BASEL ACCORD REQUIREMENTS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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DECLARATION

This thesis is my original work and has not been presented for a degree award in any other university. No part of this thesis may be reproduced without prior authority of the author and / or Kenyatta University.

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DEDICATION

Thesis dedication goes to late grandparents Mr. James Mathina Muriu and Mrs Hannah Njoki Mathina who set a good foundation of education in my life and may their souls rest in eternal peace, to my mother Naomi Wanjiku for always encouraging and standing with me, to my children Brian Wanderi, James Mathina and Catherine Wangui and spouse Anthony Githua for unwavering love, prayers with encouragement which has taken me this far and finally to my loving sister Hannah Njoki and auntie Mary Wambui for their love and encouragement.

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OPERATIONAL DEFINITION OF TERMS

Basel accord requirements: Banking regulations in regard to capital, market discipline and supervisory review.

Basel: A city located in Switzerland where internationally acceptable banking regulations are discussed and agreed.

Capital: Shareholder's funds. In this study capital was measured by the proportion of shareholder's funds to total risk weighted asset.

Commercial bank: Financial institution that provides services including; acceptance of deposits and granting of loans to individual customers and corporations with a goal of enhancing financial performance.

Credit risk: Risk arising from obligor's failure to honor contractual terms with the bank causing capital and earnings decline.

Financial performance: Use of the resources invested by the shareholders efficiently to generate revenue. In this study financial performance was proxied by return on assets.

Market discipline:	Commercial banks' disclosure of financial and non-financial information to the public through financial reports which aid in understanding their operational procedures. In this study market discipline was proxied by corporate disclosure index.
Market risk:	Risk of losses arising from shift in market prices resulting from off and on-balance sheet positions which are; interest rate risks, commodity risks and foreign exchange risks.
Market share:	The percentage of total banking deposits, assets, capital & reserves, deposit and loans accounts held by commercial bank. In this study market share was measured by market share index.
Operational risk:	Risk of loss ensuing from either external events, insufficient or unsuccessful systems, people or processes.
Shareholder's funds:	Equity capital.
Supervisory review:	Oversight of banks in order to detect unsound practices which can cause adverse effect to a bank or whole economy. In this study supervisory review was measured by the natural logarithm of the number of

audits in an individual bank done by the central bank of Kenya.

ABBREVIATIONS AND ACRONYMS

AFDB: African Development Bank

AQ: Asset quality

ASF: Adjusted Shareholders fund

BCBS: Basel Committee on Banking Supervision

BCOS: Board size

BCP: Basel Core Principles

BS: Bank Size

CAR: Capital Adequacy Ratio

CBK: Central Bank of Kenya

CBN: Central Bank of Nigeria

CCBR: Capital Conservation Buffer

CLRM: Classical Linear Regression Model

CRWA: Capital to Risk Weighted Assets

DC: Deposit Customers

ECB: European Central Bank

ERC: Earnings Response Coefficient

FEM: Fixed Effect Model

FGLS: Feasible Generalized Least Square

GDP: Gross Domestic Product

GDPGR: Gross Domestic Product Growth Rate

GFC: Global Financial Crisis

GMM: Generalized Method of Moments

IFRS: International Financial Reporting Standards

IMF: International Monetary Fund

IR: Inflation Rate

LC: Loan Customers

MD: Market Discipline

ME: Management Efficiency

MFC: Mortgage Finance Company

NIM: Net Interest Margin

NPLs: Non-Performing Loans

NPLR: Non-Performing Loans Ratio

NNPA: Net Non-Performing Asset

NSE: Nairobi Securities Exchange

PAT: Profit After Tax

REM: Random Effect Model

ROA: Return on Assets

ROD: Ratio of Outside Directors

ROE: Return on Equity

ROI: Return on Investment

SR: Supervisory Review

TQC: Total Qualifying Capital

ABSTRACT

An efficient, stable and well-functioning banking system contributes to the economic growth of a country. However, the decline in financial performance of commercial banks in Kenya based on average return on assets is of high concern among various stakeholders, that is, the average return on assets was reducing over the period of study, 4.7% in 2013, 3.4% in 2014, 2.9% in 2015, 3.3% in 2016, 2.7% in 2017, 2.7% in 2018, 2.6% in 2019 and 1.7% in 2020 despite the introduction of banking regulations in regard to capital, supervision and market discipline by the central bank of Kenya. Basel II is the second Basel accord requirements and is based on three main pillars including capital, supervisory review and market discipline. It is therefore vital for banking institutions to understand the linkage between Basel accord requirements and financial performance in order to enhance financial performance in the long run. The general objective of the study was to investigate the effect of Basel accord requirements on financial performance of commercial banks in Kenya. Specifically, the study aimed to determine the effect of capital, supervisory review and market discipline on financial performance of commercial banks in Kenya. The study further sought to establish the moderating effect of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya. The study was founded on asymmetry information theory, buffer theory of capital, relative market power hypothesis and agency theory. Positivism research philosophy and casual research design were employed. The target population comprised of forty-three commercial banks from which a sample of thirty-eight commercial banks was obtained. Commercial banks which were actively operating and not under statutory management during the period of study were selected. Thus, the study used purposive sampling technique. Data for the period between 2013-2020 was extracted from the bank supervision annual reports and individual bank's published annual reports using document review guide (Appendix I). Data analysis involved descriptive statistics (maximum and minimum values, standard deviation and mean) and inferential analysis (panel regression and correlation analysis). The study conducted panel unit root test, multicollinearity test, normality test, heteroscedasticity test and autocorrelation test to avoid spurious results. The 5% significance level was used to test the research hypotheses. Correlation results show that supervisory review, market discipline and market share were positively and significantly correlated with financial performance of commercial banks in Kenya while capital had a positive insignificant correlation with financial performance. The panel regression findings showed that market discipline had a positive insignificant effect on financial performance of commercial banks in Kenya as measured by return on assets while capital and supervisory review had a positive significant effect on financial performance of commercial banks in Kenya. Market share had a negative significant moderating effect on the relationship between capital and return on assets of commercial banks in Kenya. Market share had a negative insignificant moderating effect on the relationship between supervisory review, market discipline and financial performance of commercial banks in Kenya. The conclusion of the study was that Basel accord requirements including capital, supervisory review and market discipline jointly explains the variation in financial performance of commercial banks in Kenya. Further, increase in capital and supervisory review enhances financial performance. The study thus recommends that the central bank of Kenya and other regulatory bodies like capital market authority should design banking policies for implementing Basel accord requirements and enhancing financial performance of commercial banks in Kenya.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Following the global financial crisis amid 2008-2009, Basel committee on banking supervision (BCBS) established banking restructurings to be implemented by all commercial banks globally so as to enhance the global financial system hence preventing future financial crisis from occurring (Walter, 2016). Thus, Basel accord requirements were announced and reviewed by regional supervisory committees and national controllers in an effort to assess better means of incorporating in their specific financial systems. Basel accord requirements are banking regulations in regard to capital, banking supervision, market discipline, leverage and liquidity (Quaglia, 2019). Supervision, transparency & information disclosure, leverage, capital and liquidity were financial crisis lessons that form Basel accord requirements (Quaglia & Spendzharova, 2017). In accordance with Calice (2010) credit bubble, persistent innovation in financial products, techniques, result from poor implementation of Basel accord requirements which was linked with global financial crisis.

A recent survey by the financial stability board (2013) reports that global crisis, resulting from high level of borrowing, reduced amount of capital than required level by authorities, less banking supervision, reduced transparency and disclosure as well as insufficient liquidity by various banks had a huge impact across the world. Hence, due to trading and credit losses made previously by banks, many of them failed due to the fact that they were not able to absorb those losses (International Monetary Fund, 2012). Consequently, these shortcomings

in the banking industry were quickly spread globally leading in a substantial reduction of credit and liquidity (Moreno, 2011).

Zaiwen, Xianhua, Xin, Xhaodi and Xiaoling (2013) study in China indicates that today, financial institutions especially commercial banks are required to meet stricter capital particularly big banks as requirements of Basel accord. Thus, the foundations of improvement in financial performance and robust financial system originate from adequate capitalization to banks and banking supervision that is effective (Witte & Deuchert, 2012). However, Lukomga and Kay (2010) argue that developed countries rely on capital accord as the only instrument for banks regulation unlike banks in developing economies which require more regulatory instruments other than capital accord due to the regulatory flaws they are facing.

From 1980, Claessens and Horne (2012) explain that foreign banks penetration in Sub Saharan have been on upward trajectory either through subsidiaries or branches. Owing to foreign banks entry in Sub Saharan Africa (SSA), fortunes for local banks has dropped occasioned by declines. To amplify value contribution of commercial banks liberalization and regulatory adjustments has been adopted. These measures have been approved to alter traditional banking approach which was characterized by limited entry and exit strategies, unstable capital and limited control of liquidity and reserve levels and flexible determination of loan interest rates (Munyambonera, 2013).

A report by central bank of Kenya (CBK) (CBK, 2015) outlines that in Kenya's financial institutions, commercial banks occupy large share as they serve intermediation banking services. Commercial banks are the principal constituent of financial sector and their financial performance is very critical since through intermediation process, they are able to link savers

and borrowers of funds (Shukla, 2014). Thus, their financial performance has a direct effect on the overall economy. Consequently, their financial performance is paramount for the sake of their contribution in economic growth and development (Moreno, 2011). According to Witte and Deuchert (2012) economic growth and development is casually influenced by financial sector. Financial performance of a bank is the capacity to generate sustainable profitability or it's the ability of a bank to employ available resources efficiently to increase shareholders' wealth and generate sustainable profits. This in turn strengthens its capital base through retained earnings that ensure future profitability (European central bank, 2016).

The CBK, is tasked with appropriate monetary system functioning, sound financial policy formulation and implementation as per finance ministry (CBK, 2015). Commercial banks in Kenya are required to maintain capital above the minimum level set by CBK. In addition, CBK introduced net stable funding and liquidity coverage ratios as well as countercyclical macro prudential measures but which are yet to be implemented (CBK, 2018). The present study then sought to find out the impact of Basel accord requirements on financial performance of commercial banks in Kenya.

Commercial banks have in some cases been targets of unending market disorder, existing financial and debt crisis contributing to collapsing of some banks (Lilius, 2012). According to Nowak (2011) a hurting component of financial institutions and economic system is financial crises as a result of lack of proper implementation of Basel accord requirements. Nevertheless, Kcharem (2014) opines that banks importance to economic growth and failure have impelled the monitoring of the banking sector as well as compelling banks in adoption of standards on capital by Basel committee. Studies on Basel accord requirements as detailed

in empirical literature review mostly focused on the effect of one aspect only on financial performance. Besides that, the reviewed studies mostly focused on direct relationship of Basel accord requirements on financial performance and failed to incorporate moderating variable on Basel accord requirements and financial performance relationship. Therefore, the present study established the effect of various aspects of Basel accord requirements on financial performance in a single study and also tested the market share moderation effect between financial performance and Basel accord requirements relationship.

In regards to Kenya Bankers Association (KBA), Kcharem (2014) and Muriithi *et al.* (*2016*) points out that appeals for improved financial standards have been the point of focus with onset of worldwide financial crisis, as world financial sector is ever-changing. In this way, CBK began the implementation of Basel accord requirements by strategic planning roadmap. However, financial institutions are still prone to financial distress implying that the Basel accord requirements have not been fully implemented to strengthen their leverage and liquidity bases (Ndung'u, 2007; Nkirote & McFie, 2016). Additionally, the status of the influence of Basel accord requirements on the financial performance has not been currently published with references to the three pillars of Basel II. Therefore, the study filled the gap by examining the effect of Basel accord requirements on financial performance of commercial banks in Kenya and also the moderating role of market share on the relationship between financial performance and Basel accord requirements.

1.1.1 Financial performance of commercial banks

Financial performance is the ability of a firm to employ the available resources efficiently in order to generate revenue. Shukla (2014) defined financial performance as the bank capability

to create maintainable profits or it's the ability of a bank to employ available resources to increase shareholders' wealth and generate sustainable profits. The current study thus, defined financial performance as the use of the resources invested by the shareholders efficiently and effectively to generate revenue. From literature, there are two types of financial performance measures, namely, traditional and market based measures. Traditional financial measures include; cost to income (CI) return on equity (ROE), return on assets (ROA), non-performing loans ratio (NPLR), percentage change of pre-tax profits (%GPBT) and net interest margin (NIM). Market based financial measures include; total shareholders returns, price to book value and P/E ratio (Makori, 2017; Muriithi *et al.*, 2016; Mwangi, Makau & Kosimbei, 2014; Odonkor & Barmor, 2012). The commercial banks financial performance was mainly arrived using ROA since it considers all the assets utilized to generate revenue for the firm, in addition, the banks largest assets consists of bank loans and they are the largest source of earnings. Thus the per Kenyan shilling return on assets is key to the commercial banks management (Muriithi *et al.,* 2016). Moreover, CBK employs return on assets to assess the financial performance of commercial banks in Kenya (CBK, 2015). The present study therefore used return on assets to measure financial performance of commercial banks in Kenya.

Commercial banks of European member countries have been struggling to return to profitability after the 2008-2009 global financial crisis. For instance, European union banks (EUB) profitability remained lower than before the crisis time with the average return on equity (ROE) declining from 4.4% in 2015 to 3.5% in 2016 and from 6.1% in 2018 to 5.4% in 2019 (KPMG, 2019; Ernst & Young, 2019). The ROE seem to be very low since the cost of capital was about 10% for most EUB after the global financial crisis. Non-performing

loans ratio (NPLR) are still high in some of EU member countries after the crisis. For example, Greece NPLR in 2016 was 46.9% and in 2017 was 46.5% while Cyprus NPLR in 2016 was 47.4% and in 2017 was 42.7% (KPMG, 2017). Financial performance of commercial banks in Kenya declined as noted by average return on assets over the study period as shown in table 1.1 and figure 1.1.

Table 1.1: Return on assets (ROA)

Year	2013	2014	2015	2016	2017	2018	2019	2020
Average ROA(%)	4.7	3.4	2.9	3.3	2.7	2.7	2.6	1.7

Source: Banking supervision annual reports (2013-2020)

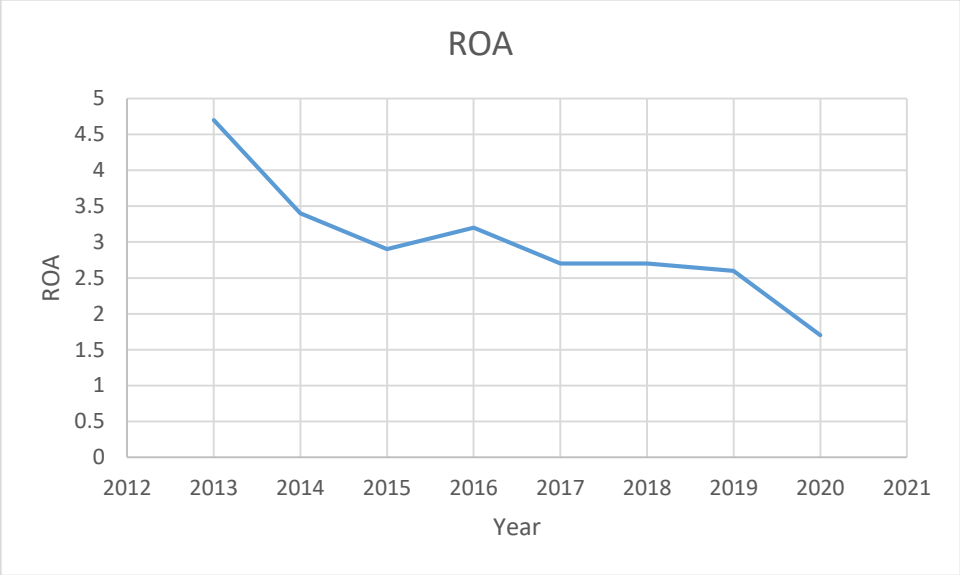

Figure 1.1: Average return on assets (ROA)

Source: Banking supervision annual reports (2013-2020)

Table 1.1 and Figure 1.1 indicate that return on assets on 2013 was at 4.7% which reduced to 3.4% in 2014 and further to 2.9% in 2015. In 2016 return on assets raised to 3.2% a time when

interest capping was introduced by the government of Kenya. But in 2017, return on assets dropped to 2.7%, remained constant in 2018 at 2.7% while in 2019 return on assets, further reduced to 2.6% a time when the government of Kenya abolished the interest capping. In 2020, return on assets reduced further to 1.7%.

1.1.2 Basel accord requirements

Basel accord requirements are the banking regulations in regards to capital, banking supervision, market discipline, leverage and liquidity (Demirguc-Kunt & Huizinga, 2014). There are three Basel accord requirements which include; Basel I, Basel II and Basel III (Fapetu & Kolapo, 2015). In 1974, international cooperation on commercial banks was founded by the committee referred as Basel Committee on Banking Supervision (BCBS), (Walter, 2016). BCBS aimed at enhancing quality of commercial banks supervision and financial performance, which later changed to monitoring and evaluating quality of capital adequacy and banking services.

Basel accord requirements originated in 1979 following the collapse of Bretton woods system that managed exchange rates which resulted from the financial market turmoil. Foreign banks for instance, Bankhaus Herstatt's bank of Germany and Franklin National bank of New York closed their doors after incurring huge foreign exchange losses. This led to creation of the accord Basel I (Arsel, 2011; Demirguc-Kunt & Huizinga, 2014). Basel I clearly stipulates capital which would minimize likelihood of borrowers of loans from commercial banks defaulting in repayment of either principal or interest amount or both (default risk). Basel I was later modified to incorporate market risks which are changes in the financial instruments market prices.

In 2004, Basel committee due to the shortcomings in Basel I which was said to consider only default risk and ignoring other types of risks introduced Basel II which was more comprehensive in capital adequacy (Chinoda, Chingombe & Chawuruka, 2015). Basel II was set up in triplicate of three pillars; pillar I dealt on minimum capital with new methods of capital measurement, market risks and operational risks. Pillar II focused on the supervisory review through internal capital evaluation mechanisms. Pillar III focused on supporting market discipline through improved disclosure by banks for sufficient competition within the banking sector (Demirguc-Kunt & Huizinga, 2011). In an implementation survey by central bank of Kenya in year 2008, it was evident that majority of the local associates of foreign banks were prepared to implement Basel II in year 2008 while most of the local banks were ready to execute Basel II in year 2010 (CBK, 2010). The challenges identified in the survey report as hindering the implementation of Basel II include; "talent war" as banks look for upscaling their employees, advancements and renovations of existing information technology systems to meet the information requirements for Basel II (CBK, 2010). The adoption of Basel II started in year 2013 January, where central bank of Kenya revised the prudential and risk management guidelines. Basel II was fully implemented by commercial banks operating in Kenya by year 2018 (CBK, 2018).

