2015	19	15,292	16,300	26,618	463	1,835	1,358	88
2016	19	14,642	16,573	22,865	582	1,749	1,505	108
2017	19	15,906	20,391	25,587	587	1,808	1,632	98
2018	19	17,787	22,183	27,986	604	1,930	1,764	192
2019	19	19,237	23,261	29,396	504	1,849	1,679	57
2013	20	3,272	6,601	8,029	42	348	229	14
2014	20	4,448	8,048	10,402	66	458	287	10
2015	20	5,872	8,067	10,526	72	512	331	12
2016	20	5,800	7,666	9,428	59	481	316	60
2017	20	5,902	7,726	9,541	55	474	329	48
2018	20	5,643	8,121	9,887	66	483	348	-16
2019	20	6,463	8,473	10,442	67	470	371	12
2013	21	8,363	9,044	13,644	190	961	367	8
2014	21	10,979	12,289	17,244	162	1,057	411	11
2015	21	13,124	14,024	20,020	128	1,251	554	20

2016	21	15,293	15,696	22,403	178	1,416	608	12
2017	21	18,870	18,677	25,986	206	1,643	759	35
2018	21	22,870	23,765	32,337	221	1,721	785	371
2019	21	23,789	26,395	36,072	257	2,085	907	510
2013	22	8,347	11,180	12,835	59	885	501	14
2014	22	9,435	12,643	14,573	77	1,014	636	111
2015	22	9,243	12,494	14,609	72	1,117	788	102
2016	22	8,975	12,313	14,705	84	1,119	808	142
2017	22	9,617	13,118	15,803	88	964	731	49
2018	22	9,028	13,333	16,189	102	1,065	717	50
2019	22	9,103	13,067	16,386	108	934	684	24
2013	23	4,035	5,377	7,009	52	459	378	48
2014	23	4,628	6,231	7,858	73	474	390	59
2015	23	5,245	6,218	8,496	57	503	461	88
2016	23	6,638	6,937	9,920	96	738	703	252
2017	23	7,273	7,463	10,577	118	738	677	162
2018	23	7,496	7,405	10,515	98	698	592	145
2019	23	6,812	9,188	12,394	124	633	568	129
2013	24	790	2,483	3,710	125	246	524	24
2014	24	734	3,576	4,756	181	246	331	41
2015	24	2,733	4,137	7,781	238	349	303	20
2016	24	3,058	1,947	5,601	368	589	539	9
2017	24	3,270	2,993	6,505	287	603	589	27
2018	24	3,448	6,039	15,332	111	703	679	9
2019	24	3,630	6,933	16,088	193	942	837	190
2013	25	4,328	5,512	7,309	131	650	578	45
2014	25	5,528	7,213	8,865	137	687	776	118
2015	25	7,088	7,267	10,298	165	591	770	223
2016	25	7,899	9,135	12,238	272	1,082	924	150

2017	25	9,699	10,939	14,511	228	1,214	1,035	136
2018	25	13,031	13,118	17,826	187	1,581	1,249	154
2019	25	15,227	16,806	21,661	371	1,795	1,492	137
2013	26	5,145	7,097	9,658	159	914	602	87
2014	26	6,009	7,660	10,240	160	962	681	91
2015	26	6,650	7,583	10,453	181	1,087	758	77
2016	26	6,367	8,000	10,372	186	1,086	926	97
2017	26	6,604	7,898	10,241	231	972	918	80
2018	26	6,626	8,019	10,236	241	833	932	63
2019	26	6,123	7,100	9,318	236	892	949	117
2013	27	8,694	9,165	13,001	532	1,931	1,224	150
2014	27	10,454	12,065	15,801	586	2,247	1,424	93
2015	27	12,519	13,380	19,107	616	2,273	1,564	189
2016	27	13,435	13,685	20,875	586	2,487	2,125	301
2017	27	11,409	12,761	19,302	642	1,689	1,872	450
2018	27	13,134	16,942	25,309	1,084	2,147	2,685	781
2019	27	14,526	17,198	26,460	1,450	2,384	2,284	403
2013	28	81,418	91,565	121,063	1,241	9,330	4,321	1,093
2014	28	100,575	100,435	145,309	3,508	11,177	4,946	329
2015	28	114,658	112,365	165,779	3,956	12,046	5,648	1,652
2016	28	122,723	111,825	169,459	3,919	12,338	6,171	3,750
2017	28	130,872	138,917	206,172	4,062	11,856	6,255	2,980
2018	28	122,090	144,501	208,407	3,806	12,751	6,928	3,339
2019	28	274,442	378,237	494,717	10,852	32,389	15,584	5,635
2013	29	35,218	26,507	47,389	1,368	3,641	2,160	281
2014	29	45,244	36,106	60,962	843	3,325	1,907	551
2015	29	53,021	41,665	71,659	1,171	4,279	2,609	504
2016	29	54,470	38,707	71,930	756	3,990	2,647	699
2017	29	49,640	36,744	67,541	1,346	3,747	3,412	576

2018	29	43,186	34,720	60,588	1,319	3,137	3,789	448
2019	29	38,552	37,340	56,455	1,403	3,072	3,212	299
2013	30	9,029	13,856	15,562	250	1,078	926	87
2014	30	10,068	14,306	16,589	475	1,395	1,855	881
2015	30	8,322	10,378	14,470	183	795	1,451	359
2016	30	7,434	8,543	13,802	368	842	1,810	667
2017	30	5,239	6,816	11,148	266	550	2,126	761
2018	30	4,498	6,846	10,828	144	274	663	-58
2019	30	1,884	1,781	3,855	71	102	1,064	251
2013	31	9,066	8,419	15,580	89	1,749	1,432	508
2014	31	9,225	11,293	16,944	93	1,941	1,622	698
2015	31	8,868	11,691	16,942	119	1,991	1,810	824
2016	31	8,733	5,768	16,441	124	610	513	126
2017	31	9,196	6,228	16,309	108	507	447	62
2018	31	8,387	5,729	15,313	113	538	367	12
2019	31	7,911	5,065	15,350	1,144	1,551	412	8
2013	32	2,637	2,913	5,211	85	196	269	47
2014	32	2,929	3,237	5,371	95	218	299	53
2015	32	3,255	3,596	5,149	105	242	333	58
2016	32	3,617	3,996	5,234	117	266	370	65
2017	32	2,769	3,908	5,121	108	270	301	27
2018	32	2,560	4,147	5,361	85	329	329	-6
2019	32	5,965	6,838	8,466	196	527	467	104
2013	33	3,088	5,558	10,040	78	662	280	38
2014	33	3,431	6,175	9,939	82	766	294	47
2015	33	3,813	6,861	10,230	92	830	346	52
2016	33	3,946	8,215	12,508	111	834	341	3
2017	33	5,116	11,910	17,014	102	960	534	19
2018	33	6,286	15,605	21,521	93	1,086	727	36