Executing Basel accord requirements is compulsory to member countries but voluntary to countries not members of Banking Supervision Committee. However, developing countries like Kenya are under pressure to adopt the Basel accord framework since the lending programs of International Monetary Fund (IMF) and world bank come with conditions attached of compliance with international regulatory benchmarks (Hohl *et al.* (2018). The implementation status of Basel II across countries between 2013 to 2020 is shown in table 1.2.

Table 1.2: The status of adoption for Basel II requirements

Status	Basel II pillars	Country
Full implementation	Pillar I- Capital Pillar II- Supervisory review Pillar III- Market discipline	Kenya, Nigeria, South Africa, Egypt, Malawi, Jordan, Mexico, Morocco, Bangladesh.
Partial implementation	Pillar I- Capital	Afghanistan, Angola, Armenia, Bhutan, Senegal, Tanzania, Zambia.
	Pillar II- Supervisory review	Afghanistan, Angola, Armenia, Senegal, Zambia, Bhutan
	Pillar III- Market discipline	Angola, Armenia, Bhutan, Senegal, Zambia.
No short-term plans to implement	Pillar I, Pillar II, Pillar III	Sierra Leone, Uganda, Ethiopia.

Source: Hohl, Soson, Stastny & Zamil (2018)

Table 1.2 shows the status of implementation of Basel II by different countries. For instance, countries like Kenya, South Africa have fully adopted Basel II in their financial system while other countries like Tanzania, Zambia have partially executed Basel II. Finally, some countries like Uganda, Ethiopia, have no plans to implement Basel II in their banking systems.

In 2010 CBK issued prudential guidelines that called for implementation of the elements of Basel accord requirements (Prudential Guidelines, 2013). In Basel II pillar I (minimum capital) commercial banks have adopted standardized approach in calculation of market risk, default risk and basic indicator approach while calculating operational risk. Pillar II (supervisory review) banks have adopted onsite and off-site examinations, stress testing and internal capital adequacy assessment process (CBK, 2015). Pillar III, banks have adopted the quarterly reporting to the public about their financial position.

Basel III was issued in 2010 and aimed at harmonizing regulations to minimize likelihood of financial stress, creation of transparent banking operations and dynamic risk management strategies (CBK, 2015). This was through incorporation of banking ratios which evaluate leverage, liquidity and capital. Moreover, commercial banks are required to create cash reserves which would insure against volatile business environment that may threaten their cyclical demand. Additionally, commercial banks are required to adopt matching capital management strategy (Girardone *et al.*, 2004). In Africa, some countries, such as South Africa and Tunisia, have committed to the Basel accord requirements in their entirety while others, including Egypt, Kenya and Nigeria, are slowly integrating the aspects that banking supervisors have determined to be well suited for their jurisdictions. The African Development Bank (AfDB) urged its members in 2011 to move towards Basel III, although carefully in recognition that full implementation or the prescribed implementation timeline may not be a perfect fit for every African country (Chortareas, Girardone & Ventouri, 2012). Egypt only declared in 2012, for instance, that it had successfully implemented Basel II. Basel accord requirements implementation in most African economies is very challenging (Hohl *et al.,* 2018**)**. Nigeria began implementing Basel II and III concurrently, however the central

bank of Nigeria (CBN) clarified that though the duo accords as a whole had merit, it perceived some aspects of the Basel accord requirements as out of step with the realities of the Nigerian economy (Altunbas, Carbo, Gardener & Molyneux, 2007).

Selective approach was adopted in Basel accord requirements adoption in Kenya (CBK, 2015). In 2013, central bank of Kenya issued guidelines that called for implementation of some of the Basel accord regulations based on a selective approach. For instance, Basel II pillars have been fully executed while capital buffer is the only component of the Basel III implemented and it is calculated as accumulated weighted assets bank's risk of 2.5% (CBK, 2015). The Basel III aspects of leverage ratio, liquidity and counter cyclical macro-prudential regulations are yet to be implemented. The elements of Basel accord requirements are discussed in the following paragraphs.

Capital is the amount of shareholder's funds that a regulator directs banks to maintain as per the prudential guidelines (Chinoda *et al.,* 2015). In Basel accord requirements capital is the main quantitative evaluation criterion for appraising commercial banks conditions for risk adjustments (Abdalla & Noor, 2014). Capital are assessed on attributes such as risk management incentives adopted by commercial banks. Credit risk is the possibility of losing either the principal plus interest amount or either principal or interest resulting from the borrower's failure to perform his/ her duties as per the contract terms (Abdalla *et al.,* 2014). From the literature reviewed, it was evident that capital is an essential variable that affects the financial performance of banks (Udom & Onyekachi, 2018; Otwani, Namusonge & Nambuswa, 2017). Besides, large banks usually maintain capital beyond the regulatory level

or increases their capital when it nears the required level for the fear to incur penalties imposed by regulatory authorities (Odonkor & Barmor, 2012).

Assfaw (2018) noted that banks holding more capital tend to invest in risky portfolios. Further, the study recommended that banks should decide the level of capital to hold above the required limit which must correspond with the level of risks they are exposed to. When banks hold more capital than the compulsory level, it reduces financial performance by tying up funds which could be invested in profitable projects. At the same time, if banks hold less capital than stipulated by the regulator, it increases the chances of financial crisis (Nkirote & McFie, 2016). Kipruto, *et al.* (2017) observed that when commercial banks are well capitalized, this reduces the chances of a bank collapsing and thus increasing financial performance. Further, Odonkor and Barmor (2012) established that there was a link between capital and financial performance. That is, well implemented capital policies improved financial performance of commercial banks.

Commercial banks of Kenya are required by CBK to maintain minimum capital adequacy ratios of 8% and 12%, that is, shareholder's funds to total risk weighted assets (TRWA) and shareholder's funds plus borrowed funds to TRWA respectively (Prudential guidelines, 2013). Basel III regulations have required all commercial banks to hold buffer capital of 2.5% of its RWA which should be created when the economy is growing. Commercial banks should maintain capital adequacy ratio at 10.5% while total capital adequacy ratio at 14.5% (Prudential guidelines, 2013). The current study measured capital using shareholder's funds divided by total risk weighted assets. Intra and intercountry commercial banks evaluation has documented that there is congruence on determinants of commercial banks' ability to manage

likelihood of experiencing external negative shocks. In Kenya, commercial banks were expected to increase capital to Kenyan shillings one billion in year 2012 as per Banking Amendment Act of (2012).

Supervisory review is the standard adopted by commercial banks to evaluate the extent to which commercial banks are adhering to stipulated rules guiding banking operations in their respective countries (Fapetu & Kolapo, 2015). Supervisory review ought to be implemented by both regulatory agencies and respective commercial banks. Internally, banks ought to develop their own assessment criterion on adherence to capital adequacy and information disclosure strategies adopted. Supervisory review call for adoption of recommended accounting standards and policies. Recently, commercial banks have adopted varied risk management models through asset liability matching strategies. This has amplified levels of accounting data transparency (David & Muendo, 2018). To achieve supervisory review standards, commercial banks should invest in reasonable risk levels. From literature reviewed, it was noted that supervisory review increased financial performance of commercial banks (Beck, Demirguc-Kunt & Ross, 2006; Barth, Lin, Ma, Seade & Song, 2013). The present study operationalized supervisory review as the oversight of banks in order to identify insecure practices which can be risky to economy or banks. Previous studies measured supervisory review by interventionist supervisory (Chortareas *et al.,* 2012), onsite examination by supervisors (Beverly, Anna & Matthew, 2016), minimum frequency of examination (Rezende & Wu, 2014), Basel core principles index (Beck, Demirguc-Kunt & Ross, 2006; Barth *et al.*, 2013). In December 2020, 40.46% commercial banks were ranked strong, 54.05% ranked satisfactory, 4.15% ranked fair, 1.25% ranked marginal while 0.09% ranked unsatisfactory. Supervisory review was measured using the natural logarithm of the

number of audits made by central bank of Kenya in an individual bank. Delis and Staikouras (2011) noted that improved supervision enhanced financial performance of banks while reducing financial crisis. In addition, Ruzende and Wu (2014) argues that frequent examination of banks by the regulators made the banks to adhere to the regulations set by the regulatory authority and therefore, reducing loan losses and increasing financial performance. Faten *et al.* (2014) noted that onsite and off-site examination of commercial banks improved their financial performance hence reducing the chances of failure.

Market discipline is financial disclosure of information in the published reports of commercial banks so as to aid in decision making by stakeholders (Hawashe, 2015). Market discipline refers to non-financial information that a bank should disclose to the public as required by regulatory body which is the central bank (Awadha & Alareeni, 2018). It enhances measures adopted by commercial banks for prudent risk management. Moreover, it amplifies corporate transparency and provides a tool for rewarding and punishing non-performance amongst managers (Hawashe, 2015). It is mostly evaluated through extent of voluntary disclosure and risk management strategies adopted by banks (Aanu, Oluku & Clementina, 2015). It calls for measures to enhance its compliances which might be achieved through market mechanism for penalizing excessive risk intake. Proponents for it argue that commercial banks have high likelihood of engaging in moral hazard which would jeopardize investors return (Altunbas *et al.,* 2007). Although, this risk may be mitigated through deposit insurance fund, there are no disciplinary measures against investment in risky projects. Furthermore, central bank as lender of last resort role may precipitate them on unwarranted risk exposure. This is clearly manifestation of regulatory arbitrage. Disclosure of financial information by commercial banks to the public assisted the investors to make informed decisions and also increased

financial performance of banks (Quayes & Hasan, 2013; Zer, 2015). Furthermore, big organizations have a habit of disclosing additional information voluntarily as compared to their counterparts thus enhancing their financial performance (Klerk, Villiers & Staden, 2015; Sharif & Ming, 2015). Awadha and Alareeni (2018) established that banking supervision increased financial performance of commercial banks and assisted investors to make informed decisions during investment. Market discipline was measured using corporate disclosure index where if an item was disclosed scored a 1 or a 0 otherwise (Mutiva, Ahmed & Wambui, 2015; Aanu *et al.*, 2015; Nier & Baumann, 2006).

1.1.3 Market share

Market share refers to a bank's deposits in relation to total bank industry deposits for a certain period (Genchev, 2012). Etale, Bingilar and Ifurueze (2016) explained market share as a firm's sales relative to total sales in an industry for a certain period. According to Arif and Awwaliyah (2018) banks with large market share satisfy their customers' needs than firms with small market share. Banks with high market share enjoy competitive advantage against smaller banks whose market share is low (Genchev, 2012). Previous studies have measured market share using bank deposits to total deposits ratio, proportion of loans & advances in an individual bank as compared to the banking industry, total bank assets to total assets in the bank industry (Etale *et al.*, 2016; Arif *et al.*, 2018; Genchev, 2012). Commercial banks in Kenya are classified into 3 tiers by their regulator using a market share index. A bank is termed as large if its market share index is more than five percent, medium if its market share index is between one percent and five percent and small if its market share index is below one percent (CBK, 2020). Market share index includes the number of deposit and loan accounts, capital, assets and customers' deposits. For the year ended 31 December, 2020, there were

nine large banks, ten medium banks and nineteen small banks with a combined market share of 74.55%, 17.21% and 8.24% respectively as shown in table 1.1.

Table 1.3: Market share analysis of commercial banks

Peer Group	Combined weighted market share %	Number of Banks	Net Assets (Ksh. B)	Deposits (Ksh. B)	Capital & Reserves (Ksh.B)	Profit before tax (B)
Large	74.55	9	4,033	3,061	599	97
Medium	17.21	10	910	732	141	17
Small	8.24	19	463	330	68	-3
Total	100	38	5,406	4,123	807	111

Source: Central bank of Kenya (2020)

Table 1.3 indicates large banks had the largest share in profit before tax, capital, assets and deposits followed by medium banks and finally, small banks. Banks placed under statutory management were Imperial bank limited, Chase bank limited and Charter house bank limited hence all these banks were excluded from the market share analysis in table 1.3. The commercial banks profit before tax, capital, deposits, and net assets in Kenya was Kshs. (Billion) 111; 807; 4,123 and 5,406 respectively. The current study measured market share using a weighted composite index as adopted by the central bank of Kenya.

Birru (2019) carried a study on the elements of the insurance companies' profitability in Ethiopia using specific, industry and macroeconomic variables. The effect of market share on profitability was insignificant. The study recommendation was that market share to be tested

as a moderating variable by future studies. Further, Arif *et al.* (2018) evaluated the effect of concentration ratio and market share on financial performance of Islamic banks in Indonesia. The study reported that market share had an insignificant effect on financial performance. The study suggested that the moderating effect of market share be tested by future studies. Naylah and Cahyaningratri (2020) carried out a study on the effect of market share on financial performance of commercial banks in Indonesia. The findings of the showed that market share had a positive and insignificant effect on financial performance. The study recommended that market share be included as a moderator variable instead of an explanatory variable. Thus, the current study tested the moderating effect of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.

1.1.4 Commercial banks in Kenya

The history of banking industry in Kenya commenced in 1896 when Kenya commercial bank (KCB) started its operations. Later in 1968, co-operative bank of Kenya opened its doors. According to central bank of Kenya quarterly economic review (2020) as at 31st December 2020, Kenya financial sector consisted of a single mortgage finance company and forty-two commercial banks, CBK as the regulator, thirteen microfinance banks, three credit reference bureaus, nine foreign banks representative offices, nineteen money remittance providers, seventy foreign exchange bureaus and eight non-operating bank holding companies. From the total of forty-three banking institutions, placed under statutory management was Charterhouse bank, Chase bank and Imperial bank. However, Mayfair bank and Dubai Islamic bank limited were formed in 2017 hence the banks were not fully operational for eight years starting from 2013, thus, we had thirty-eight banking institutions as the remainder. In Kenya; Companies Act (Cap 486), the Banking Act (Cap 488), the CBK Act (Cap 491) and the various prudential

guidelines from CBK govern the banking sector. CBK ensures proper running of the Kenyan financial system, liquidity of the country and stability of the Kenyan shilling. The Kenya banks have expanded their activities to East African region. As a result of globalization challenges and changing customer needs, Kenya's banking sector automated its services to enhance better financial performance.

Kenya's commercial banks adoption of Basel standards was due to the alignment of regulators, interests of donors (world bank, International Monetary Fund). Basel I was fully implemented by commercial banks in Kenya by 1999 while Basel II execution started by 2013 when new prudential guidelines were issued by the regulator (central bank of Kenya). By the end of 2018 Basel II was fully adopted by commercial banks operating in Kenya using selective approach. Hence, this motivated the present study on the effect of Basel accord requirements on financial performance of commercial banks in Kenya (CBK, 2020). However, despite commercial banks operating in Kenya executing Basel accord requirements, over time of study (2013-2020) Dubai bank was liquidated in 2015 while Charter house bank, Imperial bank and Chase bank were placed under statutory management in 2006, 2015 and 2016 respectively. Moreover, financial performance of commercial banks in Kenya was declining between 2013 to 2020 as measured by return on assets; that is, 4.7% in 2013, 3.4% in 2014, 2.9% in 2015, 3.3% in 2016, 2.7% in 2017, 2.7% in 2018, 2.6% in 2019 and 1.7% in 2020. Thus, the current study was conducted to investigate the effect of Basel accord requirements on financial performance of commercial banks in Kenya.

1.2 Statement of the Problem

Commercial banks major role is for directing funds from surplus units to deficit units. Therefore, through this role commercial banks contribute directly to the economic growth and development of any country, thereby improving the lives of the citizens. Since the global financial crisis of 2008- 2009, financial performance of commercial banks in Kenya have recorded a downward trend (Ernst & Young, 2019). Therefore, the central bank of Kenya introduced Basel accord requirements for adoption by all commercial banks actively trading in Kenya so as to enhance their financial performance (CBK, 2013). Nonetheless, despite the momentous efforts by the central bank of Kenya, there have been a reduction in financial performance of commercial banks in Kenya between 2013 to 2020 as shown by return on assets; 4.7% in 2013, 3.4% in 2014, 2.9% in 2015, 3.3% in 2016, 2.7% in 2017, 2.7% in 2018, 2.6% in 2019 and 1.7% in 2020 (CBK, 2020). In addition, charter house bank, imperial bank and chase bank were put under statutory management in 2006, 2015 and 2016 respectively (CBK, 2015; CBK, 2016). The reduction in financial performance of commercial banks in Kenya may be linked to poor execution of Basel accord requirements policies.

In view of this, the researcher sought to investigate the effect of Basel accord requirements on financial performance of commercial banks in Kenya. Previous studies have established a relationship between Basel accord requirements and financial performance (David & Muendo, 2018; Udom & Onyekachi, 2018; Khamees, 2018; Hawashe, 2015; Odonkor & Barmor, 2012). However, most of these studies, have produced contradicting results on the effect of Basel accord requirements on financial performance. For instance, Udom and Onyekachi (2018) documented that capital related positively with financial performance while Odonkor and Barmor (2012) found a negative effect of capital on financial performance. Further, some

studies documented a positive effect of supervisory review on financial performance (Faten, Hachmi, Cheffon, & Fredji, 2014) whereas Khamees (2018) established a negative influence of supervisory review on financial performance. Market discipline and financial performance linkage showed mixed results also, for example, (Hawashe, 2015) indicated a positive effect of market discipline on financial performance while (Aanu *et al.,* 2015) reported negative association among market discipline and financial performance. The contradiction in findings may be attributed to omission of a moderating variable, considering only the effect of one element of Basel accord requirements and not including all the aspects of Basel accord requirements together in one study.

Besides, most of the studies were done in developed countries (Faten *et al.,* 2014; Klerk *et al.,* 2015) and their findings cannot be generalized in Kenya which is an emerging economy. Further, studies done in Kenya focused on the effect of one aspect of Basel accord requirements on financial performance. For instance, (Susan and Nasieku, 2016) considered the effect of capital only on financial performance, whereas (David & Muendo, 2018) covered the effect of market discipline only on financial performance and no study covered the effect of market discipline on financial performance. The above studies did not combine all the dimensions of Basel accord requirements in a single study so as to analyze the effect of Basel accord requirements on financial performance. Furthermore, the studies assumed direct relationships among variables. It is against this background that the study sought to fill in the existing gap and investigated the effect of Basel accord requirements on financial performance of commercial banks in Kenya and also tested the moderating effects of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.

1.3 Research Objectives

The study was guided by the following general and specific objectives.

1.3.1 General Objective

To investigate the effect of Basel accord requirements on financial performance of commercial banks in Kenya.

1.3.2 Specific Objectives

i. To establish the effect of capital on financial performance of commercial banks in Kenya.
ii. To examine the effect of supervisory review on financial performance of commercial banks in Kenya.
iii. To assess the effect of market discipline on financial performance of commercial banks in Kenya.
iv. To determine the moderating effect of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.

1.4 Research Hypotheses

The study tested the following null hypotheses.

H_{01}: Capital has no significant effect on financial performance of commercial banks in Kenya.

H_{02}: Supervisory review has no significant effect on financial performance of commercial banks in Kenya.

H_{03}: Market discipline has no significant effect on financial performance of commercial banks in Kenya.

H_{04}: Market share has no significant moderating effect on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.

1.5 Significance of the Study

The findings of the study on interlinkages amongst capital, supervisory review, market discipline, market share and financial performance are important to policy makers like central bank of Kenya (CBK), National Treasury, and even capital market authority (CMA) in that they may be helpful when formulating banking financial policies, prudential guidelines and rules for implementing Basel accord requirements and enhancing financial performance of commercial banks in Kenya.

The findings of the study further may assist the investors in making the right decision on where to save their money based on the financial performance of commercial banks in Kenya. Capital may help the investors to know which commercial bank is well capitalized hence profitable to invest in. Supervisory review may assist the investors to know which commercial bank is carrying out the banking activities as outlined by central bank of Kenya thus profitable to invest in.

The findings of the study also may be helpful to commercial banks so as to remain well capitalized, not engage on restricted banking activities, to disclose voluntarily any relevant information to the public through their published financial reports. The study further provided recommendations for future researchers and academicians interested in similar field.

1.6 Scope of the Study

The current study focused on the effect of Basel accord requirements on financial performance of commercial banks in Kenya and also how market share moderated the relationship between Basel accord requirements and financial performance. Specifically, the researcher studied the effect of capital, supervisory review and market discipline on financial performance of commercial banks in Kenya. The target population was forty-three commercial banks but only thirty-eight were chosen using purposive sampling technique since three banks were under statutory management while two banks were started in 2017 hence were in operation for less than eight years. Secondary panel data from 2013-2020 formed the eight years' period span for data collection. The period was chosen because it was over this time that three banks were put under statutory management. It was also during this period that CBK introduced the Basel accord requirements for implementation by all commercial banks operating in Kenya.

1.7 Limitations of the Study

Secondary data from banking supervision yearly reports and banks' published financial reports for eight years from 2013-2020 was collected. Cross-section data with time series data formed the panel data, therefore carrying out of the diagnostic tests was necessary. The study provided remedies to issues like non-stationarity of the data and heteroscedasticity. In addition, the study used STATA software which was able to deal with unbalanced panel data.

1.8 Organization of the Study

The study is structured into five chapters. Covered in chapter one includes, the study background, problem statement, objectives, hypotheses, study scope, significance and limitations of the study. In chapter two, examinations of study empirical and theoretical

literature. Chapter three presents the research methodology employed in realization of research objectives. Research discussions and findings of the study are presented in chapter four while chapter five includes the summary, conclusions, contributions to body of knowledge, study recommendations and areas requiring further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents review of theories that informed the study, empirical literature on the study variables including; capital, supervisory review, market discipline, financial performance of commercial banks, market share and a summary of research gaps and finally conceptual framework showing the relationship between independent, moderator and dependent variables.

2.2 Theoretical Review

The study was aligned to asymmetry information theory, buffer theory of capital, relative power hypothesis and agency theory.

2.2.1 Asymmetry information theory

Asymmetry information theory proponents were Akerlof (1970), Spence (1973) and Stiglitz (1961). Asymmetry information is a problem in borrowing and lending of money where the party borrowing has more information about his/her credit worthiness than the party lending. The disparity in information held by the borrower and the lender may result in market failure. In a banking context, information asymmetry may arise when the banks have more information about their operations than the regulator or where the borrower has relevant information than the lender when contracting. Difference in the information held by the parties to a contract may lead to a bank being rated as performing well by the regulator which may not be the case or a lender granting loan at a lower interest rate to a risky borrower which may not be the case. Thus sharing of information among the borrower and lender may reduce

adverse selection (Karim, Chan & Hassan, 2010). Richard (2011) observes that information asymmetry may cause both moral hazard and adverse selection as may be hard to distinguish between bad and good borrowers. Gofondi and Gobbi (2003) established that moral hazard and adverse selection has contributed to non-repayment of loans in commercial banks since the lender can make either right or wrong credit decision when granting loans due to the borrower failure to disclose all relevant information to the bank. Moral hazard arises when a party to a contract gives false information about its credit ability, liabilities and assets. While adverse selection arises when the lender cannot distinguish between higher and lower risk borrowers so as to know the risk premium to charge on loans. These information asymmetry problems may be reduced by screening the borrowers before granting them loans, information disclosure by banks to the public (David & Muendo, 2018).

This theory was applicable in the study in that, in a financial contract, commercial bank depends on the information provided by the borrower to make credit decision, when the borrower conceals relevant information to the loan agreement, commercial bank (lender) may either make right or wrong credit decision, since it may be hard to differentiate a bad borrower from a good borrower. Hence, this might lead to moral hazard and adverse selection which in turn may affects the financial performance of commercial banks through non-payment of interest on loans. This theory anchors on financial performance as the dependent variable. Further the theory anchors on supervisory review since the commercial banks may conceal information about their operations to the central bank (regulator). To mitigate the information asymmetry problems, the CBK should conduct regular audits to supervise if commercial banks have complied with the Basel accord requirements (David & Muendo, 2018; Khamees, 2018; Sudesh & Kumar, 2016). Hence, the study conceptualized supervisory review as the

number of CBK audits in an individual bank and established its effect on financial performance of commercial banks in Kenya.

2.2.2 Buffer theory of capital

The developers of buffer theory of capital were Calem and Rob (1996). The prediction that commercial banks fear the imposed penalties and hence they tend to maintain higher amount of capital beyond the set limit by regulators is the basis of the theory. Further, the theory suggests that undercapitalized banks tend to rise their capital towards the internally set target level while overcapitalized banks tend to keep their capital at the target level (Guidarra, Soumare and Tchana (2013). In addition, banks with higher capital than the regulatory level tend to reduce their lending activities hence increasing the lending rate due to higher demand of loans by customers. The held up capital is used by banks to issue loans at bad times in the economy. Moreover, undercapitalized banks tend to either use their retained profits or issue new equity which seems costly to the bank (Krug, Legnick & Wohitmann, 2015). The theory therefore, predicts a positive connection between capital and financial performance of commercial banks. According to Guidarra *et al.* (2013) and Tabak, Vasconcelos and Cajueiro (2013) capital adequacy positively influences bank financial performance. Buffer theory of capital was important in establishing the linkage amid capital and commercial banks financial performance in Kenya. Commercial banks tend to hold more money during times when the economy is growing and use the capital to survive at bad times of growth (Shim, 2013). Additionally, undercapitalized banks borrow more to support their assets compared to well capitalized banks (Munyamonera, 2013; Demirguc-Kunt & Huizinga, 2011). Consequently, the buffer theory of capital was key in establishing the linkage amongst capital and commercial banks financial performance in Kenya.

2.2.3 Relative market power hypothesis

The pioneer of the relative market power hypothesis was Bain (1951) who postulated that only large banks with innovative products may affect the price of different banking products hence increasing their financial performance. Relative market power hypothesis was an improvement of the structure-conduct performance hypothesis which predicted that when banks are many their collusion increases profitability since they are able to raise the lending rates (Bain, 1951). Hoose (2010) established that there was correlation among market concentration, market share and financial performance of firms. Mirzaei, Moore and Liu (2013) linked greater market share with increased bank profitability in emerging economies. Besides, Khan, Ahmed and Gee (2018) related increased bank financial performance with high market share. The findings of (Hoose, 2010; Mirzaei *et al.*, 2013; Khan *et al.*, 2018) correspond with the relative market hypothesis but Bhatti (2010) result deviated from hypothesis revealing that high market share leads to low profitability of banks. Moderating effect of market share was established by the relative market power hypothesis between Basel accord requirements and commercial banks financial performance in Kenya.

2.2.4 Agency theory

The first proponents of agency theory were Mitnick (1973, 1975) and Ross (1975) and later advanced by Jensen and Meckling (1976). Agency relationship is covenant where one party or parties (principal) involve another party (agent) to implement tasks on their behalf which includes delegating to agent authority. The mostly identified agency relationship is the one between shareholders and company executives being as principals and agents respectively. This theory argues that agency problem occurs due to information asymmetry, limited earnings, risk preference, separation of ownership and control, duration of involvement as

well as moral hazard (Mitnick, 1973, 1975; Jensen & Meckling, 1976). Agency theory argues that separation of ownership from control makes it difficult for the contributors of capital to monitor properly the behavior of managers in misusing the assets of the firm for their own benefits. Moreover, the owners and the managers of the organization have different risk preferences, that is, the owners are risk takers while the managers are risk averse (Mitnick, 1975). In addition, the managers are present in an organization for a limited time and try to maximize their own benefits over that period before moving to a new organization. Also, managers are important stakeholders of a company but they only get limited earnings inform of compensation (Jensen & Meckling, 1976; Mitnick, 1973). Further, in relation to information asymmetry, the managers manage the company and thus they know all the information concerning the owners' business and the owners depend on them to obtain information relating to their business. Also, in relation to moral hazard, the owners better understand the risks involved in the projects invested while the managers are not aware of the risks the projects are exposed to but carry out their duties in good faith (Ross, 1975). The theory further provides that, when there is asymmetric information between the agent and the principal, it may lead to conflict between them and may be minimized by disclosure of more information in final reports of the firm (Jensen & Meckling, 1976).

The agency theory was criticized by pepper and Gore (2012) in that, it only put into consideration the agency cost, agency conflict and rearrangement of the principal and agent interests in order to reduce the agency problems. In addition, Daily, Dalton and Rajagopalan (2003) noted the limitations of the agency theory as; it considers the goal of the proprietors of the firm as maximization of their wealth but their role in the firm is limited. Second, the directors' role in the firm is considered as monitoring the managers only. Third, the managers

of the firm competences are ignored and only considered as opportunistic. The agency problems may be minimized by increasing the disclosure of information so as to reduce information asymmetry between the executive officers and the shareholders of the bank hence increasing the financial performance of the banks (Nier & Baumann, 2006). Larger firms tend to disclose more information than smaller firms so as to reduce agency costs hence increasing the profitability of the firms (Hawashe, 2015). Agency theory claims that profitability is enhanced when more information is disclosed in the annual accounts of the firm (Quayes & Hasan, 2013). Klerk *et al.* (2015) noted that managers tend to give more information to the public so as to increase their pay. From literature reviewed, market discipline has been identified as a key factor that affect profitability of a firm (Mutiva *et al.,* 2015; Aanu *et al.,* 2015). Commercial banks disclose information to the shareholders, other stakeholders and investors in their annual reports. According Zer (2015) disclosure of information in the annual reports reduces the information asymmetry between managers and investors and also increases the value of a bank. Zer (2015) noted that large bank avails detailed information in yearly reports in contrast to banks that are small. Based on the opinions of the theory the study established the influence of market discipline on financial performance of commercial banks in Kenya.

2.3 Empirical Review

This section reviewed studies on Basel accord requirements and commercial banks financial performance. Similarly, empirical review on moderating effect of market share was presented.

2.3.1 Capital and Financial Performance

Basel II defined capital as tier I capital (common stock), tier II capital (revaluation reserve, medium and long-term subordinated loans and tier III capital (lower-quality unsecured, subordinated debt).

Assfaw (2018) examined bank specific factors affecting private banks financial performance in Ethiopia. Bank specific factors used in the study were; bank size (BS), liquidity management (LM), capital adequacy (CA), management efficiency (ME), asset quality (AQ). Financial performance was measured using ROA, ROE and NIM. The study analyzed data by multiple linear regression, correlation and descriptive statistics and applied explanatory research design. The results showed that all bank specific measures had positive effect on financial performance measures except LM and AQ which showed negative effect on all financial performance measures. Further, capital adequacy was noted as an essential variable in determination of the financial performance. The results of the study were congruent with the results by Otwani *et al.* (2017). However, the study by Assfaw (2018) concentrated on private banks which may limit the generalization of the results to all banks. Moreover, the study was done in Ethiopia where the conditions are different from those in Kenya. Furthermore, the study excluded the effects of supervisory review and market discipline and also assumed direct relationships among variables.

Udom and Onyekachi, (2018) conducted a study on capital adequacy and financial performance of commercial bank in Nigeria. The capital adequacy was represented by total qualifying capital (TQC), capital to risk weighted assets (CRWA) and adjusted shareholders fund (ASF), while profitability was denoted by ROA. GDP rate and inflation rate (IR) were

utilized as control variables. Quantitative research design was adopted. Granger causality techniques, regression analysis and descriptive statistics aided secondary data analysis. The results of the study indicated that capital adequacy measures, GDPGR and IR did not influence ROA. The results contrasted those of Kipruto *et al.* (2017) but supported the findings by Susan and Nasieku (2016). However, the study by Udom and Onyekachi, (2018) was a direct relationship study. Additionally, the Udom and Onyekachi, (2018) study considered the influence of capital and omitted the effects of market discipline and supervisory review. Furthermore, the study was conducted outside Kenya where the economic, political and social structures are dissimilar from those in Kenya.

Kipruto, *et al.* (2017) studied on the effect of capital adequacy on financial performance of commercial banks in Kenya. Panel data was collected and evaluated using multiple regression and descriptive statistics. Kipruto, *et al.* (2017) study reported that capital adequacy affected financial performance and that well capitalized banks lessen the bankruptcy risk and improves financial performance. The results of the study were consistent with the results by Chinoda *et al.* (2015) study. However, the study by Kipruto *et al.* (2017) involved second tier banks which may limit the generalization of the findings to the entire banking sector. Moreover, the study considered the effect of capital and excluded the effects of supervisory review and market discipline and the moderating effect of market share on capital and financial performance relationship.

Otwani *et al.* (2017) studied the Nairobi Securities Exchange (NSE) company's financial performance and capital in Kenya. Capital indicators were capital structure, asset size, cash flows and portfolio risks while financial performance was denoted by return on investment

(ROI) and profitability. Qualitative and quantitative research design were used and data analysis employed multiple regression. The results of the study reported insignificant positive effect of all indicators of capital adequacy on all financial performance measures. The results of the study corroborated the findings by Susan and Nasieku (2016) and Assfaw (2018) studies. However, the study by Otwani *et al.* (2017) considered non-financial companies listed in NSE, Kenya and financial companies like commercial banks which may limit the applicability of the findings in the present context. Additionally, the study assumed direct relationship between variables and also excluded the effects of market discipline, supervisory review.

Umoru and Osemwegie (2016) studied on the influence of capital adequacy on financial performance of commercial banks in Nigeria. Capital was measured using total capital to risk weighted assets while financial performance was proxied by profit after tax (PAT) and ROA. The study controlled the effects of asset quality, management efficiency, Liquidity and inflation. Empirical analysis involved both correlation and regression analysis. Results indicated that capital adequacy has significant effect on ROA but insignificant effect on PAT. All control variables influence on financial performance measures were negative except liquidity which shown significantly positive effect. The results of the study supported the results by Moussa *et al.* (2013) and Chinoda *et al.* (2015). However, the study by Umoru and Osemwegie (2016) concentrated on effect of capital only and not the effects of supervisory review and market discipline.

Susan and Nasieku (2016) conducted a study on capital and commercial banks financial performance in Kenya. Analyzing quantitative data was through descriptive statistics and

regression analysis. Descriptive research design was adopted. The findings of the study showed that capital had a positive insignificant impact on commercial banks financial performance. The results corroborated the findings by Udom and Onyekachi (2018) study which showed that capital has no effect on financial performance. However, Susan and Nasieku (2016) study considered only listed banks and this may hinder generalization of the findings to all commercial banks. Furthermore, the study excluded the effects of supervisory review and market discipline. Besides that, the study assumed direct relationship between the study variables.

Chinoda *et al.* (2015) investigated capital adequacy and financial performance of commercial banks in Zimbabwe. The study employed descriptive research design and analyzed data using regression analysis. The study established a positive impact between capital adequacy and financial performance. The study further reported that when banks are well capitalized it reduce the chances of bank bankruptcy hence enhancing financial performance of banks. However, the findings of the study were inconsistent with Udom and Onyekachi, (2018) findings which indicated capital and financial performance had no relationship. Moreover, Chinoda *et al.* (2015) results may not be applicable in a Kenyan context due to heterogeneity of operating environment. In addition, the study did not incorporate other dimensions of Basel accord requirements (supervisory review and market discipline).

Moussa *et al.* (2013) analyzed influence of capital on banks financial performance in Tunisia for the period between 2000 and 2009. Fixed effect model, correlation and descriptive statistics were used in data analysis. Capital was measured using equity to total asset ratio (ETA) where measurements of financial performance were ROA, ROE and NIM. A positive

relationship existed among capital and all financial performance measures, but only the relationship with ROA was statistically significant as study established. The results of the study were consistent with the findings by Assfaw (2018) study. However, the study assumed direct relationships between variables. Furthermore, the study was carried out in Tunisia where conditions are different from those dominant in Kenya. Besides that, the study excluded supervisory review and market discipline which are aspects of Basel accord requirements.