2019	33	6,699	19,581	24,824	92	1,201	816	44
2013	34	12,569	16,507	29,899	792	2,519	2,070	326
2014	34	13,515	18,140	37,374	843	2,651	2,179	379
2015	34	15,900	20,613	39,336	958	2,882	2,476	431
2016	34	18,488	24,835	38,098	1,041	3,167	2,983	484
2017	34	20,543	27,595	40,104	1,225	3,599	3,278	510
2018	34	19,682	30,789	37,945	938	3,357	3,040	371
2019	34	20,717	28,687	42,052	1,224	3,743	2,878	440
2013	35	5,294	7,790	9,189	159	892	924	105
2014	35	6,016	9,618	10,210	166	980	957	114
2015	35	6,611	10,930	9,632	199	1,139	1,181	138
2016	35	6,815	8,070	11,332	241	1,307	1,800	313
2017	35	8,311	5,343	12,877	267	558	1,079	228
2018	35	6,330	4,042	10,053	247	643	1,101	-112
2019	35	5,711	4,713	9,247	165	293	1,267	160

TL=TOTAL LOANS, TD=TOTAL DEPOSITS, TA=TOTAL ASSETS, NC=NET COMMISSION, TR=TOTAL REVENUE, OC=OPERATING COST & LLP=LOAN LOSS PROVISION

Appendix VI: Variables Ratio Computation

YEAR	BANK	ROA	BL	BS	PD	BE	RM	M
2013	1	0.128207	0.745017	45.32541	2.665595	0.069285	0.000561	0.004374
2014	1	0.118182	0.75208	53.84722	3.212522	0.059355	0.001287	0.010887
2015	1	0.105765	0.815213	72.87596	3.160655	0.05431	0.000666	0.006298
2016	1	0.116719	0.860704	63.17835	2.76834	0.055615	0.001157	0.009911
2017	1	0.110389	0.846133	69.43646	2.918739	0.054117	0.001545	0.013992
2018	1	0.10052	0.848212	83.94529	3.182886	0.048575	0.000649	0.006458
2019	1	0.093817	0.779762	88.59355	3.561965	0.043045	0.001558	0.016603
2013	2	0.079745	0.878096	138.0823	0.896293	0.039349	0.001118	0.014017
2014	2	0.138285	0.872092	45.60521	0.50037	0.071854	0.001027	0.007424
2015	2	0.130951	0.890131	51.9085	0.540703	0.069298	0.00118	0.009015
2016	2	0.116507	0.789042	58.12915	1.871184	0.063887	0.002672	0.022934
2017	2	0.112097	0.747949	59.52281	2.479705	0.060841	0.001091	0.009732
2018	2	0.080873	0.654422	100.059	4.630495	0.043582	0.001062	0.013133
2019	2	0.081861	0.727433	108.5533	4.592367	0.043305	0.001022	0.01249
2013	3	0.120668	0.781642	53.68142	2.762401	0.075255	0.002112	0.017505
2014	3	0.112478	0.824529	65.17295	2.991227	0.07043	0.001316	0.011699
2015	3	0.105384	0.785983	70.77211	3.469693	0.062472	0.001819	0.017258
2016	3	0.120204	0.892775	61.78772	2.517386	0.069906	0.002018	0.016789
2017	3	0.107518	0.883438	76.42077	3.018271	0.06539	0.002583	0.024025
2018	3	0.105638	0.801687	71.83912	2.794276	0.062138	0.000792	0.007498
2019	3	0.106025	0.801363	71.28751	3.339133	0.060811	0.001009	0.00952
2013	4	0.108112	0.838108	71.70488	2.743407	0.047516	0.000656	0.006069
2014	4	0.117194	0.79674	58.01078	2.673583	0.052716	0.001249	0.010656
2015	4	0.106058	0.699819	62.21534	2.754465	0.047285	0.004044	0.038133
2016	4	0.109369	0.687521	57.47729	2.866996	0.048822	0.001601	0.014639
2017	4	0.093188	0.629616	72.50326	3.535359	0.044746	0.002615	0.028066
2018	4	0.097318	0.570081	60.19333	2.196808	0.051082	0.001027	0.010551
2019	4	0.092507	0.597696	69.84369	2.30161	0.05144	0.000159	0.001714
2013	5	0.135059	0.803997	44.07639	2.402998	0.075288	0.001359	0.010066
2014	5	0.125256	0.784121	49.97859	2.450858	0.064603	0.001364	0.010892
2015	5	0.122311	0.910409	60.85589	2.511698	0.064855	0.001437	0.01175
2016	5	0.12199	0.985947	66.25291	2.418882	0.065086	0.002727	0.022354
2017	5	0.11158	0.94559	75.95007	2.50489	0.061886	0.001976	0.017713
2018	5	0.085651	0.855097	116.5592	2.816105	0.052398	0.001869	0.021826
2019	5	0.078866	0.819786	131.8032	2.952633	0.049658	0.0017	0.021555
2013	6	0.085512	0.727509	99.49036	2.415967	0.045493	0.000949	0.011095
2014	6	0.085835	0.912393	123.8385	2.66586	0.044995	0.000683	0.007957
2015	6	0.073628	0.985811	181.8454	2.60608	0.039678	0.000636	0.00864
2016	6	0.07594	0.964005	167.1627	2.619447	0.049915	0.001151	0.015157
2017	6	0.067404	0.839968	184.8806	3.847463	0.043829	0.001426	0.021151
2018	6	0.068933	0.765216	161.0364	3.619805	0.038139	0.00097	0.014079

2019	6	0.071239	0.786816	155.037	3.668626	0.045846	0.001469	0.020619
2013	7	0.087071	0.831005	109.6126	2.653598	0.037371	0.000706	0.008103
2014	7	0.079494	0.84271	133.3563	2.825479	0.034022	0.000491	0.006182
2015	7	0.075936	0.876947	152.0806	2.999641	0.030084	0.00092	0.01211
2016	7	0.077587	0.72866	121.0445	2.530449	0.02803	0.001748	0.022528
2017	7	0.070922	0.683687	135.9257	2.804587	0.029067	0.001502	0.021173
2018	7	0.069287	0.643574	134.0588	2.846178	0.030454	0.000972	0.014031
2019	7	0.066152	0.657839	150.3245	3.237504	0.030816	0.000341	0.005148
2013	8	0.087165	0.945834	124.4887	1.824872	0.032993	0.000448	0.005137
2014	8	0.07843	1.027376	167.0188	1.956139	0.025687	0.000606	0.007731
2015	8	0.075484	0.984925	172.8605	1.859849	0.026213	0.000456	0.006047
2016	8	0.082853	0.931045	135.6301	1.5727	0.026285	0.00198	0.023895
2017	8	0.074503	0.91541	164.9178	2.055095	0.024818	0.002238	0.030045
2018	8	0.079179	0.782292	124.7799	2.175964	0.0285	0.001808	0.022832
2019	8	0.074474	0.763173	137.5982	2.283949	0.029011	0.00027	0.003627
2013	9	0.091771	0.507432	60.25076	2.07054	0.069093	0.000654	0.007127
2014	9	0.080696	0.62674	96.2468	2.664834	0.065845	0.000645	0.007998
2015	9	0.07581	0.604521	105.1852	3.052314	0.062581	0.001021	0.013467
2016	9	0.095007	0.586151	64.93736	2.823865	0.072748	0.00417	0.043892
2017	9	0.083314	0.555401	80.01418	3.184906	0.06928	0.0012	0.0144
2018	9	0.069822	0.48327	99.12977	3.55597	0.065852	0.00027	0.003872
2019	9	0.075123	0.527549	93.48013	3.320761	0.081894	0.003251	0.043273
2013	10	0.106368	0.556145	49.15446	4.195721	0.036397	4.37E-06	4.11E-05
2014	10	0.093302	0.472407	54.26673	4.143627	0.039951	0.000351	0.00376
2015	10	0.097258	0.472142	49.91394	3.472086	0.03164	0.000686	0.007051
2016	10	0.087008	0.43909	58.00119	3.559189	0.028551	-0.0003	-0.00346
2017	10	0.096883	0.577716	61.54889	4.444519	0.032006	9.12E-05	0.000941
2018	10	0.107124	0.482506	42.04633	3.940956	0.041231	0.000697	0.006506
2019	10	0.097111	0.416687	44.18487	4.494315	0.038646	0.000459	0.004726
2013	11	0.063819	0.563054	138.2445	1.302627	0.015666	0.000195	0.003054
2014	11	0.058633	0.58314	169.6265	1.202139	0.015126	0.000176	0.002994
2015	11	0.059374	0.58603	166.237	1.414628	0.022911	0.001152	0.019408
2016	11	0.064699	0.561103	134.044	1.074787	0.017948	0.000775	0.011978
2017	11	0.068198	0.578138	124.3054	1.744555	0.015624	0.000588	0.008624
2018	11	0.055937	0.407727	130.3092	1.156143	0.014007	0.000577	0.01032
2019	11	0.054078	0.400621	136.9903	2.419436	0.015937	0.000891	0.016467
2013	12	0.086612	0.846244	112.8069	2.917419	0.064233	0.00158	0.018237
2014	12	0.078249	0.92304	150.7536	3.418094	0.067109	0.001052	0.013441
2015	12	0.061663	0.79597	209.3388	4.2593	0.042032	0.00083	0.013467
2016	12	0.07088	0.915216	182.1694	3.362683	0.051879	0.002733	0.038552
2017	12	0.045192	0.867478	424.7516	10.78832	0.048661	1.16E-05	0.000256
2018	12	0.044539	0.703406	354.595	10.30182	0.046535	-0.00033	-0.0075
2019	12	0.040413	0.479551	293.6282	10.86928	0.058687	0.000544	0.013467
2013	13	0.14485	0.807998	38.51002	1.865302	0.096429	0.001664	0.011488
2014	13	0.129573	0.804587	47.92318	2.273304	0.080166	0.001305	0.010073

2015	13	0.115365	0.886352	66.59725	2.285123	0.076377	0.00044	0.003814
2016	13	0.131324	1.211837	70.26725	1.422651	0.109567	0.002217	0.016885
2017	13	0.094786	0.917867	102.1634	2.865746	0.100947	0.00203	0.021416
2018	13	0.108519	0.909865	77.26122	2.582513	0.084046	0.002962	0.027294
2019	13	0.105857	0.871499	77.77322	2.338502	0.071568	0.002684	0.025359
2013	14	0.044246	0.728176	371.9476	10.11705	0.031435	0.000767	0.017335
2014	14	0.047242	0.709015	317.6905	11.44229	0.058127	-0.00012	-0.00244
2015	14	0.05768	0.859103	258.221	7.533327	0.055906	9.35E-05	0.00162
2016	14	0.027311	0.759048	1017.646	9.201207	0.019403	0.000368	0.013467
2017	14	0.054961	0.374742	124.0573	4.452683	0.081787	0.00074	0.013467
2018	14	0.040078	0.224651	483.2789	7.53248	0.036854	0.000219	0.005452
2019	14	0.051135	0.47773	182.7055	7.492445	0.048638	0.000299	0.005847
2013	15	0.067204	0.629407	139.3591	1.499635	0.027719	0.000366	0.005445
2014	15	0.070869	0.741475	147.632	1.363192	0.028151	0.000214	0.003022
2015	15	0.068736	0.783009	165.7273	1.455486	0.027168	0.000262	0.003815
2016	15	0.069546	0.798147	165.0204	3.142233	0.033794	0.000369	0.00531
2017	15	0.063975	0.674433	164.7843	4.263302	0.034936	0.000562	0.008785
2018	15	0.057322	0.517439	157.4766	6.011637	0.033165	0.000293	0.005112
2019	15	0.059191	0.45696	130.4277	5.57563	0.034868	0.000563	0.009512
2013	16	0.09053	0.926906	113.0974	2.683347	0.074796	0.003394	0.037494
2014	16	0.091596	0.865627	103.1747	2.545561	0.080122	0.001234	0.013467
2015	16	0.142544	0.922469	45.39988	1.103661	0.097482	0.00192	0.013467
2016	16	0.103319	0.965129	90.41095	1.817284	0.10102	0.003485	0.03373
2017	16	0.094828	0.973976	108.3126	2.677686	0.098098	0.001277	0.013467
2018	16	0.109025	0.981488	82.5726	1.951958	0.107705	0.004759	0.043654
2019	16	0.102942	0.840059	79.27226	2.736834	0.111458	0.001386	0.013467
2013	17	0.100411	0.822282	81.55626	2.007874	0.073377	0.000405	0.004032
2014	17	0.097316	0.873401	92.22339	1.978163	0.066076	0.000219	0.002248
2015	17	0.115554	0.811274	60.75688	2.561324	0.071437	0.00152	0.013158
2016	17	0.090146	0.62104	76.42376	1.803541	0.06238	0.000289	0.003211
2017	17	0.084015	0.891014	126.2337	3.067286	0.075904	0.002791	0.033223
2018	17	0.08927	0.847016	106.2879	2.89558	0.080478	0.002906	0.032558
2019	17	0.076844	0.815048	138.0259	3.635442	0.070637	0.002271	0.029551
2013	18	0.098364	0.726037	75.03957	2.395313	0.080584	0.000573	0.005824
2014	18	0.085417	0.732139	100.3472	3.597409	0.078937	0.00091	0.010649
2015	18	0.091589	0.88583	105.599	2.389911	0.090834	0.001825	0.019927
2016	18	0.097046	0.864164	91.75768	3.158031	0.099786	0.002476	0.025512
2017	18	0.074078	0.658386	119.9771	5.080578	0.061636	0.001432	0.019328
2018	18	0.065996	0.617526	141.7838	5.906923	0.081544	0.002201	0.033344
2019	18	0.063742	0.614536	151.2478	5.784669	0.053883	0.000858	0.013467
2013	19	0.085545	0.697312	95.28692	3.422181	0.054495	0.000365	0.004264
2014	19	0.086667	0.834604	111.1152	3.214835	0.06406	0.001026	0.011842
2015	19	0.068938	0.93816	197.4037	3.660027	0.051018	0.000397	0.005755
2016	19	0.076492	0.883485	150.9948	4.350254	0.065821	0.000564	0.007376
2017	19	0.070661	0.78005	156.23	4.594737	0.063782	0.000435	0.006161