Odonkor and Barmor (2012) evaluated Ghanaian banks financial performance and capital adequacy. Capital adequacy was measured as capital adequacy ratio (CAR) while ROE and ROA, were measures of financial performance. The study reported a statistically insignificant negative relationship with ROA whereas significant negative relationship with ROE in association with capital adequacy. However, results contrasted with Assfaw (2018) findings which reported a positive and significant influence of capital on financial performance. The contradictions in outcome motivated the researcher to undertake a similar study in a Kenyan context. Furthermore, the study by Odonkor and Barmor (2012) excluded the effects of supervisory review, market discipline and assumed direct relationships on study variables.

2.3.2 Supervisory review and Financial Performance

According to Basel II supervisory review is a framework for regulatory bodies like Central banks for oversighting the banking activities of commercial banks (supervision of banks).

Plosser *et al.* (2016) did a research on supervision and bank financial performance in United States. Supervision was measured using supervisory hours while financial performance was measured using volatility in earnings. The findings informed that supervisors of large banks in a district recorded more hours as compared to small banks. Additionally, increased

supervision lead to less volatility in earnings and less risky lending. The study by Delis and Staikouras (2011) also identified bank supervision as a vital factor in improving the financial performance and reducing the riskiness of a bank. However, the study by Plosser *et al.* (2016) did not incorporate the effects of capital and market discipline and the moderating effect of market share on supervision and financial performance relationship. Moreover, the study was done in a developed country with different economic, political and social conditions than those present in Kenya.

Ruzende and Wu (2014) studied on the influence of bank supervision on bank financial performance in United States. Bank supervision was measured by onsite examination (frequency of examinations) while bank financial performance was measured by ROE, net interest margin/total loans, charge offs/total loans, provision for loans and leases/total loans. The study reported that frequent examination of banks by the regulators made the banks to hold safer assets and therefore reducing loan losses and increasing financial performance. The results of the study supported the results by Chortareas *et al.* (2012). However, the study of Ruzende and Wu (2014) considered only bank supervision effect on financial performance. Moreover, the study excluded market share moderating effect on bank supervision and financial performance relationship. Besides, the study was done in an advanced country where the conditions are different from those dominant in Kenya.

Faten *et al.* (2014) investigated regulations influence on supervision on European banks profitability. Profitability measures were ROE and ROA while supervision measurement was four components of six graded dimensions of banking supervision. The study applied Generalized Method of Moments (GMM) estimator. Banking regulations had significant

positive effect on profitability. Also, there was significant positive effect of deposit insurance, capital adequacy on profitability. Thirdly, increased banking regulations enhanced commercial banks financial performance. Faten *et al.* (2014) results supported Barth *et al.* (2013) findings. The study by Faten *et al.* (2014) however, assumed direct relationships of variables and was a cross-country level analysis and not bank level analysis. Additionally, the study did not test the effects of capital and market discipline.

Vighneswara (2014) carried out a study in the course of universal financial crisis on the effect of bank supervision, regulation on efficiency in BRICS countries. Supervision was proxied by power of supervisory agent and onsite examinations while financial performance was proxied by aggregate income, operating costs to assets ratio and NPL ratio. Vighneswara (2014) study reported that regulation, supervision and efficiency related significantly. The results of the study corroborated with Ruzende and Wu (2014) findings. However, the study by Vighneswara (2014) was a cross country analysis and not bank level analysis and assumed direct relationships among the study variables.

Barth *et al.* (2013) examined impact of monitoring, bank regulation and supervision on bank efficiency across nations. Data Envelopment Analysis (DEA), was a measure of bank efficiency, bank regulations were measured using restrictions on bank activities and capital stringency, supervision was measured using official supervisory power while monitoring was measured using financial transparency and disclosure of information to the public. Empirical analysis was done by panel regression models. Findings of the study reported a negative relationship among capital stringency, official supervisory power and bank efficiency due to tight limitations of bank activities while bank efficiency and market based monitoring related

positively. Barth *et al.* (2013) results contradicts the findings by Chortareas *et al.* (2012) which reported that bank supervision and bank efficiency related positively. Nonetheless, Barth *et al.* (2013) study was a cross country analysis and not bank level analysis. Also the study excluded the effect of capital and the moderating effect of market share on supervisory review and financial performance relationship.

Chortareas *et al.* (2012) investigated bank supervision and regulation on efficiency of European banks. Bank efficiency was proxied by product inefficiency, net interest margin and cost income ratio while supervision and regulation were proxied by an index comprising of interventionist supervisory, official supervisory powers and regulatory policies. The findings reported that official supervisory powers improved operations of the banks while interventionist supervisory and regulatory policies lead to higher bank inefficiency levels. Chortareas *et al.* (2012) results contradicted the findings by Barth *et al.* (2013) which reported that improved banking supervision decreased bank efficiency. However, Chortareas *et al.* (2012) study was a cross country analysis and different countries differ in their operating environment. Additionally, the study presumed direct relationships amongst study variables. Furthermore, the study excluded market discipline and capital as other aspects of Basel accord requirements.

Delis and Staikouras (2011) investigated the role of banking supervision in controlling bank risk across countries. Banking supervision was proxied by the on-site audits and sanctions. The results indicated existence of a linear relationship among on-site audits and bank risk but a non-linear relationship between sanctions and bank risk. Further, effective supervision reduced risk as noted in the findings. Plosser *et al.* (2016) noted that bank supervision

increased financial performance of banks. However, Delis and Staikouras (2011) study was a cross country analysis and not bank level analysis. Moreover, the study assumed direct relationships between variables and related banking supervision with bank risk and not financial performance.

2.3.3 Market discipline and Financial Performance

Market discipline is the banks' disclosure about their corporate governance, risk exposure, corporate responsibility and financial performance in their financial reports.

Khamees (2018) investigated the impact of compliance with international financial reporting standards (IFRS) disclosure on earnings response coefficient (ERC) in Jordon using listed firms in Amman stock exchange. The compliance with IFRS disclosure was measured using three hundred and five items while ERC was measured using expected and unexpected earnings. Descriptive statistics, multiple regression analysis and correlation were employed to analyze the data collected. IFRS disclosures had significantly positive moderating impact on unexpected earnings and stock returns relationship whereas on the expected earnings and stock returns the IFRS exposure had an inverse and statistically significant impact according to the study findings. Khamees (2018) results corroborated with Quayes and Hasan (2013) findings. However, the study by Khamees (2018) studied on moderating effect of IFRS disclosures on listed non-financial companies and not the moderating effect of market share on financial companies like commercial banks which may hinder the applicability of the results in the present study. Moreover, the study excluded the effects of capital and supervisory review.

David and Muendo (2018) investigated the effect of central bank regulations (CBR) on financial performance of microfinance institutions in Kenya. Capital adequacy, operational, statutory and financial reporting requirements proxied CBR while ROA, ROE and PAT proxied financial performance. Descriptive research design was employed. Correlation and multiple linear regression analyzed the data. A positive significant effect of capital adequacy on financial performance was reported while operational, statutory and financial reporting requirements reported significantly negative effect on financial performance. The findings on financial reporting refuted the findings by Zer (2015) which indicated a positive result of information disclosure on financial performance. Nevertheless, David and Muendo (2018) study concentrated on microfinance institutions and not commercial banks which may limit use of the findings in the present context. Furthermore, the study did not include supervisory review and assumed direct relationships amongst variables.

Awadha and Alareeni (2018) studied the voluntary disclosures level among commercial banks listed in Bahrain bourse using a disclosure check list. The study reported that voluntary disclosure in Bahrain bourse as a whole was equal to 41% which indicated low disclosure of information by commercial banks in Bahrain. Zer (2015) established that when companies disclose more information it enhances their financial performance and also assists investors to make informed decisions during investment. However, Awadha and Alareeni (2018) excluded supervisory review. Furthermore, the study was undertaken in Bahrain that differs with Kenya in terms of social, political and economic settings.

Sudesh *et al.* (2016) conducted the study on the effect of corporate governance (CG) on the profitability of selected banks in India. CG was measured using board size (BCOS), ratio of

outside directors (ROD), and number of meetings in a year (NMET) while financial performance was measured by ROA, ROE, net non-performing asset (NNPA). Descriptive and exploratory research designs were employed and quantitative data collected. Data analysis methods adopted include panel regression and Pearson correlation. The study found that CG measures influence financial performance measures significantly. The study results supported the Sharif and Ming (2015) findings. However, study by Sudesh *et al.* (2016) did not test the moderating effect of market share and effects of capital and supervisory review. In addition, the study was done in different conditions from those prevailing in Kenya. Besides that, the study measured market discipline using corporate governance only and did not incorporate other non-financial measures of market discipline.

Hawashe (2015) explored effect of commercial bank characteristics on voluntary disclosure in Libya. Descriptive statistics, regression and correlation analysis were employed to analyze data. Bank attributes were represented by age, ownership, listing status, profitability, liquidity and size while voluntary disclosure was represented by sixty-three disclosure items. Voluntary disclosure and size, ownership, age and listing status shown a positive relationship per the study results while liquidity, profitability and voluntary disclosure revealed a significant adverse association. However, the study by Hawashe (2015) results contradicted the findings by Mutiva *et al.* (2015) who reported that voluntary disclosure significantly influenced financial performance of listed banks in Kenya. The contradictions in findings motivated the researcher to undertake the current study to investigate the effect of Basel accord requirements on financial performance of commercial banks in Kenya. Moreover, the disclosure of information was used as a dependent variable while profitability as an independent variable

but in the present study both disclosure of information and profitability were being used as an independent and dependent variable respectively.

Klerk *et al.* (2015) analyzed the impact of disclosure of corporate social responsibility (CSR) on share prices of listed companies in United Kingdom. The CSR was measured using a disclosure check list. The findings of the study indicated that share prices increased with higher levels of CSR disclosure. Moreover, the study noted that information disclosures concerning CSR companies not in sensitive industries showed a weak link with share prices but CSR disclosures by businesses in sensitive industries showed a strong link with share prices. The study concluded exposure of information to the public helped investors to make informed investment decisions. The results of the study supported the results by Zer (2015). However, the Klerk *et al.* (2015) did a study in developed country where social, political and economic situations are not similar with Kenya's. In addition, the study was involved in CSR disclosures of listed non-financial companies and not information disclosure of financial companies like commercial banks. Besides that, Klerk *et al.* (2015) study did not incorporate market share as a moderator variable nor effects of capital and supervisory review. Furthermore, the study included CSR only as an indicator of market discipline and excluded financial measures of market discipline.

Mutiva *et al.* (2015) investigated nexus of voluntary disclosure and profitability of quoted firms at NSE, Kenya. Financial performance was proxied by return on investment (ROI) while voluntary disclosure was based on check list. Regression model was employed while analyzing data. The findings were, voluntary disclosure positively and significantly related with ROI. The study by Quayes and Hasan (2013) concurred with the results that disclosure

of information improved financial performance. However, the study by Mutiva *et al.* (2015) concentrated on listed non-financial companies and not financial companies like commercial banks which may limit the use of results in the current context. Moreover, the study assumed direct relationships amongst study variables.

Sharif and Ming (2015) determined the impact of the disclosure of corporate governance (CG) practices on organizations' financial performance, dividend policy and bankruptcy risk of quoted companies in Malaysia. The study adopted modified disclosure index to measure CG practices, with analysis of data employing bootstrapping techniques. The study results reported, CG practices disclosures have positive significant effect on firm financial performance, no significant effect on bankruptcy risk and divided payouts. Mutiva *et al.* (2015) also reported similar results. However, the study by Sharif and Ming (2015) involved public listed non- financial companies and not banks which may hinder the use of the findings in the present context. In addition, the study concentrated on CG disclosure practices by listed non-financial companies and not information disclosure by banks. Moreover, the study did not incorporate the effects of capital and supervisory review as other dimensions of Basel accord requirements. Besides that, the study operationalized market discipline by use of CG and omitted other non-financial measures of market discipline.

Aanu *et al.* (2015) investigated financial reporting disclosures on financial performance of manufacturing companies listed in Nigeria. The financial reporting disclosures were represented by type of auditor's report, value added percentage retained for expansion, board size and timeliness but financial performance was represented by ROE. Data was analyzed using panel least square regression. All the measures of financial reporting disclosures showed

significant positive relationship with financial performance except percentage of value added retained for expansion which showed statistically insignificant negative relationship with financial performance. Aanu *et al.* (2015) results were in congruent with Klerk *et al.* (2015) findings. However, Aanu *et al.* (2015) study used listed manufacturing companies and not financial sector like commercial banks which may hinder generalization of the results to other sectors. Likewise, the moderating effect of market share and the effects of capital and supervisory review were not incorporated.

Zer (2015) investigated the effect of information disclosures on default risk and bank value using bank holding companies in United States. Informational disclosure was measured using a self-constructed disclosure index of risk exposures, default risk was measured using enterprise risk and expected probability of default while bank value was measured using book market equity to book equity value, ROA and Sharpe ratio. Data was analyzed by means of GMM. The findings revealed that higher disclosure reduced probability of default risk and increased the value of the bank. Likewise, the study noted that higher disclosure reduces information asymmetry among managers of the bank and investors thus banks practicing greater disclosure performed better (David *et al.,* 2018). However, the study by Zer (2015) conceptualized information disclosure as risk disclosure but the present study conceptualized it as both financial and non- financial information disclosure. Besides that, Zer (2015) study was conducted in an industrialized country with different conditions as compared to Kenya. Similarly, the study excluded the effects of supervisory review, capital and the moderating effect of market share on market discipline and financial performance relationship.

Quayes and Hasan (2013) studied the financial disclosure and microfinance institutions financial performance across countries. Data was analyzed using probit models. Disclosure indicators included; low disclosure, medium disclosure and high disclosure while financial performance indicators included; return on assets, profit margin and operating self-sufficiency. The results showed that financial disclosure and financial performance related positively and significantly. The study results were consistent with the Mutiva *et al.* (2015) findings. Further, the study noted that when institutions disclose more information it enhanced their financial performance. However, the study by Quayes and Hasan (2013) involved a cross country analysis and not a bank level analysis and also, excluded the effects of capital, supervisory review and moderating effect of market share on relationship between information disclosure and financial performance. In addition, Quayes and Hasan (2013) study concentrated on microfinance institutions and not commercial banks hence its results may not be applicable in the present context. Besides that, the study operationalized market discipline as financial disclosure and did not include non-financial indicators.

2.3.4 Basel accord requirements, market share, financial performance

Birru (2019) carried a study on the elements of the insurance companies' profitability in Ethiopia. The study used specific, industry and macroeconomic variables. Profitability was measured using ROA and ROE while gross premium to gross industry premium proxied market share. Panel linear regression models and descriptive statistics were involved in data analysis. Results indicated age, liquidity, premium growth, tangibility of assets, market share and inflation had positive relationship with ROA although the effect of tangibility of assets, liquidity and inflation was statistically insignificant, while leverage, underwriting risk confirms insignificant negative result on ROA but gross domestic product (GDP) has a

significant negative effect on ROA. Age, leverage, liquidity, premium growth, tangibility of assets, market share and inflation had a positive influence on ROE but only age, was statistically significant. GDP has an inverse significant impact on ROE while underwriting risk has a statistically insignificant negative effect on ROE. The present study extended the Birru (2019) study by testing the moderating of market share influence on Basel accord requirements and commercial banks financial performance in Kenya.

Arif *et al.* (2018) evaluated the effect of concentration ratio and market share on financial performance of Islamic banks in Indonesia. Data was analyzed using random and fixed effect models. The study findings suggested that market share and concentration ratio has a statistically insignificant positive and negative influence on financial performance respectively. The study established that large or small market share does not affect financial performance. The Arif *et al.* (2018) findings contradicted the findings by Etale *et al.* (2016) which reported that market share and financial performance related positively and significantly. The difference in findings may be attributed to failure to consider market share as a moderating variable and difference in market conditions dominant in the two countries. The current study extended Arif *et al.* (2018) study by including market share as a moderating variable on Basel accord requirements and financial performance relationship.

Etale *et al.* (2016) studied the association among market share and profitability of banks in Nigeria. Market share was denoted with loan customers (LC), and deposit customers (DC) while profitability was represented by profit after tax (PAT). Multiple regression analysis was involved in analyzing panel data. Study result revealed that all market share indicators influenced profitability positively as measured by PAT though only the influence of DC was

significant. The present study extended Etale *et al.* (2016) study by considering market share as a moderating variable on the relationship between Basel accord requirements and financial performance.

Genchev (2012) determined the influence of market share on the profitability of banks in Bulgaria. Market share was measured as bank assets to total assets and bank deposits to total deposits while profitability was measured as ROE. Panel data was analyzed using panel least square and random effect models. Genchev (2012) study reported a statistically significant positive association among market share and profitability, approving that greater profit goes to banks owning great market share. The present study extended the study by Genchev (2012) by incorporating a moderator variable market share on Basel accord requirements and financial performance relationship.

Naylah and Cahyaningratri (2020) carried out a study on the influence of market share on financial performance of commercial banks in Indonesia. Panel data was analyzed using fixed effect model. The study reported a positive and statistically insignificant effect of market share on financial performance. The study recommended that, the moderating effect of market share be tested by future studies. Thus, the present study extended Naylah and Cahyaningratri (2020) study by testing the moderating effect of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.

2.4 Summary of Empirical Literature and Research Gaps

Table 2.1 presents a summary of empirical literature and research gaps.

Table 2.1: Summary of Empirical Literature and Research Gaps

Author	**Study Title**	**Findings**	**Research gaps identified**	**Addressing the research gap**
Odonkor and Barmor (2012)	Capital adequacy and financial performance of Ghanaian banks.	Capital adequacy has a negative significant effect on ROE but an insignificant effect on ROA.	The study incorporated only capital effects and assumed direct relationships among study variables. Moreover, the study was carried out in a Ghanaian context.	The study was carried out in a Kenyan context and incorporated the effects of supervisory review, market discipline and moderating effects of market share.
Faten *et al.* (2014)	Regulation, supervision and European banks profitability.	Banking regulations, deposit insurance and capital adequacy have a positive and significant effect on profitability.	A cross-country analysis study was done and considered market discipline effects only.	The study involved bank level analysis and included effects of supervisory review, market discipline.
Aanu, *et al.* (2015)	Financial disclosures in the annual reports	Timeliness, board size, type of auditor's report	The study concentrated on manufacturing companies and	The study was conducted in Kenya involving

	and financial performance of listed manufacturing companies in Nigeria.	show a positive significant effect on ROE while percentage of value added retained for expansion has a negative insignificant effect on ROE.	not financial sector like commercial banks hence the findings may not be applicable in the current context. The study did not test the moderating effect on financial disclosure and financial performance relationship. The study proxied market discipline as financial disclosure and omitted non-financial disclosures. The study was undertaken in a Nigerian context.	commercial banks and added the effects of capital, supervisory review and moderating effects of market share on Basel accord requirements and financial performance relationship. The study added non-financial measures of market discipline.