2018	19	0.068963	0.80183	168.5969	4.537986	0.063032	0.000744	0.010794
2019	19	0.0629	0.827007	209.0314	4.333561	0.057117	0.000186	0.002963
2013	20	0.043343	0.495682	263.8566	2.784532	0.028522	0.000185	0.004279
2014	20	0.04403	0.552684	285.0884	3.272878	0.027591	9.90E-05	0.002248
2015	20	0.048641	0.727904	307.6527	2.891052	0.031446	9.94E-05	0.002044
2016	20	0.051018	0.756588	290.6753	2.40426	0.033517	0.000528	0.010345
2017	20	0.04968	0.763914	309.5107	2.335608	0.034483	0.000404	0.008133
2018	20	0.048852	0.694865	291.1624	2.79714	0.035198	-0.00014	-0.00284
2019	20	0.045011	0.762776	376.5031	3.167107	0.03553	8.36E-05	0.001857
2013	21	0.070434	0.924701	186.3967	2.80704	0.026898	6.74E-05	0.000957
2014	21	0.061297	0.893401	237.7783	2.500363	0.023834	6.14E-05	0.001002
2015	21	0.062488	0.935824	239.6668	1.637417	0.027672	9.52E-05	0.001524
2016	21	0.063206	0.974325	243.8875	1.988839	0.027139	4.96E-05	0.000785
2017	21	0.063226	1.010334	252.7368	1.98304	0.029208	0.000117	0.001855
2018	21	0.053221	0.96234	339.7552	2.41285	0.024276	0.000863	0.016222
2019	21	0.057801	0.901269	269.7633	2.132511	0.025144	0.001239	0.021438
2013	22	0.068952	0.746601	157.034	0.966855	0.039034	0.000116	0.001677
2014	22	0.069581	0.746263	154.1394	1.091349	0.043642	0.000819	0.011765
2015	22	0.07646	0.739795	126.5453	0.843037	0.053939	0.000844	0.011035
2016	22	0.076097	0.728904	125.8753	0.986471	0.054947	0.001204	0.015822
2017	22	0.061001	0.733115	197.014	1.49647	0.046257	0.000311	0.005095
2018	22	0.065785	0.677117	156.4604	1.455865	0.044289	0.000364	0.005538
2019	22	0.057	0.69664	214.4178	2.028631	0.041743	0.00015	0.002636
2013	23	0.065487	0.750418	174.9807	1.729952	0.053931	0.000779	0.011896
2014	23	0.060321	0.742738	204.1282	2.553161	0.049631	0.000769	0.012748
2015	23	0.059204	0.843519	240.6511	1.91405	0.054261	0.000993	0.016778
2016	23	0.074395	0.956898	172.8925	1.748518	0.070867	0.002824	0.037963
2017	23	0.069774	0.974541	200.1762	2.291563	0.064007	0.001554	0.022274
2018	23	0.066381	1.012289	229.7271	2.115069	0.056301	0.001284	0.019344
2019	23	0.051073	0.741402	284.2295	3.835533	0.045829	0.000967	0.018937
2013	24	0.066307	0.318164	176.5581	7.663263	0.047109	0.002014	0.03038
2014	24	0.051724	0.205257	290.1506	4.85834	0.069596	0.000697	0.013467
2015	24	0.044853	0.660624	328.378	5.60262	0.038941	0.000328	0.007318
2016	24	0.10516	1.570621	70.19572	2.389634	0.096233	0.000309	0.002943
2017	24	0.092698	1.092549	127.1455	5.134458	0.090546	0.000765	0.008257
2018	24	0.045852	0.570955	271.5746	3.443588	0.044286	0.00012	0.00261
2019	24	0.058553	0.523583	152.7171	3.49911	0.052026	0.000789	0.013467
2013	25	0.088931	0.785196	99.28125	2.266222	0.079081	0.000925	0.010397
2014	25	0.077496	0.766394	127.6133	2.573273	0.087535	0.001654	0.021346
2015	25	0.05739	0.975368	296.1416	4.864765	0.074772	0.001806	0.031462
2016	25	0.088413	0.864696	110.6191	2.843314	0.075503	0.001679	0.01899
2017	25	0.083661	0.886644	126.6796	2.244889	0.071325	0.001173	0.014022
2018	25	0.088691	0.993368	126.2857	1.333619	0.070066	0.001048	0.011818
2019	25	0.082868	0.906045	131.9405	2.494155	0.06888	0.000746	0.008997
2013	26	0.094637	0.724954	80.94548	1.838196	0.062332	0.0016	0.01691

2014	26	0.093945	0.784465	88.88392	1.770393	0.066504	0.001423	0.015144
2015	26	0.103989	0.876962	81.09674	1.601255	0.072515	0.001204	0.011579
2016	26	0.104705	0.795875	72.59559	1.635746	0.089279	0.001595	0.015235
2017	26	0.094913	0.836161	92.82012	2.503928	0.08964	0.00115	0.012114
2018	26	0.081379	0.826288	124.7676	3.555145	0.091051	0.000774	0.009508
2019	26	0.095729	0.862394	94.10693	2.76379	0.101846	0.001829	0.019108
2013	27	0.148527	0.948609	43.00076	1.854914	0.094147	0.002563	0.017253
2014	27	0.142206	0.866473	42.84678	1.833902	0.090121	0.001265	0.008896
2015	27	0.118962	0.93565	66.11495	2.278108	0.081855	0.001796	0.015097
2016	27	0.119138	0.981732	69.16626	1.977755	0.101796	0.002669	0.022404
2017	27	0.087504	0.894052	116.7638	4.343882	0.096985	0.003451	0.039443
2018	27	0.084831	0.775233	107.7254	5.951688	0.106089	0.001142	0.013467
2019	27	0.090098	0.844633	104.0484	2.789105	0.086319	0.0025	0.027743
2013	28	0.077067	0.889183	149.7099	1.725917	0.035692	0.001035	0.013425
2014	28	0.076919	1.001394	169.2542	4.080389	0.034038	0.000252	0.003271
2015	28	0.072663	1.020407	193.2621	4.519601	0.034069	0.001047	0.014408
2016	28	0.072808	1.097456	207.0269	4.36265	0.036416	0.002225	0.030557
2017	28	0.057505	0.942088	284.8881	5.9579	0.030339	0.001309	0.02277
2018	28	0.061183	0.844908	225.7072	4.878571	0.033243	0.001673	0.027349
2019	28	0.06547	0.725582	169.2798	5.117661	0.031501	0.001344	0.020533
2013	29	0.076832	1.32863	131.4994	4.890151	0.04558	0.000613	0.007979
2014	29	0.054542	1.253088	260.9427	4.6484	0.031282	0.000664	0.012178
2015	29	0.059713	1.272555	217.7043	4.582928	0.036409	0.000568	0.009506
2016	29	0.055471	1.407239	252.2809	3.41575	0.0368	0.000712	0.012833
2017	29	0.055477	1.350969	252.2189	6.47508	0.050517	0.000644	0.011604
2018	29	0.051776	1.243836	289.5705	8.120867	0.062537	0.000537	0.010374
2019	29	0.054415	1.032458	348.6864	8.393008	0.056895	0.000422	0.007756
2013	30	0.069271	0.651631	135.7985	3.347865	0.059504	0.000667	0.009636
2014	30	0.084092	0.703761	99.52152	4.049164	0.111821	0.001132	0.013467
2015	30	0.054941	0.801889	265.6543	4.189724	0.039034	0.00237	0.043139
2016	30	0.061006	0.870186	233.8148	7.164166	0.043342	0.000822	0.013467
2017	30	0.049336	0.768633	315.782	9.802869	0.035051	0.000664	0.013467
2018	30	0.025305	0.657026	1026.072	20.76871	0.017978	-0.00033	-0.01289
2019	30	0.026459	1.057833	1511.003	9.497415	0.018798	0.000356	0.013467
2013	31	0.112259	1.07685	85.44969	0.453292	0.091913	0.001512	0.013467
2014	31	0.114554	0.816878	62.24979	0.418261	0.095727	0.001543	0.013467
2015	31	0.117519	0.758532	54.92384	0.508592	0.106835	0.001583	0.013467
2016	31	0.037102	1.514043	563.9062	5.478861	0.031202	0.000535	0.014428
2017	31	0.031087	1.476557	803.2464	6.852281	0.027408	0.00021	0.006742
2018	31	0.035134	1.463955	628.8775	5.978251	0.023967	5.03E-05	0.001431
2019	31	0.101042	1.561895	76.03319	2.487011	0.02684	0.000102	0.001011
2013	32	0.037613	0.905252	639.8816	11.52996	0.051622	0.00067	0.017823
2014	32	0.040588	0.90485	549.255	10.73658	0.055669	0.000734	0.018095
2015	32	0.046999	0.905172	409.7759	9.231695	0.064673	0.000837	0.017819
2016	32	0.050822	0.905155	350.4509	8.654785	0.070692	0.000913	0.017971

2017	32	0.052724	0.708547	254.8886	7.586667	0.058778	0.000514	0.009751
2018	32	0.061369	0.617314	163.9101	4.209911	0.061369	-0.00014	-0.00234
2019	32	0.062249	0.872331	225.1213	5.974659	0.055162	0.001085	0.017435
2013	33	0.065936	0.555596	127.7939	1.78695	0.027888	0.000811	0.012306
2014	33	0.07707	0.555628	93.54307	1.38899	0.02958	0.001056	0.013699
2015	33	0.081134	0.55575	84.42566	1.366178	0.033822	0.001106	0.013638
2016	33	0.066677	0.480341	108.0421	1.996084	0.027263	5.07E-05	0.00076
2017	33	0.056424	0.429555	134.924	1.88306	0.031386	0.00021	0.003714
2018	33	0.050462	0.40282	158.1888	1.697015	0.033781	0.000289	0.005727
2019	33	0.048381	0.342117	331.6405	1.583338	0.032871	0.000318	0.006568
2013	34	0.08425	0.761435	107.2728	3.731861	0.069233	0.002185	0.025937
2014	34	0.070932	0.745039	148.0807	4.483093	0.058303	0.001989	0.028043
2015	34	0.073266	0.771358	143.6972	4.536989	0.062945	0.001986	0.027107
2016	34	0.083128	0.744433	107.7293	3.954183	0.078298	0.002176	0.026179
2017	34	0.089742	0.744446	92.43685	3.792801	0.081737	0.002228	0.024826
2018	34	0.08847	0.639254	81.67329	3.15831	0.080116	0.001668	0.01885
2019	34	0.089009	0.722174	91.15393	3.673909	0.068439	0.00189	0.021239
2013	35	0.097073	0.679589	72.11959	1.836266	0.100555	0.001925	0.019834
2014	35	0.095984	0.625494	67.89259	1.764744	0.093732	0.001819	0.018949
2015	35	0.118252	0.604849	43.25462	1.477482	0.122612	0.002468	0.020874
2016	35	0.115337	0.844486	63.48254	1.59872	0.158842	0.001553	0.013467
2017	35	0.043333	1.555493	413.4006	11.04225	0.030786	0.001189	0.027434
2018	35	0.063961	1.566056	189.749	6.005798	0.045442	0.000861	0.013467
2019	35	0.031686	1.211755	1206.928	17.77254	0.022512	0.000888	0.028016