Hawashe (2015)	Commercial bank characteristics and voluntary disclosure in Libya.	Size, ownership, age, listing status have a significant positive relationship with voluntary disclosure while Liquidity, profitability have a negative significant effect on voluntary disclosure.	Voluntary disclosure was used as a response variable while profitability was used as an independent variable. Excluded the moderating effects on commercial banks characteristics and voluntary disclosure relationship, effects of supervisory review, capital and the study was carried out in a Libyan context.	Market discipline and financial performance were used as a regressor and response variables respectively. Incorporated the moderating effects of market share on the relationship between Basel accord requirements and financial performance, effects of supervisory review, capital. Further, the study was carried out in a Kenyan context.

Mutiva *et al.* (2015).	Voluntary disclosure and financial performance of quoted companies at (NSE), Kenya.	Voluntary disclosure has a positive and significant effect on financial performance.	The study involved listed non-financial companies and not financial companies like commercial banks hence may hinder the applicability of the findings in the present context. The study included only the information disclosure effects and assumed direct relationships amongst variables.	The study assessed commercial banks operating in Kenya and incorporated the effects of capital, supervisory review and moderating effects of market share on Basel accord requirements and financial performance relationship.
Klerk *et al.* (2015)	Corporate social responsibility disclosure (CSR) and share prices of	Higher levels of disclosure of CSR were associated with higher share prices.	The study concentrated on CSR disclosures of listed non-financial companies and not financial companies like commercial banks hence this	The study focused on disclosure of financial and non-financial information by commercial banks in Kenya and incorporated the

	United Kingdom listed companies.	Disclosures by companies in environmental industry showed a strong association with share prices than disclosures by companies in other industries.	may limit generalization of the findings to other sectors and the study was carried out in UK context.	effects of capital and supervisory review.
Sudesh *et al.* (2016)	Corporate governance and financial performance of selected commercial banks in India.	Corporate governance significantly influence financial performance.	The study assumed direct relationships amongst study variables, did not include the effects of capital and supervisory review and finally, the study was undertaken in an Indian context.	The study tested moderating effects of market share on the relationship between Basel accord requirements and financial performance. Added the effects of capital, supervisory review

			The study operationalized market discipline as corporate governance and excluded other non-financial measures of market discipline.	and the study was conducted in Kenya. Besides that, the study added other non-financial measures of market discipline other than corporate governance.
Susan and Nasieku (2016)	Capital and financial performance of listed commercial banks in Kenya.	Capital adequacy ratio positively and insignificantly influence financial performance of commercial banks in Kenya.	The study involved listed banks which may limit generalization of the findings, only considered the effect of capital and did not test the moderating effects on the relationship between capital and financial performance.	The study involved all commercial banks actively operating in Kenya and added the effects of supervisory review, market discipline. Tested the moderating effects of market share on Basel accord requirements

				and financial performance of commercial banks in Kenya relationship.
Kipruto *et al.* (2017)	Capital adequacy ratio and financial performance of commercial banks in Kenya.	Capital adequacy ratio significantly influence financial performance of commercial banks in Kenya.	The study involved tier 2 banks which may hinder generalizability of the findings to the entire financial sector. Studied only the effects of capital and assumed direct relationships among the study variables.	The study considered tier one, two and three commercial banks actively operating in Kenya. Tested the effects of supervisory review, market discipline and the moderating effects of market share on Basel accord requirements and financial performance relationship.

Otwani *et al.* (2017)	Capital and financial performance of companies listed in (NSE), Kenya.	Capital has a positive insignificant effect on financial performance.	The study considered non-financial companies listed in NSE, Kenya and not financial companies like commercial banks which may hinder the use of the findings in the present context. The study considered the effects of capital only and was a direct relationship study.	The study involved commercial banks actively operating in Kenya. Included the effects of market discipline, supervisory review and the moderating effects of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.
Udom and Onyekachi (2018)	Capital adequacy and profitability of	Capital has a significant positive effect on ROA.	The study was done in a Nigerian context and tested	The study was carried out in a Kenyan context and incorporated the effects of

	commercial banks in Nigeria.		only the effects of capital on profitability.	supervisory review and market discipline.
Assfaw (2018)	Bank specific factors and private banks financial performance in Ethiopia.	Capital adequacy has a significant positive effect on financial performance. Capital adequacy is a key factor in determination of financial performance of banks.	The study assessed private banks which may limit generalization of the findings to all banks. The study was conducted in an Ethiopian context and did not test the effects of supervisory review, market discipline and moderating effects on the relationship between bank specific factors and financial performance.	The study involved all commercial banks actively operating in Kenya and added the effects of supervisory review, market discipline and the moderating effects of market share on Basel accord requirements and financial performance relationship.

David and Muendo (2018)	Central Bank Regulations (CBR) and financial performance of microfinance institutions in Kenya.	Financial reporting negatively and significantly affects financial performance.	The study involved microfinance institutions operating in Kenya and not commercial banks which may hinder usability of the results in the present context. The study only considered the effects of capital and market discipline on financial performance and assumed direct relationships amongst variables.	The study involved commercial banks actively operating in Kenya. Added supervisory review effect and moderating effects of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.
Khamees (2018)	Compliance with international financial reporting standards (IFRS)	IFRS disclosure has a significant moderating impact on unexpected	IFRS disclosure was used as a moderating variable and the study involved listed non-financial companies and not	Information disclosure was used as an independent variable and all commercial banks actively

	disclosure and earnings response coefficient (ERC) in Jordon.	earnings and stock returns relationship.	financial companies like commercial banks hence may hinder the applicability of the results in the present context and in addition, the study was done in Jordon.	operating in Kenya during the analysis period were included in the study. The study was carried out in a Kenyan context.
Awadha and Alareeni (2018)	Voluntary disclosure level among commercial banks in Bahrain.	The average level of information disclosure was very low among commercial banks in Bahrain. The study noted that low disclosure of information affects the investment decisions made by investors.	The study presumed direct relationships among the variables and was undertaken in Bahrain context.	The study tested the moderating effects of market share on Basel accord requirements and financial performance of commercial banks in Kenya relationship.

Source: Compiled by Researcher (2020)

2.5 Conceptual Framework

Conceptual framework links key study variables in a diagrammatic manner showing the presumed relationships that may exist as per the review of literature. The theoretical and empirical literature forms a foundation of conceptual framework and was presented in figure 2.1

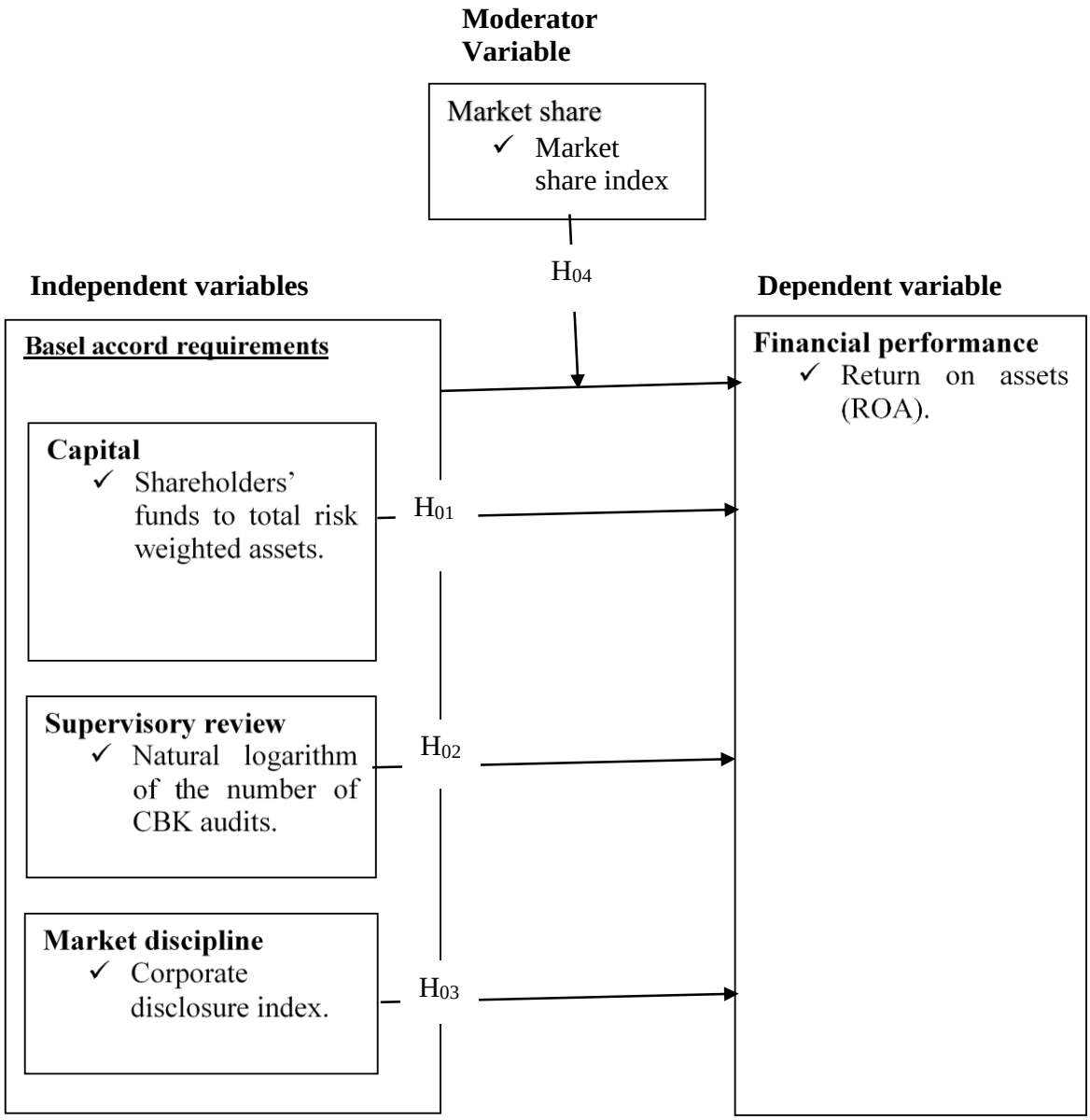

Figure 2.1: Conceptual framework

Source: Researcher (2021)

Conceptual framework shows the relationship between independent variables, moderating variable and dependent variable. From the figure 2.1, Basel accord requirements were the independent variable and were operationalized through capital, supervisory review and market discipline. Capital was proxied by shareholders' funds to total risk weighted assets,

supervisory review was proxied by the number of central bank of Kenya audits while market discipline was measured using composite disclosure index. Financial performance as the dependent variable was operationalized through return on assets ratio (ROA). Market share as a moderating variable was operationalized through weighted composite index involving; deposit accounts, loan accounts, deposits, capital and assets.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the planning and execution of the study. The chapter discusses, research philosophy, research design, empirical model, operationalization and measurement of variables, target population, sampling design, sample size, data collection instruments and procedure, data analysis and presentation as well as ethical issues.

3.2 Research Philosophy

The research philosophy employed was positivism. There are three major philosophical assumptions that underpin positivism research philosophy, which include; ontology, epistemology and methodological (Saunders, Lewis & Thornhill, 2012). Ontology philosophy for positivist researcher beliefs that only one truth exists, the truth doesn't change and the truth discovered can be generalized. Epistemology is the philosophy of how the researcher relates with the research itself which is determined by how the researcher view the world while methodological is the philosophy of discovering the truth (Saunders *et al.*, 2012). The belief on approach of data collection, analyzing and usage about a phenomenon refers to research philosophy. Positivists researchers' belief that statistical analysis can be used to measure objectivity in a quantitative research (Molina, 2012; Crowther & Lancaster, 2008). The current study used a quantitative approach to measure capital, supervisory review, market discipline, market share and financial performance. Based on epistemology, quantitative researchers should be independent of what is being researched and maintain objectivity throughout the research process (Bryman, 2012; Smith, Thorpe & Jackson, 2008). In the present study, Basel accord requirements were studied by usage of banking supervision

reports which permitted discovery of the truth process. Additionally, positivists first determine the concepts, variables and hypotheses before conducting the study (Collins & Hussey, 2013; Crowther & Lancaster, 2008; Saunders *et al.,* 2012). The current study employed deductive process to test the theories informing the study (information asymmetry theory, buffer theory of capital, agency theory and relative market power hypothesis). Further, the researcher made generalizations from the results of the study.

3.3 Research Design

The study adopted casual research design. Research design is a blueprint of research on how data was measured, collected, and analyzed (Saunders *et al.,* 2012). Descriptive research design gives a researcher a chance to collect data and test hypotheses concerning the current status of the subject. In addition, the researcher has no control of the study variables (Saunders *et al.,* 2012; Zikmund, Babin, Carr & Griffin, 2013). Casual research design establishes the cause-and-effect relationships between study variables (Saunders *et al.,* 2012). Umoru & Osemwegie (2016) specifies that casual research design obtains the cause-and-effect relationships among study variables. Therefore, the study adopted casual research design to investigate the effect of Basel accord requirements on financial performance of commercial banks in Kenya.

3.4 Empirical Model

In order to analyze the effects of Basel accord requirements on financial performance of commercial banks in Kenya, the study adapted the linear model by Umoru and Osemwegie (2016) and zikmund *et al.* (2013) as shown in equation 3.1.

$$Y_{it} = \alpha + X_{it}'\beta + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.1$$

Where; Y_{it} is the criterion variable signifying financial performance of bank i at time t; i denotes the bank i = 1,…….,38 while t is time of study, t = 2013,……,2020; X_{it}' represents a vector of predictor variables (Basel accord requirements); β coefficients of predictor variables; α is a constant term, and it is equal to Y when the values of all regressors are zero while ε_{it} is composite error term explaining the variability of financial performance as a result of other factors not included in the model.

3.4.1 Empirical model for direct effect

Equation 3.2 was used for estimating the effect of capital, supervisory review, market discipline on financial performance which resulted from expansion of Equation 3.1

$$ROA_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 SR_{it} + \beta_3 MD_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

Where:

ROA_{it} = Return on asset ratio for bank i at time t

β_0 = A constant term, and it is equal to the outcome variable when all regressors values are zero

CA_{it}= Capital for bank i at time t

SR_{it}= Supervisory review for bank i at time t

MD_{it} = Market discipline for bank i at time t

$\beta_1, \beta_2, \beta_3$ = Regression coefficients

ε_{it} = Composite error term explaining the variability of financial performance (ROA) as a result of other factors not included in the model.

3.4.2 Empirical model for moderated effect

Baron and Kenny (1986) approach was adopted to test market share moderating effect on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya. First step, market share was introduced in model 3.2 as an explanatory variable as shown in equation 3.3. The significance of the predictor variables, model significance and the value of R-square were noted. Step two, market share was introduced as a moderator variable as shown in equations 3.4. The significance of the predictor variables, the value of R-square, model significance and significance of the interaction terms were noted.

3.4.2.1 Step one

$$ROA_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 SR_{it} + \beta_3 MD_{it} + \beta_4 M_{it} + \varepsilon_{it} \quad \ldots\ldots 3.3$$

3.4.2.2 Step two

$$ROA_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 SR_{it} + \beta_3 MD_{it} + \beta_4 M_{it} + \beta_5 (M * CA)_{it} + \beta_6 (M * SR)_{it} + \beta_7 (M * MD)_{it} + \varepsilon_{it} \quad \ldots\ldots 3.4$$

Where

ROA_{it} = Return on asset ratio for bank i at time t

β_0 = A constant term, and it is equal to the response variable when all regressors values are zero

CA_{it}= Capital for bank i at time t

SR_{it}= Supervisory review for bank i at time t

MD_{it} = Market discipline for bank i at time t

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = Regression coefficients

ε_{it} = Composite error term explaining the variability of financial performance (ROA) as a result

of other factors excluded in the model.

M_{it} = Market share, the moderator variable for bank i at time t.

$(M * CA)_{it}$=interaction term between capital and market share for bank i at time t.

$(M * SR)_{it}$=interaction term between supervisory review and market share for bank i at time t.

$(M * MD)_{it}$=interaction term between market discipline and market share for bank i at time t.

Decision was made as shown in table 3.1.

Table 3.1: Decision making criteria for moderation

Steps	**Result**	**Decision**
Step one: Equation 3.3: Market share as an independent variable	Significant coefficient of market share	Market share is an explanatory variable.
	Insignificant coefficient of market share	Market share can moderate the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.
Step two:	Significant coefficient of market share	Market share moderates the relationship between Basel accord requirements and

Equation 3.4: Market share as a moderator variable.		financial performance of commercial banks in Kenya.
	Insignificant coefficient of market share	Market share doesn't act as a moderator on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya.
	Significant coefficient of interaction terms $\beta_5(M * CA)_{it}$ $\beta_6(M * SR)_{it}$ $\beta_7(M * MD)_{it}$	Market share is a moderator variable.
	Insignificant coefficient of interaction terms $\beta_5(M * CA)_{it}$ $\beta_6(M * SR)_{it}$ $\beta_7(M * MD)_{it}$	Market share is not a moderator variable.

Source: (Musau, Muathe & Lucy, 2018)

3.5 Operationalization and measurement of study variables

Operational definitions and variable measurements applied in regression analysis were presented in table 3.2.