Appendix VII: Pre-Interest Cap Data

YEAR	BANK	FP	BL	BS	PD	BE	RM	M
2013	1	0.128207	0.745017	12.87608	0.341748	0.540411	0.004374	17.3
2014	1	0.118182	0.75208	13.10285	0.379661	0.502235	0.010887	16.5
2015	1	0.105765	0.815213	13.23228	0.334288	0.513494	0.006298	16.1
2013	2	0.079745	0.878096	12.5344	0.071475	0.493443	0.014017	17.3
2014	2	0.138285	0.872092	12.75006	0.069193	0.519612	0.007424	16.5
2015	2	0.130951	0.890131	12.96702	0.070805	0.529195	0.009015	16.1
2013	3	0.120668	0.781642	12.35109	0.333333	0.623656	0.017505	17.3
2014	3	0.112478	0.824529	12.5616	0.336449	0.626168	0.011699	16.5
2015	3	0.105384	0.785983	12.74419	0.365651	0.592798	0.017258	16.1
2013	4	0.108112	0.838108	12.30316	0.296596	0.439501	0.006069	17.3
2014	4	0.117194	0.79674	12.31266	0.313327	0.449818	0.010656	16.5
2015	4	0.106058	0.699819	12.36293	0.292133	0.445837	0.038133	16.1
2013	5	0.135059	0.803997	12.23921	0.324547	0.557446	0.010066	17.3
2014	5	0.125256	0.784121	12.32759	0.306985	0.515766	0.010892	16.5
2015	5	0.122311	0.910409	12.39204	0.307209	0.530242	0.01175	16.1
2013	6	0.085512	0.727509	12.10355	0.206595	0.532003	0.011095	17.3
2014	6	0.085835	0.912393	12.10625	0.228823	0.524202	0.007957	16.5
2015	6	0.073628	0.985811	12.24746	0.191882	0.538898	0.00864	16.1
2013	7	0.087071	0.831005	12.02287	0.23105	0.429202	0.008103	17.3
2014	7	0.079494	0.84271	12.26216	0.224608	0.427985	0.006182	16.5
2015	7	0.075936	0.876947	12.51212	0.227782	0.39617	0.01211	16.1
2013	8	0.087165	0.945834	11.85909	0.159065	0.37851	0.005137	17.3
2014	8	0.07843	1.027376	11.94577	0.15342	0.327516	0.007731	16.5
2015	8	0.075484	0.984925	12.16346	0.140388	0.347273	0.006047	16.1
2013	9	0.091771	0.507432	11.43557	0.190016	0.752884	0.007127	17.3
2014	9	0.080696	0.62674	11.72069	0.215041	0.815967	0.007998	16.5
2015	9	0.07581	0.604521	11.70561	0.231397	0.8255	0.013467	16.1
2013	10	0.106368	0.556145	11.17385	0.446292	0.342175	4.11E-05	17.3
2014	10	0.093302	0.472407	11.28223	0.386609	0.428186	0.00376	16.5
2015	10	0.097258	0.472142	11.38676	0.337688	0.325324	0.007051	16.1
2013	11	0.063819	0.563054	10.85942	0.083133	0.245482	0.003054	17.3
2014	11	0.058633	0.58314	11.034	0.070485	0.257985	0.002994	16.5
2015	11	0.059374	0.58603	11.12988	0.083992	0.38587	0.019408	16.1
2013	12	0.086612	0.846244	10.87205	0.252685	0.741617	0.018237	17.3
2014	12	0.078249	0.92304	11.0383	0.267461	0.857642	0.013441	16.5
2015	12	0.061663	0.79597	11.14591	0.26264	0.681648	0.013467	16.1
2013	13	0.14485	0.807998	10.68084	0.270189	0.665715	0.011488	17.3
2014	13	0.129573	0.804587	11.03221	0.294558	0.618697	0.010073	16.5
2015	13	0.115365	0.886352	11.30567	0.263624	0.662045	0.003814	16.1
2013	14	0.044246	0.728176	10.51616	0.447642	0.71046	0.017335	17.3
2014	14	0.047242	0.709015	10.73496	0.540553	1.230415	-0.00244	16.5

2015	14	0.05768	0.859103	10.86718	0.434524	0.969246	0.00162	16.1
2013	15	0.067204	0.629407	10.80894	0.100782	0.412455	0.005445	17.3
2014	15	0.070869	0.741475	10.9136	0.096608	0.397225	0.003022	16.5
2015	15	0.068736	0.783009	11.08217	0.100045	0.395255	0.003815	16.1
2013	16	0.09053	0.926906	9.727883	0.242923	0.826201	0.037494	17.3
2014	16	0.091596	0.865627	9.620926	0.233164	0.874728	0.013467	16.5
2015	16	0.142544	0.922469	9.55648	0.15732	0.683871	0.013467	16.1
2013	17	0.100411	0.822282	9.683713	0.201613	0.730769	0.004032	17.3
2014	17	0.097316	0.873401	9.890909	0.192508	0.67898	0.002248	16.5
2015	17	0.115554	0.811274	10.11484	0.295972	0.618214	0.013158	16.1
2013	18	0.098364	0.726037	9.333	0.235612	0.819245	0.005824	17.3
2014	18	0.085417	0.732139	9.634169	0.30728	0.924138	0.010649	16.5
2015	18	0.091589	0.88583	9.586377	0.218891	0.991754	0.019927	16.1
2013	19	0.085545	0.697312	9.93518	0.292752	0.637033	0.004264	17.3
2014	19	0.086667	0.834604	10.00211	0.27862	0.739153	0.011842	16.5
2015	19	0.068938	0.93816	10.18934	0.252316	0.740054	0.005755	16.1
2013	20	0.043343	0.495682	8.990815	0.12069	0.658046	0.004279	17.3
2014	20	0.04403	0.552684	9.249753	0.144105	0.626638	0.002248	16.5
2015	20	0.048641	0.727904	9.261604	0.140625	0.646484	0.002044	16.1
2013	21	0.070434	0.924701	9.521055	0.197711	0.381894	0.000957	17.3
2014	21	0.061297	0.893401	9.75522	0.153264	0.388836	0.001002	16.5
2015	21	0.062488	0.935824	9.904487	0.102318	0.442846	0.001524	16.1
2013	22	0.068952	0.746601	9.459931	0.066667	0.566102	0.001677	17.3
2014	22	0.069581	0.746263	9.586926	0.075937	0.627219	0.011765	16.5
2015	22	0.07646	0.739795	9.589393	0.064458	0.705461	0.011035	16.1
2013	23	0.065487	0.750418	8.85495	0.11329	0.823529	0.011896	17.3
2014	23	0.060321	0.742738	8.969287	0.154008	0.822785	0.012748	16.5
2015	23	0.059204	0.843519	9.047351	0.11332	0.916501	0.016778	16.1
2013	24	0.066307	0.776265	8.218787	0.50813	0.71046	0.03038	17.3
2014	24	0.051724	0.776265	8.467162	0.251293	1.345528	0.013467	16.5
2015	24	0.044853	0.660624	8.95944	0.251293	0.868195	0.007318	16.1
2013	25	0.088931	0.785196	8.896862	0.201538	0.889231	0.010397	17.3
2014	25	0.077496	0.766394	9.089866	0.199418	1.129549	0.021346	16.5
2015	25	0.05739	0.975368	9.239705	0.279188	1.302876	0.031462	16.1
2013	26	0.094637	0.724954	9.175542	0.173961	0.658643	0.01691	17.3
2014	26	0.093945	0.784465	9.234057	0.16632	0.7079	0.015144	16.5
2015	26	0.103989	0.876962	9.254644	0.166513	0.697332	0.011579	16.1
2013	27	0.148527	0.948609	9.472782	0.275505	0.633868	0.017253	17.3
2014	27	0.142206	0.866473	9.667829	0.260792	0.633734	0.008896	16.5
2015	27	0.118962	0.93565	9.85781	0.271007	0.688077	0.015097	16.1
2013	28	0.077067	0.889183	11.70407	0.133012	0.46313	0.013425	17.3
2014	28	0.076919	1.001394	11.88662	0.313859	0.442516	0.003271	16.5
2015	28	0.072663	1.020407	12.01841	0.328408	0.468869	0.014408	16.1
2013	29	0.076832	0.776265	10.76615	0.375721	0.593244	0.007979	17.3