Table 3.2: Operationalization and measurement of study variables

Type	Variable	Operationalization	Measurement	Measurement scale	Hypothesized direction
Dependent	Financial performance	Profitability	ROA=Earnings before interest and tax/Total assets	Ratio	Positive/ negative
Independent	Capital	Proportion of shareholder's funds to total risk weighted asset.	Capital= Shareholder's funds / Total risk weighted assets	Ratio	Positive/ negative
	Supervisory Review	Oversight of banks in order to detect unsound practices that can affect a bank as well as whole economy.	Natural logarithm of number of central bank of Kenya audits to an individual bank.	Ratio	Positive/ negative
	Market Discipline	Commercial banks' disclosure of financial and non-financial information to the public through	CDI= $\frac{\text{individual bank's scores attained}}{\text{maximum scores attainable by a bank}} x100$ Where: CDI is the corporate disclosure index	Ratio	Positive/ negative

		financial reports which aid in understanding their operational procedures.			
Moderator	Market share	Market share index (MSI)	MSI= Weighted composite index measured by capital, assets, deposits, loan and deposit accounts.	Ratio	Positive/ negative

Source: Researcher (2021)

3.6 Target Population

The target population for the study consisted of forty-three commercial banks operating in Kenya over the period of study (2013-2020). However, the unit of analysis involved commercial banks which were not placed under statutory management and were actively trading during the time of the study. The individual commercial banks and banking supervisory annual financial reports from year 2013-2020 were the unit of observation.

3.7 Sampling design and Sample size

Purposive sampling design was applied by the researcher in order to choose a sample that represents the population of the study (Mugenda & Mugenda, 2013). Commercial banks that were under statutory management or not actively trading over the eight years of study (2013-2020) were excluded from the sample. The commercial banks carrying out banking activities in Kenya in year 2020 were forty-three. However, five banks were dropped, since Charter house bank, Chase bank and Imperial bank were under statutory management while Mayfair

bank and Dubai Islamic bank (K) limited were opened in 2017 and therefore were in operation for less than eight years. Hence, the remainder of thirty-eight commercial banks formed the sample of the study (Appendix V).

3.8 Data collection instruments

The nature of data in the present study was secondary and quantitative. Panel data sources were individual banks' audited financial reports and banking supervision annual reports between 2013 and 2020. The study used data collection schedules (Appendix I-IV) to extract the data specifically from profit and loss account, statement of financial position and disclosures to the reports. Faten *et al.* (2014) proposed that construct validity in secondary data can be achieved through the literatures reviewed. Therefore, various literatures reviewed informed the development of document review, operationalization and measurement of the study variables.

3.9 Data collection procedure

Research license to gather data was gotten from National Commission for Science, Technology and Innovation to assist in obtaining individual banks' audited financial reports and banking supervision annual reports for the period between 2013 and 2020 using data collection schedules (Appendix I-IV). Specifically, the data was extracted from the financial position reports, income reports, financial reports disclosures and notes to the reports. The study employed panel data to increase the sample size since pure cross-section data gave thirty-eight commercial banks, pure time series data gave eight years, hence combining cross-section and time series dimensions gave rise to 304 observations (Hsio, 2003).

3.10 Data analysis

Panel regression analysis, correlation analysis and descriptive statistics were employed to analyze the data. Analysis of data involved the following steps as suggested by (Zikmund *et al.,* 2013). First, panel data was revised for completeness, consistency and accuracy. Relevant ratios for each bank across time were calculated by the help of Ms- Excel. Stata software was then used for data analysis after importing it from excel. Descriptive statistics values (minimum, maximum, standard deviation, mean) for the variables in the study were computed to explain the patterns of the data and presented using a table. Inferential analysis involved both correlation and multiple regression analysis. Diagnostic tests were done to check the violations of classical linear regression (CLR) assumptions in the panel data. According to Greene (2011) running regression models without checking for the violation of CLR assumptions first, might lead to spurious results. The existence of the effect of Basel accord requirements and financial performance measures were tested using correlation analysis. Association among dependent and independent variable for strength and direction was aided by Pearson's correlation analysis. Finally, panel regression analysis was done so as to test the null hypotheses of the study. Hypotheses testing was done at 0.05 significance level which is the level mostly used in social and business research (Mugenda & Mugenda, 2013). Application of inferential and descriptive statistical analysis improved the study results (Rajkumar, 2014). Information was presented using tables.

3.11 Diagnostic tests

The present study tested the following diagnostic tests before estimating the panel multiple regression models to avoid obtaining biased and inefficient coefficient estimates (Greene, 2011).

3.11.1 Panel unit root test

Panel data included both time series and cross-section data. If time series data is non-stationary, the panel data will be non-stationary (Baltagi, 2013). Hence, there was need of testing stationarity of data when dealing with panel data. Regression models assumes that data is stationary, but time series data trends, if unit root test is not done and data is trending, this might lead to spurious findings (Gujarati, 2008). Stationarity was checked by running Fisher-type test to all study variables since it works with unbalanced panel (Choi, 2001). Non-stationarity of panels was taken as null hypothesis. However, presence of non-stationary variables led to differencing of those variables, hence the model was run using both level and differenced variables.

3.11.2 Multicollinearity test

Inflated Inter-correlations amongst the independent variables lead to multicollinearity in a multiple regression model. Multicollinearity becomes a problem when it is severe. Further, it has a consequence of very high standard errors for regression coefficients, the overall model might be significant but none of the coefficients are (Gujarati, 2008). Multicollinearity was examined using variance inflation factors (VIFs) and tolerance values. Less than 0.1 tolerance values and VIFs of 10 and beyond denotes the presence of severe multicollinearity (Saunders *et al.*, 2012). The study data did not suffer from severe multicollinearity since the tolerance and variance inflation factors of all study variables were within 0.1 and 10 respectively hence the null hypothesis that regressors are not correlated with each other was not rejected.

3.11.3 Normality test

A normality test was evaluated through Jarque Berra (JB). When test sample data has the kurtosis and skewness equivalent to a normal distribution reveals a goodness of fit. Normally distributed data has a skewness of zero (data is precisely symmetrical about the mean), kurtosis of three (shows how "peaked" is the data). JB test null hypothesis was, both error term components were normally distributed. Non-normality of data could be indicated by deviation from zero where the test statistic will be non-negative and hence a non-parametric test will be suitable (Ghasemi & Zahedias, 2012).

3.11.4 Heteroscedasticity test

Heteroscedasticity implies that the variance of the residuals increases with the fitted values of dependent variables, hence the variance of residuals could be said not to be homoscedastic (constant) (Greene, 2012). If, t or F tests were done on heteroscedastic data, then the standard errors values might be biased though the estimates of parameters might be unbiased. Heteroscedasticity was tested using Modified Wald test. The null hypothesis stated that the variance of residuals was homoscedastic. The study solved heteroscedasticity problem by using robust standard errors.

3.11.5 Autocorrelation test

Autocorrelation occurs when error term relating to two different observations are correlated, that is, error term ε_i and ε_j relating to observations i and j are not mutually independent. Presence of autocorrelation, biases the standard errors and decreases the efficiency of least square estimates. Autocorrelation was discovered by utilizing Wooldridge test. The null hypothesis was that; error terms of different explanatory variables were not correlated.

Presence of autocorrelation was mitigated by using the robust standard errors (Wooldridge, 2010).

3.11.6 Test for model specification

Researcher used Hausman test in deciding the model to apply among fixed or random effects models. This test evaluated whether or not the commercial bank individual effects were interrelated with regressors in the model. Absence of correlation between commercial bank individual effects and regressors being a null hypothesis while alternative hypothesis was that there was a correlation of regressors with bank individual effects, hence random effect model was inappropriate but the fixed effects model was appropriate (Baltagi, 2013).

The model specification test was carried out and indicated that fixed effect model was the appropriate model as p-value >0.05 significance level hence the researcher rejected the null hypothesis that random effect model was consistent. It was thus necessary for the researcher to test for differences among the units of study (commercial banks). The null hypothesis stated that the appropriate model was pooled least square model. Alternative hypothesis stated that fixed effects model was preferred. Researcher accepted the null hypothesis since the p-value was higher than five percent significance level. Thus, the model to fit was pooled least square model.

3.12 Ethical considerations

Research introductory letter was obtained from Kenyatta University School of post graduate studies, which aided in acquisition of permission from NACOSTI to collect data. The researcher as far as possible respected the intellectual property by avoiding plagiarism.

Further, the researcher made sure that the data collected was confidential and only used for academic research.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents and discusses the findings of the study which is divided into two sections. Descriptive statistics is the first sub-section which describes the characteristics of the study variables while the second sub-section is the inferential statistics comprising of diagnostic tests and pooled regression results. Pooled regression results include both direct and indirect effect model findings.

4.2 Descriptive Statistics

Descriptive statistics for panel data used in analysis is presented in table 4.1.

Table 4.1: Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Financial Performance	284	0.0261067	0.0381216	-0.1980881	0.4938343
Capital	284	0.2115947	0.1639331	0.0000025	2.130206
Supervisory Review	282	0.4447629	0.4709894	0	1.098612
Market Discipline	276	0.7048395	0.3025226	0	0.9285714
Market Share	284	2.640634	3.318887	0	14.4

Source: Research Data (2021)

The results in table 4.1 show that financial performance in terms of return on assets for 284 observations had a mean value of 0.0261067, a standard deviation of 0.0381216 with

minimum and maximum values of -0.1980881and 0.4938343 respectively. The standard deviation value was higher than the mean value, indicating that during the period of study (2013-2020) there was greater variability in return on assets across commercial banks, which was corroborated by the difference between maximum (0.4938343) and minimum (-0.1980881) values. The positive value of financial performance means that, commercial banks were on average profitable but a negative minimum value of -0.1980881 indicates that some commercial banks were operating at a loss over the same time of study.

From table 4.1 capital in terms of shareholders' funds to total risk weighted assets for 284 observations had a minimum value of 0.0000025 and a maximum value of 2.130206 with a mean value of 0.2115947 and a standard deviation of 0.1639331. Capital was positive implying that Kenya banking industry was sustainable and thus increase in capital enhances financial performance of commercial banks as measured by returns on assets (Umoru &Osemwegie, 2016). Further, standard deviation was lesser than the mean implying that there was smaller variability in capital over the time of study (2013-2020), which was supported by the difference between maximum (2.130206) and minimum (0.0000025) values.

From the results in table 4.1 supervisory review as measured by the natural logarithm of the number of central bank of Kenya audit for 282 observations had a standard deviation of 0.4709894 with a mean value of 0.4447629. The mean value indicates that central bank of Kenya was playing its critical role of conducting audits in each of the commercial banks consequently instilling discipline in the banking industry. Further, there was a higher variability in supervisory review since the mean value was lower than standard deviation value that was confirmed by the minimum value of zero and maximum value of 1.098612. A positive

value of supervisory review indicates that improvement in the quality of audit by central bank of Kenya increases financial performance of commercial banks in Kenya.

As shown in table 4.1 market discipline as measured by corporate disclosure index had a minimum value of zero, a maximum value of 0.9285714 with a mean value of 0.7048395 and a standard deviation of 0.3025226. A positive value of corporate disclosure index indicates that commercial banks were disclosing relevant information in their published financial reports that contribute to investors making informed investment decisions hence improving return on assets (Zer, 2015). Additionally, there was a smaller variability in market discipline over the time of analysis (2013-2020) which was confirmed by the difference between maximum (0.9285714) and minimum (0) values.

From the results presented in table 4.1 market share had a mean value of 2.640634 and a standard deviation of 3.318887. The results show that, there was a greater variability in market share across banks during the period of analysis (2013-2020) since standard deviation was greater than mean value which was supported by the difference between maximum (14.40) and minimum (0) values. A positive value of market share means that, increase in market share of commercial banks enhances return on assets (Birru, 2019).

4.3 Inferential Statistics

Regression analysis was applied to test the study hypotheses. The researcher first tested for non-violation of the classical linear regression assumptions.

4.3.1 Diagnostic tests

The study conducted the following diagnostic tests; panel unit root, multicollinearity, normality, heteroscedasticity, autocorrelation, model specification test and correlation test in order to prevent spurious results.

4.3.1.1 Panel Unit Root Test

The study utilized Fisher-type tests of panel unit root because the panel was unbalanced. Fisher-type tests do not require strongly balanced data, and the individual series can have gaps (Baltagi, 2013).

Table 4.2: Unit root test

		Level		**First difference**	
Variable	**Tests**	**Statistic**	**p-value**	**Statistic**	**p-value**
Financial performance	Inverse Chi-Squared	93.2791	0.0644	107.4934	0.0027
	Inverse Normal	-0.1466	0.4417	0.2911	0.6145
	Inverse Logit	-0.2029	0.4197	-0.4693	0.3197
	Modified Inv. Chi-Squared	1.5847	0.0565	3.1688	0.0008
Capital	Inverse Chi-Squared	195.6957	0.0000		
	Inverse Normal	-8.0861	0.0000		
	Inverse Logit	-8.4011	0.0000		

	Modified Inv. Chi-Squared	10.0033	0.0000		
Supervisory Review	Inverse Chi-Squared	0	1.0000	0.0000	1.0000
	Inverse Normal	-	-	-	-
	Inverse Logit	-	-	-	-
	Modified Inv. Chi-Squared	-6.0828	1.0000	-5.9161	1.0000
Market Discipline	Inverse Chi-Squared	30.8335	1.0000		
	Inverse Normal	-1.6971	0.0448		
	Inverse Logit	-3.2744	0.0016		
	Modified Inv. Chi-Squared	-3.4305	0.9997		
Market share	Inverse Chi-Squared	85.1243	0.1771	123.8898	0.0001
	Inverse Normal	1.5762	0.9425	-0.5500	0.2912
	Inverse Logit	0.7950	0.7862	-1.5673	0.0594
	Modified Inv. Chi-Squared	0.9144	0.1802	4.5545	0.0000

Source: Research Data (2021)

Table 4.2 shows the findings of Fisher-type tests based on inverse chi-squared, inverse normal, inverse logit and modified inverse chi-squared. The results indicate that capital and market

discipline were stationary in levels while financial performance, supervisory review and market share first differences were obtained. Hence the null hypothesis that all the panels contain a unit root was rejected. The models were run using level data for capital, market discipline and differenced data for financial performance, supervisory review and market share. Supervisory review was not stationary even after the first difference. This could be explained by the difference between its maximum (1.098612) and minimum (0) values.

4.3.1.2 Multicollinearity Test

The study conducted multicollinearity test using variance inflation factor (VIF).

Table 4.3: Multicollinearity Test Result

Variable	**VIF**	**Tolerance**	**Remarks**
Supervisory Review	3.14	0.318325	No severe Multicollinearity
Market Share	2.89	0.346022	No severe Multicollinearity
Market Discipline	1.24	0.806672	No severe Multicollinearity
Capital	1.02	0.977576	No severe Multicollinearity
Mean VIF	**2.07**		

Source: Research Data (2021)

The findings in table 4.3 indicate that the VIF for supervisory review (VIF=3.14), market discipline (VIF=1.24), capital (VIF=1.02) and market share (VIF=2.89) while 2.07 was mean VIF. The output in table 4.3 shows that capital, supervisory review, market discipline and market share did not suffer from severe multicollinearity since their VIF values were below 10 while tolerance values were greater than 0.1. Therefore, the level of multicollinearity could be tolerated (Greene, 2011).

4.3.1.3 Normality Test

The study tested for normality in linear panel-data models using Jarque Berra (JB) test (Gujarati,2008).

Table 4.4: Normality Test Results

	Observed Coefficient	**Bootstrapped Standard errors**	**z**	**P>|z|**
Skewness_e	.0001819	.0002063	0.88	0.378
Kurtosis_e	.0000876	.0000773	1.13	0.257
Skewness_u	9.83e-07	6.98e-07	1.41	0.160
Kurtosis_u	7.01-09	1.45e-08	0.48	0.629
Joint test for Normality on e: chi2(2) = 2.06 Prob > chi2 = 0.3567 Joint test for Normality on u: chi2(2) = 2.21 Prob > chi2 = 0.3309				

Source: Research Data (2021)

Output in table 4.4 shows that the p-values for joint test for normality on ‘e’ and on ‘u’ were greater than five percent significance level. The implication was failure to reject the null hypothesis that the components of error term were normally distributed.

4.3.1.4 Heteroscedasticity Test

The study tested for heteroscedasticity using Modified Wald test.

Table 4.5: Heteroscedasticity Test

H0: Data is homoscedastic

Chi2 (37) = 3.2e+05

Prob>Chi2 = 0.0000

Source: Research Data (2021)

In accordance to table 4.5 results the p-value was 0.000 <0.05. The implication was the rejection of the null hypothesis that the residuals variance was constant. The study used the robust standard errors option to solve heteroscedasticity problem.

4.3.1.5 Autocorrelation Test

Serial correlation was tested using Wooldridge test. Null hypothesis was no first order serial correlation.

Table 4.6: Autocorrelation Test

H0: no first-order autocorrelation

F (1, 35) = 2.394

Prob > F = 0.1308

Source: Research Data (2021)

F test value of 2.394 with a p-value of 0.1308>0.05 according to results in table 4.6. Hence, the null hypothesis of absence of first order autocorrelation failed to be rejected and the researcher concluded that there was no problem of serial correlation (Greene, 2012).

4.3.1.6 Model Specification Test

The researcher had to apply either random or fixed effects model hence the decision was made using Hausman test as recommended by Baltagi (2013). The estimated results for fixed and random effects models were attached in appendix (VIII).

Table 4.7: Hausman Test Results

	Coefficients			
	fixed	**random**	**Difference**	**S.E**
Capital	-.0012801	.0218286	-.0231087	.0068357
Market Discipline	-.2568884	.0053514	-.2622398	.2499929
Market Share	.0020584	.004546	-.0024876	.0056565
Ho: Random effect model is consistent. Chi2 (3) = 12.35 Prob>chi2 = 0.0063				

Source: Research Data (2021)

From table 4.7, the results show a chi square of 12.35 with a p-value of 0.0063<0.05. Hence the null hypothesis (Ho) that random effect model was consistent was rejected giving preference to fixed effect model. The study concluded that fixed effect model was appropriate.

4.3.1.7 Testing for panel effects

The panel effects test to select among fixed effect model and pooled least square model used Breusch and Pagan Lagrangian multiplier as recommended by Greene (2011).

Table 4.8: Test for panel effects

	Var	**SD**
ROA	.0014793	.038462
e	.0011651	.0341331
u	0	0
Test: Var(u) = 0 Chibar2 (01) = 0.00 Prob > chibar2 = 1.0000		

Source: Research Data (2021)

The Breusch and Pagan Lagrangian multiplier reported a chi square of zero and a p-value of 1.000 as shown in table 4.8. The p-value > 0.05 thus leading to failure to reject the null hypothesis that the data had no panel effects (pooled regression model was better fit) or no significant difference across units (commercial banks). The study instead concluded that pooled regression model was the best fit as recommended by (Baltagi, 2013).