2014	29	0.054542	0.776265	11.01801	0.253534	0.573534	0.012178	16.5
2015	29	0.059713	0.776265	11.17967	0.273662	0.609722	0.009506	16.1
2013	30	0.069271	0.651631	9.652587	0.231911	0.858998	0.009636	17.3
2014	30	0.084092	0.703761	9.716495	0.340502	1.329749	0.013467	16.5
2015	30	0.054941	0.801889	9.579833	0.230189	0.71046	0.043139	16.1
2013	31	0.112259	1.07685	9.653743	0.050886	0.818754	0.013467	17.3
2014	31	0.114554	0.816878	9.737669	0.047913	0.835652	0.013467	16.5
2015	31	0.117519	0.758532	9.737551	0.059769	0.909091	0.013467	16.1
2013	32	0.037613	0.905252	8.558527	0.433673	1.372449	0.017823	17.3
2014	32	0.040588	0.90485	8.588769	0.43578	1.37156	0.018095	16.5
2015	32	0.046999	0.905172	8.546558	0.433884	1.376033	0.017819	16.1
2013	33	0.065936	0.555596	9.214332	0.117825	0.422961	0.012306	17.3
2014	33	0.07707	0.555628	9.204222	0.10705	0.383812	0.013699	16.5
2015	33	0.081134	0.55575	9.23308	0.110843	0.416867	0.013638	16.1
2013	34	0.08425	0.761435	10.30558	0.31441	0.821755	0.025937	17.3
2014	34	0.070932	0.745039	10.52873	0.317993	0.821954	0.028043	16.5
2015	34	0.073266	0.771358	10.5799	0.332408	0.859126	0.027107	16.1
2013	35	0.097073	0.679589	9.125762	0.178251	1.035874	0.019834	17.3
2014	35	0.095984	0.625494	9.231123	0.169388	0.976531	0.018949	16.5
2015	35	0.118252	0.604849	9.172846	0.174715	1.036874	0.020874	16.1

Appendix VIII: Post-Interest Cap Data

YEAR	BANK	FP	BL	BS	PD	BE	RM	M
2017	1	0.110389	0.846133	13.37959	0.322197	0.490243	0.013992	13.7
2018	1	0.10052	0.848212	13.47908	0.319945	0.483239	0.006458	13.1
2019	1	0.093817	0.779762	13.70856	0.334172	0.45882	0.016603	12.4
2017	2	0.112097	0.747949	13.17013	0.277968	0.542753	0.009732	13.7
2018	2	0.080873	0.654422	13.25931	0.37448	0.538893	0.013133	13.1
2019	2	0.081861	0.727433	13.42051	0.375934	0.529013	0.01249	12.4
2017	3	0.107518	0.883438	12.86595	0.324519	0.608173	0.024025	13.7
2018	3	0.105638	0.801687	12.93233	0.295183	0.588214	0.007498	13.1
2019	3	0.106025	0.801363	13.03256	0.354031	0.573557	0.00952	12.4
2017	4	0.093188	0.629616	12.56278	0.329452	0.48017	0.028066	13.7
2018	4	0.097318	0.570081	12.56166	0.213789	0.524896	0.010551	13.1
2019	4	0.092507	0.597696	12.61864	0.212916	0.556064	0.001714	12.4
2017	5	0.11158	0.94559	12.51053	0.279496	0.55463	0.017713	13.7
2018	5	0.085651	0.855097	12.69109	0.241203	0.61176	0.021826	13.1
2019	5	0.078866	0.819786	12.83443	0.232861	0.629655	0.021555	12.4
2017	6	0.067404	0.839968	12.42416	0.259334	0.650245	0.021151	13.7
2018	6	0.068933	0.765216	12.5796	0.249526	0.55327	0.014079	13.1
2019	6	0.071239	0.786816	12.62355	0.26135	0.643551	0.020619	12.4
2017	7	0.070922	0.683687	12.80299	0.198906	0.409842	0.021173	13.7
2018	7	0.069287	0.643574	12.84191	0.197203	0.439532	0.014031	13.1
2019	7	0.066152	0.657839	12.86419	0.214168	0.465832	0.005148	12.4
2017	8	0.074503	0.91541	12.38886	0.153111	0.33311	0.030045	13.7
2018	8	0.079179	0.782292	12.57253	0.172292	0.359947	0.022832	13.1
2019	8	0.074474	0.763173	12.66125	0.170095	0.389549	0.003627	12.4
2017	9	0.083314	0.555401	11.60708	0.265348	0.831549	0.0144	13.7
2018	9	0.069822	0.48327	11.65137	0.248285	0.943135	0.003872	13.1
2019	9	0.075123	0.527549	11.62581	0.249465	1.090131	0.043273	12.4
2017	10	0.096883	0.577716	11.49509	0.430598	0.330356	0.000941	13.7
2018	10	0.107124	0.482506	11.3579	0.422171	0.384892	0.006506	13.1
2019	10	0.097111	0.416687	11.47802	0.436447	0.397953	0.004726	12.4
2017	11	0.068198	0.578138	11.47348	0.118975	0.229103	0.008624	13.7
2018	11	0.055937	0.407727	11.72005	0.064671	0.2504	0.01032	13.1
2019	11	0.054078	0.400621	11.87277	0.130839	0.29471	0.016467	12.4
2017	12	0.045192	0.867478	10.90027	0.487546	1.076766	0.000256	13.7
2018	12	0.044539	0.703406	10.80123	0.458829	1.044831	-0.0075	13.1
2019	12	0.040413	0.479551	10.69185	0.439258	1.452193	0.013467	12.4
2017	13	0.094786	0.917867	11.14382	0.271631	1.065008	0.021416	13.7
2018	13	0.108519	0.909865	11.11261	0.280253	0.774477	0.027294	13.1
2019	13	0.105857	0.871499	11.27617	0.247546	0.676083	0.025359	12.4
2017	14	0.054961	0.374742	10.88661	0.244724	1.488087	0.013467	13.7
2018	14	0.040078	0.776265	11.23027	0.301887	0.919563	0.005452	13.1

2019	14	0.051135	0.47773	10.9053	0.383124	0.951167	0.005847	12.4
2017	15	0.063975	0.674433	11.26445	0.272745	0.546092	0.008785	13.7
2018	15	0.057322	0.517439	11.51429	0.344599	0.578571	0.005112	13.1
2019	15	0.059191	0.45696	11.61436	0.330026	0.58907	0.009512	12.4
2017	16	0.094828	0.973976	9.50718	0.253918	1.034483	0.013467	13.7
2018	16	0.109025	0.981488	9.463974	0.212811	0.9879	0.043654	13.1
2019	16	0.102942	0.840059	9.381011	0.281736	1.082719	0.013467	12.4
2017	17	0.084015	0.891014	10.35188	0.257697	0.903459	0.033223	13.7
2018	17	0.08927	0.847016	10.41409	0.258487	0.901513	0.032558	13.1
2019	17	0.076844	0.815048	10.46661	0.279363	0.919229	0.029551	12.4
2017	18	0.074078	0.658386	9.761924	0.376361	0.832037	0.019328	13.7
2018	18	0.065996	0.617526	9.791438	0.389831	1.235593	0.033344	13.1
2019	18	0.063742	0.614536	9.839642	0.368729	0.845318	0.013467	12.4
2017	19	0.070661	0.78005	10.14984	0.324668	0.902655	0.006161	13.7
2018	19	0.068963	0.80183	10.23946	0.312953	0.91399	0.010794	13.1
2019	19	0.0629	0.827007	10.28861	0.27258	0.908058	0.002963	12.4
2017	20	0.04968	0.763914	9.163354	0.116034	0.694093	0.008133	13.7
2018	20	0.048852	0.694865	9.198976	0.136646	0.720497	-0.00284	13.1
2019	20	0.045011	0.762776	9.253591	0.142553	0.789362	0.001857	12.4
2017	21	0.063226	1.010334	10.16531	0.12538	0.46196	0.001855	13.7
2018	21	0.053221	0.96234	10.38397	0.128414	0.45613	0.016222	13.1
2019	21	0.057801	0.901269	10.49327	0.123261	0.435012	0.021438	12.4
2017	22	0.061001	0.733115	9.667955	0.091286	0.758299	0.005095	13.7
2018	22	0.065785	0.677117	9.692087	0.095775	0.673239	0.005538	13.1
2019	22	0.057	0.69664	9.704183	0.115632	0.732334	0.002636	12.4
2017	23	0.069774	0.974541	9.266437	0.159892	0.917344	0.022274	13.7
2018	23	0.066381	1.012289	9.260558	0.140401	0.848138	0.019344	13.1
2019	23	0.051073	0.741402	9.424968	0.195893	0.897314	0.018937	12.4
2017	24	0.092698	1.092549	8.780326	0.475954	0.976783	0.008257	13.7
2018	24	0.045852	0.570955	9.637697	0.157895	0.965861	0.00261	13.1
2019	24	0.058553	0.523583	9.685829	0.204883	0.888535	0.013467	12.4
2017	25	0.083661	0.886644	9.582662	0.187809	0.852554	0.014022	13.7
2018	25	0.088691	0.993368	9.788413	0.11828	0.790006	0.011818	13.1
2019	25	0.082868	0.906045	9.983269	0.206685	0.831198	0.008997	12.4
2017	26	0.094913	0.836161	9.234155	0.237654	0.944444	0.012114	13.7
2018	26	0.081379	0.826288	9.233666	0.289316	1.118848	0.009508	13.1
2019	26	0.095729	0.862394	9.139703	0.264574	1.063901	0.019108	12.4
2017	27	0.087504	0.894052	9.867964	0.380107	1.108348	0.039443	13.7
2018	27	0.084831	0.775233	10.13892	0.504891	1.250582	0.013467	13.1
2019	27	0.090098	0.844633	10.18339	0.251293	0.958054	0.027743	12.4
2017	28	0.057505	0.942088	12.23647	0.342611	0.527581	0.02277	13.7
2018	28	0.061183	0.844908	12.24725	0.298486	0.54333	0.027349	13.1
2019	28	0.06547	0.725582	13.11174	0.335052	0.481151	0.020533	12.4
2017	29	0.055477	0.776265	11.12049	0.359221	0.910595	0.011604	13.7

2018	29	0.051776	0.776265	11.01185	0.420465	1.207842	0.010374	13.1
2019	29	0.054415	1.032458	10.9412	0.456706	1.045573	0.007756	12.4
2017	30	0.049336	0.768633	9.319015	0.483636	0.71046	0.013467	13.7
2018	30	0.025305	0.657026	9.289891	0.525547	0.71046	-0.0129	13.1
2019	30	0.026459	1.057833	8.257126	0.251293	0.71046	0.013467	12.4
2017	31	0.031087	0.776265	9.699472	0.213018	0.881657	0.006742	13.7
2018	31	0.035134	0.776265	9.636457	0.210037	0.682156	0.001431	13.1
2019	31	0.101042	0.776265	9.638871	0.251293	0.265635	0.001011	12.4
2017	32	0.052724	0.708547	8.541105	0.4	1.114815	0.009751	13.7
2018	32	0.061369	0.617314	8.586906	0.258359	1	-0.00234	13.1
2019	32	0.062249	0.872331	9.043813	0.371917	0.886148	0.017435	12.4
2017	33	0.056424	0.429555	9.741792	0.10625	0.55625	0.003714	13.7
2018	33	0.050462	0.40282	9.976784	0.085635	0.669429	0.005727	13.1
2019	33	0.048381	0.776265	10.11957	0.076603	0.679434	0.006568	12.4
2017	34	0.089742	0.744446	10.59923	0.340372	0.910809	0.024826	13.7
2018	34	0.08847	0.639254	10.54389	0.279416	0.90557	0.01885	13.1
2019	34	0.089009	0.722174	10.64666	0.32701	0.768902	0.021239	12.4
2017	35	0.043333	0.776265	9.463198	0.478495	0.71046	0.027434	13.7
2018	35	0.063961	0.776265	9.215626	0.384137	0.71046	0.013467	13.1
2019	35	0.031686	1.211755	9.132054	0.56314	0.71046	0.028016	12.4

Appendix IX: Research Authorization Letter

MOI UNIVERSITY
POSTGRADUATE OFFICE
SCHOOL OF BUSINESS AND ECONOMICS

Tel: 0790940508
0771336914
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P.O. Box 3900
Eldoret.
Kenya

RE: MU/SBE/PGR/ACD/21B **DATE:** 29th July, 2022

TO WHOM IT MAY CONCERN:

RE: HILLARY KIPKOECH SITIENEI - SBE/DPHIL/BM/008/2016

The above named is a bonafide student of Moi University School of Business and Economics, undertaking **Doctor of philosophy** degree; specializing in **Strategic Management**.

He has successfully completed the coursework, defended his proposal, and is proceeding to the field to collect data for his research titled: ***"Bank Strategy, Interest Capping Environment and Firm Performance in Kenya"***

Any assistance accorded to him will be highly appreciated.

Yours faithfully,

SCHOOL OF BUSINESS & ECONOMICS
MOI UNIVERSITY
P. O. Box 3900 ELDORET 30100

DR. RONALD BONUKE
POSTGRADUATE CHAIR, SB&E

/tc

Appendix X: NACOSTI Research License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **910365**

Date of Issue: **25/August/2023**

RESEARCH LICENSE

This is to Certify that Mr.. HILLARY KIPKOECH SITIENEI of Moi University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Uasin-Gishu on the topic: BANK STRATEGY, INTEREST CAPPING ENVIRONMENT AND FIRM PERFORMANCE IN KENYA for the period ending : 25/August/2024.

License No: **NACOSTI/P/23/29064**

910365

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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See overleaf for conditions

Appendix XI: Plagiarism Awareness Certificate

SR269

ISO 9001:2019 Certified Institution

EDU 999 THESIS WRITING COURSE

PLAGIARISM AWARENESS CERTIFICATE

This certificate is awarded to

HILLARY KIPKOECH SITIENEI

SBE/DPHIL/BM/08/2016

In recognition for passing the University's plagiarism

Awareness test for Proposal: **BANK STRATEGY, INTEREST CAPPING ENVIRONMENT AND FIRM PERFORMANCE IN KENYA** with a similarity index of 4% and striving to maintain academic integrity.

Awarded by:

Prof. Anne Syomwene Kisilu
CERM-ESA Project Leader Date: 4/09/2023