4.3.1.8 Correlation Analysis

The study tested for pairwise correlation between financial performance, capital, supervisory review, market discipline and market share using Pearson correlation as recommended by Gujarati (2008).

Table 4.9: Correlation analysis results

	Financial Performance	Capital	Supervisory review	Market discipline	Market share
Financial performance	1.0000				
Capital	0.0836 (0.1600)	1.0000			
Supervisory review	0.3740 (0.0000)	-0.0584 (0.3265)	1.0000		
Market discipline	0.1750 (0.0035)	-0.1382 (0.0216)	0.4223 (0.0000)	1.0000	
Market share	0.4416 (0.0000)	-0.0117 (0.8450)	0.7105 (0.0000)	0.3241 (0.0000)	1.0000
p-values in the parenthesis, denotes 5% level of significance					

Source: Research Data (2021)

Table 4.9 results show the correlation between financial performance and capital was (0.0836, p-value of 0.2472>0.05), supervisory review was (0.3834, p-value of 0.0000<0.05), market discipline was (0.1750, p-value of 0.0076<0.05). The coefficients for supervisory review and market discipline were positive and significant while for capital was insignificant and positive. This implies that increase in capital, supervisory review, market discipline increases financial performance of commercial banks. The coefficient of market share was (0.4416, p-value of 0.0000<0.05). The coefficient was positive and significant suggesting that increase in market share increases financial performance of commercial banks.

The correlation between capital and supervisory review was (-0.0584, p-value of 0.3265>0.05), market discipline (-0.1382, p-value of 0.0216<0.05) market share (-0.0117, p-value of 0.8450>0.05). The coefficients of supervisory review and market share were negative and insignificant while the coefficient of market discipline was negative and significant. This implies that increase in supervisory review, market discipline and market share decreases capital.

The correlation between supervisory review and market discipline was (0.4223, p-value of 0.0000<0.05), market share (0.7105, p-value of 0.0000<0.05). The coefficients of market discipline and market share were positive and significant. This suggests that increase in market discipline, market share increases supervisory review. Finally, the correlation between market discipline and market share was (0.3241, p-value of 0.0000<0.05). The coefficient of market share was positive and significant implying that, increase in market share increases market discipline.

4.3.2 Hypotheses Testing

Null hypotheses **H_{01}, H_{02}, H_{03} and H_{04}** were tested in the study using both direct and indirect effect models as shown in the following sections. The statistical significance was tested at 5% significance level as presented in tables 4.10, 4.11 and 4.12. This section presents the regression model results for both direct and indirect effect involving Basel accord requirements dimensions (capital, supervisory review and market discipline) and market share as a moderator variable. The following null hypotheses were tested.

H_{01}: Capital has no significant effect on financial performance of commercial banks in Kenya.

H_{02}: Supervisory review has no significant effect on financial performance of commercial Banks in Kenya.

H_{03}: Market discipline has no significant effect on financial performance of commercial banks in Kenya.

H_{04}: Market share has no significant moderating effect on Basel accord requirements and financial performance of commercial banks in Kenya.

4.3.2.1 Basel accord requirements and return on assets of commercial banks in Kenya

The hypotheses $H_{01,}$ H_{02} and H_{03} were tested using model 3.2 at 5% significance level and the results displayed in table 4.10.

Table 4.10: Basel accord requirements and ROA of commercial banks in Kenya

	Coefficient	**Robust Std. Err.**	**t**	**P>t**
Capital	0.024888*	0.0114144	2.18	0.030
Supervisory Review	0.0297212*	0.0055910	5.32	0.000
Market Discipline	0.004552	0.0056074	0.81	0.418
Constant	0.0044411	0.0056281	0.79	0.31
Dependent variable= Financial performance (ROA) Number of observation = 276, F (3, 272) = 11.91, Prob > F =0.0000, R-squared= 0.1519 *denotes 5% level of significance.				

Source: Research Data (2021)

The following model was formulated based on the analysis in table 4.10.

$$ROA_{it} = 0.0044411 + 0.024888CA_{it} + 0.0297212SR_{it} + 0.004552MD_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

Where:

ROA_{it} = Return on asset ratio for bank i at time t

CA_{it}= Capital for bank i at time t

SR_{it}= Supervisory review for bank i at time t

MD_{it} = Market discipline for bank i at time t

Regression results in table 4.10 show F test value was 11.91, p=0.0000<0.05 suggesting that independent variables; capital, supervisory review and market discipline jointly, significantly affected financial performance of commercial banks in Kenya. Further, results show R-squared of 0.1519 implying that, capital, supervisory review and market discipline explain about 15.2% of variations in financial performance of commercial banks in Kenya. This means that Basel accord requirements were poorly implemented by commercial banks operating in Kenya during the time of study (2013-2020) since the R-squared value was very low.

H_{01}: Effect of capital on financial performance of commercial banks in Kenya

The first objective of the study sought to establish the effect of capital on financial performance of commercial banks in Kenya. The findings were as shown in table 4.10. To achieve this objective null hypothesis **H_{01}** was formulated. In table 4.10 the capital coefficient (β=0.024888, p-value of 0.030<0.05) indicates that capital has a positive significant effect on financial performance of commercial banks in Kenya. This implies that the null hypothesis that capital has no significant effect on financial performance of commercial bank in Kenya was rejected at five percent significance level. This suggests that building up capital base

improves financial performance of commercial Banks. The positive coefficient (β=0.024888) in the findings show that an increase in capital by one unit would improve financial performance of commercial banks by 0.024888 units while holding other factors constant. Capital was measured using shareholder's funds to total risk weighted assets. The finding supported the results by Moussa *et al.* (2013) and Assfaw (2018) which indicated that capital and financial performance were positively and significantly related. The similarity in the findings could be explained by use of the same measurement of capital (equity capital to total assets). However, the study finding was inconsistent with the results by Odonkor and Barmor (2012), Chinoda *et al.* (2015) whose results showed that capital had a positive and insignificant effect on financial performance of commercial banks. The contradiction in the findings could be due to contextual differences.

H_{02}: Effect of supervisory review on financial performance of commercial banks in Kenya.

The second objective of the study sought to examine the effect of supervisory review on financial performance of commercial banks in Kenya. The results of the analysis are as indicated in table 4.10. In order to achieve this objective null hypothesis **H_{02}** was formulated. In table 4.10 supervisory review coefficient (β=0.0297212, p-value of 0.000<0.05) indicates supervisory review has a positive and significant effect on financial performance (ROA) of commercial banks in Kenya hence the null hypothesis that supervisory review has no significant effect on financial performance of commercial banks in Kenya was rejected at five percent level of significance. The positive coefficient (β=0.0297212) in the findings suggest that one percent increase in the frequency and quality of supervisory review of commercial banks by central bank of Kenya would increase financial performance of commercial banks

in Kenya by (0.0297212 divided by 100) units while holding other factors constant. The finding was consistent with those by Faten *et al.* (2014), Ruzende and Wu (2014), Vighneswara (2014) who found a positive and significant effect of bank regulation and supervision on financial performance of commercial banks. However, Chortareas *et al.* (2012) found that official supervisory powers improved operations of the banks while interventionist supervisory and regulatory policies lead to higher bank inefficiency levels. The inconsistency with Chortareas *et al.* (2012) study may be due to market differences.

H_{03}: Effect of market discipline on financial performance of commercial banks in Kenya.

The third objective of the study sought to assess the effect of market discipline on financial performance of commercial banks in Kenya. The findings that summarized this analysis are in table 4.10. Null hypothesis **H_{03}** was formulated to achieve this objective. In table 4.10, the coefficient of market discipline (β=0.004552, p-value of 0.418>0.05) indicates that market discipline has a positive insignificant effect on financial performance (ROA) of commercial banks in Kenya. This implies that the null hypothesis that market discipline has no significant effect on financial performance of commercial banks in Kenya was accepted. The positive coefficient (β=0.004552) in the findings show that a unit increase in market discipline would improve financial performance of commercial banks in Kenya by 0.004552 units while holding other factors constant. The result contradicted those of Quayes and Hasan (2013)**,** Mutiva *et al.* (2015), Klerk *et al.* (2015) who found a positive and significant association among disclosure and financial performance but corroborated the findings of Aanu *et al.* (2015) that found, percentage of value added retained for expansion as a measure of disclosure showed statistically insignificant positive effect on financial performance of commercial banks.

4.3.3 Moderating effect of market share on Basel accord requirements and financial performance of commercial banks in Kenya relationship.

The study tested **H_{04}** using two-steps approach as detailed by Baron & Kenny (1986) in order to determine the moderating effect of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya. In the first step, market share was incorporated as an independent variable while in the second step market share was included as a moderator variable. Regression results are as presented in table 4.11 (first step) and 4.12 (second step).

4.3.3.1 Step 1: Market share as an explanatory variable.

Market share variable was introduced as a regressor variable in step one, model 3.3 and the results presented in table 4.11.

Table 4.11: Market share as an explanatory variable on ROA

	Coefficient	**Robust Std. Err.**	**t**	**P>t**
Capital	.0218286	.0170004	1.28	0.200
Supervisory Review	.0034089	.0141661	0.24	0.810
Market Discipline	.0053514	.0056849	0.94	0.347
Market Share	.004546	.003138	1.45	0.149
Constant	.004173	.0065277	0.64	0.523
Dependent variable= Financial performance (ROA) Number of observation = 276, F (4, 271) =17.53, Prob > F =0.0000, R-squared=0.2060				

Source: Research Data (2021)

The findings in table 4.11 show R-squared of 0.2060. This indicates that capital, supervisory review, market discipline and market share has a low explanatory power on the changes in financial performance of commercial banks in Kenya. Thus, these explanatory variables explain about 21% of variations in financial performance (ROA). The low R-squared indicates that Basel accord requirements were poorly executed by commercial banks in Kenya during the period of study (2013-2020).

F statistic value was 17.53 and a p-value of 0.000<0.05. This shows that jointly capital, supervisory review, market discipline and market share were satisfactory factors in explaining variations in financial performance of commercial banks in Kenya. Further, capital, supervisory review, market discipline and market share jointly and significantly contributes to the changes in financial performance of commercial banks.

Capital and supervisory review coefficients (β=0.0218286, p-value of 0.200>0.05), (β=0.0034089, p-value of 0.810>0.05) respectively indicate positive and insignificant effect of capital and supervisory review on financial performance of commercial banks in Kenya. The regression coefficient of capital and supervisory review means that a unit increase in capital and supervisory review would lead to 0.0218286 and 0.0034089 units increase in financial performance of commercial banks respectively holding other factors constant.

The coefficient of market discipline (β=0.0053514, p-value of 0.347>0.05) implies a positive and an insignificant effect of market discipline on financial performance of commercial bank in Kenya. The regression coefficient of 0.0053514 means that a unit increase in market discipline would lead to 0.0053514 units increase in financial performance of commercial banks holding other factors constant.

Market share coefficient (β=0.004546, p-value of 0.149>0.05) indicates a positive and an insignificant effect of market share on financial performance of commercial bank in Kenya. This indicates that market share does not directly affect financial performance (ROA) and hence can moderate the relationship between Basel accord requirements and financial performance of commercial banks in Kenya. This results validate the findings of Arif *et al.* (2018) who found that market share has a positive and insignificant effect on financial performance of Islamic banks in Indonesia. The regression coefficient of 0.004173 for constant is the value of financial performance when capital, supervisory review, market discipline and market share are equal to zero. The following model 3.3 was formulated based on the results in table 4.11.

$$ROA_{it} = 0.004173 + 0.021829\mathrm{CA}_{it} + 0.003409SR_{it} + 0.005351MD_{it} + 0.004546\mathrm{M}_{it} + \varepsilon_{it} \ldots 3.3$$

Where:

ROA_{it} = Return on asset ratio for bank i at time t

$\mathrm{CA}_{\mathrm{it}}$= Capital for bank i at time t

SR_{it}= Supervisory review for bank i at time t

MD_{it} = Market discipline for bank i at time t

M_{it} = Market share, the moderator variable for bank i at time t.

4.3.3.2 Step 2: Market share as a moderator variable.

In the step two, market share was introduced as a moderator variable, where by market share was interacted with capital, supervisory review and market discipline and the regression results presented in table 4.12.

Table 4.12: Market share as a moderator variable on ROA

	Coefficient	**Robust Std. Err.**	**t**	**P>t**
Capital	0.0559723*	0.017887	3.13	0.002
Supervisory review	0.002039	0.0148653	0.14	0.891
Market discipline	0.0079341	0.0091747	0.86	0.388
Market share	0.0128236*	0.00577	2.22	0.027
Interaction between capital and market share	-0.004643*	0.0019106	-2.43	0.016
Interaction between supervisory review and market share	-0.0054815	0.0034023	-1.61	0.108
Interaction between market discipline and market share	-0.0009128	0.0020246	-0.45	0.652
Constant	-0.0081872	0.0099765	-0.82	0.413
Dependent variable= Financial performance (ROA) Number of observation =276, F (7, 268) =12.94, Prob> F=0.0000, R-square=0.2218 *denotes 5% level of significance.				

Source: Research Data (2021)

The results in table 4.12 show an R-squared of 0.2218 implying that capital, supervisory review, market discipline, market share and interactions between Basel accord requirements and market share explains about 22% of variations in ROA of commercial banks in Kenya. Further, R-squared in table 4.12 has increased to 22.18% from 20.60% in table 4.11 above. This shows that the increase in R-squared was different from zero hence model fitted in table 4.12 was significant in predicting financial performance and the explanatory variables were

satisfactory in explaining the variations in ROA although the explanatory power was low meaning that Basel accord requirements were poorly implemented by commercial banks operating in Kenya over the period of analysis (2013-2020).

F statistics value was 12.94 with a p-value of 0.000<0.05. This indicates that jointly capital, supervisory review, market discipline, market share as a moderator were significant in explaining variations in financial performance based on ROA. Further, capital, supervisory review, market discipline and market share jointly contribute significantly to changes in financial performance of commercial banks in Kenya.

The coefficient of capital (β=0.0559723, p-value of 0.002<0.05) shows that capital has a positive significant effect on financial performance of commercial banks in Kenya. The regression coefficient of 0.0559723 means that a unit increase in capital would lead to 0.0559723 units increase in financial performance of commercial banks, holding other variables constant.

Supervisory review coefficient (β=0.002039, p-value of 0.891>0.05) indicates that supervisory review has a positive insignificant effect on financial performance of commercial banks in Kenya. The regression coefficient of 0.002039 implies that a one percent increase in supervisory review would lead to (0.002039/100) units increase in financial performance of commercial banks, holding other variables constant.

Market discipline coefficient (β=0.0079341, p-value of 0.388>0.05) shows that market discipline has a positive insignificant effect on financial performance of commercial banks in Kenya. The regression coefficient of 0.0079341 implies that a unit increase in market

discipline would lead to 0.0079341units increase in financial performance of commercial banks, holding other variables constant.

Market share coefficient (β=0.0128236, p-value of 0.027<0.05) shows that market share has a positive significant effect on financial performance of commercial banks in Kenya. This means that market share directly affects financial performance and thus can moderates the relationship between Basel accord requirements and financial performance of commercial banks. Regression coefficient of 0.0128236 implies that a unit increase in market share would lead to 0.0128236 units increase in financial performance of commercial banks while holding other factors constant. The regression coefficient of constant of -0.0081872 is the value of financial performance in terms of return on assets when capital, supervisory review, market discipline, interaction of capital and market share, interaction of supervisory review and market share and interaction of market discipline and market share values are equal to zero.

The null hypothesis **H_{04}** – market share has no significant moderating effect on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya was divided into three sub-hypotheses as follows. Market share has no significant moderating effect on the relationship between capital and financial performance of commercial banks in Kenya as measured by ROA formed the first null sub-hypothesis. The results in table 4.12 show coefficient of interaction between capital and market share as a moderator variable (β=-0.004643, p –value of 0.016<0.05) has a negative and significant effect on ROA. Thus, the first null sub-hypothesis was rejected. The coefficient of -0.004643 implies that joint increase of capital and market share by one unit would reduce financial performance of commercial banks in Kenya by 0.004643 units, holding other factors constant.

The market share has no significant moderation effect on relationship between supervisory review and financial performance of commercial banks in Kenya was the second null sub-hypothesis. Table 4.12 results show that the coefficient of the interaction between supervisory review and market share (β=-0.0054815, p-value of 0.108>0.05) has a negative and insignificant effect on financial performance of commercial banks in Kenya (ROA). Therefore, market share does not moderate the relationship between supervisory review and financial performance of commercial banks in Kenya and thus the study accepted second null sub-hypothesis. The coefficient of -0.0054815 implies that joint increase of supervisory review and market share by one unit would reduce financial performance of commercial banks in Kenya by 0.0054815 units, holding other factors constant.

The market share has no moderating effect on the relationship between market discipline and financial performance of commercial banks in Kenya formed the third null sub-hypothesis. Table 4.12 findings show that the coefficient of the interaction between market discipline and market share (β=-0.0009128, p-value of 0.652>0.05) has a negative and an insignificant effect on financial performance of commercial banks in Kenya (return on assets). Therefore, market share does not moderate the relationship between market discipline and financial performance of commercial banks in Kenya and hence the study accepted the third null sub-hypothesis. The coefficient of -0.0009128 implies that joint increase of market discipline and market share by one unit would reduce financial performance of commercial banks in Kenya by 0.0009128 units holding other factors constant. Based on the analysis in table 4.12 the following model 3.4 was formulated.

$$ROA_{it} = -0.0081872 + 0.0559723CA_{it} + 0.002039SR_{it} + 0.0079341MD_{it} + 0.0128236M_{it} - 0.004643(M * CA)_{it} - 0.0054815(M * SR)_{it} - 0.0009128(M * MD)_{it} + \varepsilon_{it} \ldots..3.4$$

Where

ROA_{it} = Return on asset ratio for bank i at time t

CA_{it}= Capital for bank i at time t

SR_{it}= Supervisory review for bank i at time t

MD_{it} = Market discipline for bank i at time t

M_{it} = Market share, the moderator variable for bank i at time t.

$(M * CA)_{it}$=interaction term between capital and market share for bank i at time t.

$(M * SR)_{it}$=interaction term between supervisory review and market share for bank i at time t.

$(M * MD)_{it}$=interaction term between market discipline and market share for bank i at time t.

The following table 4.13 summarizes the two steps moderation effect of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya as specified by Baron & Kenny (1986).

Table 4.13: Summary of findings of moderating effect of market share

	Analysis	**Coefficients**	**Findings**	**Decision**
Basel accord requirements	**Step one:**	Fstat. 17.53, 0.0000<0.05	Significant	Model is fit

and return on assets.	Market share as an independent variable	Market share 0.004546, p=0.149>0.05	Insignificant	No direct influence
Basel accord requirements and return on assets.	**Step two:** Market share as a moderator variable.	Fstat. 12.94, 0.0000<0.05	Significant	Model is fit
		Market share 0.0128236, p=0.027<0.05	significant	Moderates
		Capital*market share -0.004643, p=0.016<0.05	Significant	Moderates
		Supervisory review*market share -0.0054815, p=0.108>0.05	Insignificant	No moderation
		Market discipline*market share -0.0009128, p=0.652>0.05	Insignificant	No moderation

Source: Research Data (2021)

Table 4.14: Summary of hypotheses testing

Hypotheses	**Findings**	**Decision**	**Conclusion**
$H_{01:}$ Capital has no significant effect on financial performance of	β=0.024888 p=0.030<0.05	Rejected H_{01}	Capital has a positive significant effect on financial performance

commercial banks in Kenya.			of commercial banks in Kenya.
$H_{02:}$ Supervisory review has no significant effect on financial performance of commercial banks in Kenya.	β=0.0297212, p=0.000<0.05	Rejected H_{02}	Supervisory review has a positive significant effect on financial performance of commercial banks in Kenya.
$H_{03:}$ Market discipline has no significant effect on financial performance of commercial banks in Kenya.	β=0.004552 p=0.418>0.05	Accepted H_{03}	Market discipline has a positive insignificant effect on financial performance of commercial banks in Kenya.
$H_{04\text{-}i}$ Market share has no significant moderating effect on capital and financial performance of commercial banks in Kenya relationship.	$\beta_6(Market\ share * capital)_{it}$ β=-0.004643 p=0.016<0.05	Rejected $H_{04\text{-}i}$	Market share has a negative significant moderating effect on the relationship between capital and financial performance of commercial banks in Kenya.

$H_{04\text{-ii}}$ Market share has no significant moderating effect on supervisory review and financial performance of commercial banks in Kenya relationship.	$\beta_7(Market\ share * Supervisory\ review)_{it}$ β= -0.0054815 p=0.108>0.05	Accepted $H_{04\text{-ii}}$	Market share has a negative insignificant moderating effect on the relationship between supervisory review and financial performance of commercial banks in Kenya.
$H_{04\text{-iii}}$ Market share has no moderating effect on market discipline and commercial banks financial performance in Kenya.	$\beta_8(Market\ share * Market\ discipline)_{it}$ β= -0.0009128 p=0.652>0.05	Accepted $H_{04\text{-iii}}$	Market share has a negative insignificant moderating effect on market discipline and financial performance of commercial banks in Kenya relationship.

Source: Research Data (2021)

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions and recommendations of the study, contribution to knowledge and areas for further research. The summary of the study was informed by the research specific objectives while conclusions and recommendations were informed by the findings of the study.

5.2 Summary of the Study

Economic growth of a country can be partly attributed to an efficient, stable and well-functioning banking system. Basel accord requirements have been identified as one of the key aspects that can lead to improving financial performance of commercial banks. Several studies have been conducted on the effect of Basel accord requirements and financial performance of commercial banks. However, these studies concentrated only on the effect of one aspect of Basel accord requirements on financial performance of commercial banks. Further, the studies mostly were direct relationship studies and also their findings were inconclusive. The present study analyzed the effects of capital, supervisory review and market discipline on financial performance of commercial banks in Kenya using positivism research philosophy and causal research design. In addition, moderating effect of market share on financial performance and Basel accord requirements relationship was tested. Panel data from individual banks' published financial reports and banking supervision annual reports was utilized. Panel linear regression model, correlation analysis, mean, standard deviation, maximum and maximum values analyzed the data.

The first objective was to establish the effect of capital on financial performance of commercial banks in Kenya. Using regression analysis, the study reported that capital positively and significantly affected ROA of commercial banks in Kenya. Thus, increase in capital would enhance financial performance of commercial banks in Kenya. The study further validated the buffer theory of capital which stated that increase in capital enhances financial performance of commercial banks. The second objective was to examine the effect of supervisory review on financial performance of commercial banks in Kenya. The study used pooled regression model and reported that supervisory review had a positive and significant effect on return on assets of commercial banks in Kenya. Therefore, increase in supervisory review would increase financial performance of commercial banks in Kenya. The study findings were consistent with information asymmetry information theory which asserted that increasing the quality of commercial bank supervision improves financial performance. The third objective was to assess the effect of market discipline on financial performance of commercial banks in Kenya. The study established that market discipline had a positive and an insignificant effect on ROA of commercial banks in Kenya. Thus, increase in supervisory review would increase financial performance of commercial banks in Kenya, even though the effect of supervisory review was not significant. The fourth objective was to determine the moderating effect of market share on the relationship between Basel accord requirements and financial performance of commercial banks in Kenya. Basel accord requirements were presented by capital, supervisory review and market discipline. The study findings indicated that market share negatively and significantly moderated the capital and financial performance of commercial banks relationship. However, Market share had a negative and an insignificant moderating effect on the relationship between supervisory review and financial performance

relationship. Also, market share had a negative and an insignificant moderating effect on the relationship between market discipline and financial performance of commercial banks in Kenya.

5.3 Conclusions

The current study makes several conclusions relating to the study objectives on the basis of the previous empirical findings. Objective one indicates that capital has positive and significant effect on financial performance of commercial banks in Kenya as measured by return on assets. The finding is supported by several empirical studies although it also contradicts other studies. Therefore, the study concludes that as commercial banks holds more capital their financial performance increases since they may use the held up capital to issue new loans to the customers at times when the economy is not performing well.

In view of objective two, the study found that supervisory review has positive and significant effect on return on assets. The finding of the current study is supported by several empirical studies though it also contradicts other studies. The study therefore concludes that as the quality of supervisory review of commercial banks is improved, it may enhance the return on assets as commercial banks will not carryout activities restricted by central bank of Kenya.

The results of objective three showed that market discipline has positive and an insignificant effect on return on assets. The finding is supported by several empirical studies although it also contradicts other studies. Hence, the study concludes that as commercial banks improves the quality of financial and non-financial information disclosed in their financial reports, investors may make informed decisions at time of investment in commercial banks hence increasing return on assets.

The finding of objective four indicates that market share has negative and significant moderating effect on the relationship between capital and financial performance of commercial banks in Kenya. Further, market share has negative and an insignificant moderating effect on the relationship between supervisory review and financial performance. Finally, market share has negative and an insignificant moderating effect on the relationship between market discipline and financial performance. The study thus concludes that as market share increases it reduces the effect of capital on financial performance of commercial banks in Kenya. The current study further concludes that as market share increases the effect of supervisory review and market discipline on financial performance of commercial banks also reduce though the effect is not significant.

5.4 Recommendations

The following recommendations were obtained from the study findings and conclusions. Capital had positive and significant effect on financial performance of commercial banks in Kenya. The study therefore recommends that commercial banks of Kenya should adhere to the Banking Amendment Act (2012) which advocates for increase of capital to Kshs. One billion so as to enhance financial performance of commercial banks in Kenya. The study further, recommends that central bank of Kenya should be on the lookout for the reduction of capital levels among commercial banks in Kenya so as to prevent financial crisis from occurring hence maintaining confidence in the banking sector.

Supervisory review was found to have positive and significant effect on financial performance of commercial banks in Kenya. Thus, central bank of Kenya should design banking financial policies that increase the number and quality of audit reviews thus preventing commercial

banks from engaging in activities restricted by central bank of Kenya. Hence, may increase financial performance of commercial banks in Kenya. The study also recommends that commercial banks in Kenya should adhere to the prudential guidelines on supervisory review so as to enhance financial performance.

Market share had negative significant moderating effect on capital and financial performance of commercial banks in Kenya relationship. The study accordingly, recommends that commercial banks managers in Kenya should ensure that there is vigorous product promotion as well as development of innovative products so that they can attract more customers hence increasing their customer base and deposits. Further, the study recommends that the public should be trained on financial literacy so that they can consume the already existing commercial banks' products. This may enhance financial performance of commercial banks in Kenya.

5.5 Contribution to Knowledge

The study significantly contributed to knowledge on the effect of Basel accord requirements on financial performance of commercial banks. The study successfully analyzed the effect of the aspects of Basel accord requirements on the financial performance of commercial banks in Kenya. Particularly, tested the hypotheses that capital, supervisory review and market discipline had no significant effects on financial performance of commercial banks in Kenya. Based on the findings of the study, the researcher suggested several policies for bank managers, government and bank regulators in order to improve financial performance of commercial banks.

Further, the study assessed the moderation effect of market share on Basel accord requirements and financial performance of commercial banks in Kenya relationship and revealed that market share had a negative and significant moderating effect on the relationship between financial performance and capital. Further, market share had a negative and an insignificant moderating effect on supervisory review and financial performance of commercial banks in Kenya relationship. Finally, market share had a negative and an insignificant moderating effect on the relationship between market discipline and financial performance of commercial banks in Kenya.

5.6 Further Research

The study scope was commercial banks operating in Kenya from 2013 to 2020. A similar study can be conducted to study the influence of Basel accord requirements on financial performance of other financial and non-financial institutions. Further, this study only focused on financial performance of commercial banks. Therefore, a study can be conducted to study the effect of Basel accord requirements and overall financial performance of financial as well as non- financial institutions. Future studies should consider also, inclusion of macroeconomic variables like Gross Domestic Product (GDP), inflation rate, interest rate, political risk that the current study did not capture as moderating variables but which can affect the operations of banks thus influencing financial performance of commercial banks.

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APPENDICES

Appendix I: Document Review Guide

Variable	**Measurement**	**Formula**	**Data**	**Source- Financial reports 2013-2020**
Capital	Shareholder's funds to risk weighted assets.	Shareholder's funds/risk weighted assets ➢ Shareholder's funds = Equity capital	Equity capital	Statement of financial position
		➢ Risk weighted assets = credit risk weighted assets+ market risk weighted assets + operational risk weighted assets.	Risk weighted assets	Balance sheet
Supervisory Review	Number of CBK audits.	Natural logarithm of the number of CBK audits.	Audit by CBK	Financial reports
Market Discipline	Corporate disclosure index	CDI= $\frac{\text{individual bank's scores attained}}{\text{maximum scores attainable by a bank}} x100$	Disclosure of financial and non-financial	Financial reports

			information-Schedule III	
Market share	Market share index.	Weighted composite index=0.33*net assets+0.33* customer deposits+0.33* capital & reserves+0.005*deposit accounts+0.005*number of loan accounts. **Note:** the items to this formula are calculated in proportion to all banks.	Assets	Statement of financial position
			Deposits	Balance sheet
			Capital	Statement of financial position
			Number of deposit accounts	Disclosures in financial statements
			Loan accounts	Disclosures in financial statements

Financial Performance	Return on assets (ROA)	Earnings before interest and tax/Total assets	Earnings before interest and tax	Statement of financial performance
			Total assets	Statement of financial position

Source: Researcher (2021)

Appendix II: Document Review Guide: Data entry

Name of the Bank……...

Bank Peer Group……

Year	Capital	Supervisory review	Market discipline	Market share	Financial performance
2013					
2014					
2015					
2016					
2017					
2018					
2019					
2020					

Source: Researcher (2021)

Appendix III: Market Discipline Schedule

Name of the Bank……...

Bank Peer Group……

S/No	List of Disclosure items	2013	2014	2015	2016	2017	2018	2019	2020
	General information								
1	Brief narrative about the bank								
2	Basic organizational structure/chart								
3	General description of business activities								
4	Date of establishment of the bank								
5	Registered address								
6	Web address of the bank/email address								
	Corporate strategy information								
7	Management objectives and strategies/corporate vision/statement								
8	Future strategy-information for future expansion								
	Corporate governance information								

9	Details about the chairman (other than name/title)								
10	Details about the directors background of the directors/academic/professional experiences.								
11	Number of shares held by directors								
12	List of senior managers (not on the board of directors)/senior management structure								
13	Directors' engagement/directorship of other banks								
14	Picture of all directors/board of directors								
15	Picture of chairman								
16	Composition of board of directors								
17	Number of BOD meetings held and date								
	Financial ratios information								

18	Brief discussion and analysis of a financial position								
19	Return on equity								
20	Net interest margin								
21	Return on assets								
22	Debt equity ratio								
	Accounting policies								
23	Discussion on accounting policy								
24	Disclosure of accounting standards uses for accounts								
	Corporate social disclosure information								
25	Sponsoring of recreational projects								
26	Information on donations to charitable organizations								
	Others								
27	Chairman's report								
28	Performance at glance- 3 years								

Source: Researcher (2021)

Appendix IV: Weighted Composite Index- Market share

Market share index for a bank =0.33(Individual bank's assets/total assets for all the banks) +0.33(Bank deposits/total deposits for all banks combined) +0.33(Capital for the bank/total summation of capital for all banks) + 0.005(Number of deposit accounts for a bank/total number of deposit accounts for all banks) +0.005(Loan accounts for the bank/total number of loan accounts for all banks together).

Source: (Central bank of Kenya, 2020)

Appendix V: List of sampled commercial banks in Kenya

S/No	Peer Group - Large	S/No	Peer Group- Medium	S/No	Peer Group - Small
1	Co-operative Bank of (K) ltd	10	Bank of Baroda (K) ltd	20	African Banking Corporation ltd
2	Commercial Bank of Africa ltd	11	Bank of India	21	Bank of Africa (K) ltd
3	Absa Bank (K) Plc	12	Citibank N.A (K)	22	Consolidated Bank of (K) ltd
4	Diamond Trust Bank (K) ltd	13	Eco bank (K) ltd	23	Credit Bank ltd
5	Equity Bank (K) ltd	14	Family Bank ltd	24	Development Bank of (K) ltd
6	I & M Bank ltd	15	National Bank of (K) ltd	25	Guaranty Trust Bank ltd
7	KCB Bank (K) ltd	16	NIC Bank PLC	26	Guardian Bank ltd
8	Stanbic Bank (K) ltd	17	Prime Bank ltd	27	Gulf African Bank ltd
9	Standard Chartered Bank (K) ltd	18	Fidelity Commercial Bank (K) ltd	28	Habib Bank A.G Zurich
		19	HCF ltd.	29	First Community Bank ltd
				30	Middle East Bank (K) ltd
				31	M-Oriental Commercial Bank ltd
				32	Paramount Bank ltd
				33	K-rep Bank ltd
				34	Equatorial Commercial Bank ltd

				35	Transnational Bank ltd
				36	UBA (K) Bank ltd
				37	Victoria Commercial Bank ltd
				38	Jamii Bora Bank Ltd.

Source: (Central bank of Kenya, 2020)

Appendix VI: Research Authorization

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
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P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

DATE: 2nd December, 2020

TO: Mathina R. Wanjiru
C/o Department of Accounting & Finance
KENYATTA UNIVERSITY

REF: D86/CTY/32515/15

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that the Graduate School Board at its meeting 24th November, 2020 approved your Ph.D. Research Proposal entitled "Basel Accord Requirements and Financial Performance of Commercial Banks in Kenya".

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking and Progress Report Forms. The Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.

REUBEN MURIUKI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Department of Accounting & Finance
Registrar (Academic) Att; Mr. Richard Chweya

Supervisors:

1. Dr. Ambrose Jagongo
   C/o Department of Accounting & Finance
   KENYATTA UNIVERSITY
2. Dr. Lucy Wamugo
   C/o Department of Accounting & Finance
   KENYATTA UNIVERSITY

EM/cao

Appendix VII: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **210156**

Date of Issue: **15/December/2020**

RESEARCH LICENSE

This is to Certify that Ms.. RUTH WANJIRU MATHINA of Kenyatta University, has been licensed to conduct research in Nairobi on the topic: BASEL ACCORD REQUIREMENTS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA for the period ending : 15/December/2021.

License No: **NACOSTI/P/20/8207**

210156

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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Appendix VIII: Fixed and Random Effects Results

Table A. 1: Fixed Effect Results

Note: SupervisoryReview2 omitted because of collinearity

Fixed-effects (within) regression Number of obs = 276

Group variable: BankID Number of groups = 37

R-sq: Obs per group:

within = 0.0056 min = 2

between = 0.0546 avg = 7.5

overall = 0.0195 max = 8

F (3,236) = 0.44

corr(u_i, Xb) = -0.9674 Prob > F = 0.7225

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Capital	-.0012801	.0145525	-0.09	0.930	-.0299495	.0273893
SupervisoryReview2	0	(omitted)				
MarketDiscipline	-.2568884	.2501103	-1.03	0.305	-.7496225	.2358457
MarketShare	.0020584	.0057546	0.36	0.721	-.0092786	.0133954
_cons	.2021106	.1795187	1.13	0.261	-.1515531	.5557743
sigma_u	.08905531					
sigma_e	.0341331					
rho	.87191305	(fraction of variance due to u_i)				

F test that all u_i=0: F (36, 236) = 1.15 Prob > F = 0.2655

Source: Research Data (2021)

Table A. 2: Random Effect Results

Random-effects GLS regression Number of obs = 276

Group variable: BankID Number of groups = 37

R-sq: Obs per group:

within = 0.0001 min = 2

between = 0.6151 avg = 7.5

overall = 0.2055 max = 8

Wald chi2(4) = 70.08

corr(u_i, X) = 0 (assumed) Prob > chi2 = 0.0000

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Capital	.021722	.0128676	1.69	0.091	-.003498	.046942
SupervisoryReview2	.000474	.0048835	0.10	0.923	-.0090976	.0100456
MarketDiscipline	.0061218	.0075548	0.81	0.418	-.0086852	.0209289
MarketShare	.0048116	.0011812	4.07	0.000	.0024964	.0071267
_cons	.0036481	.0079411	0.46	0.646	-.0119161	.0192124
sigma_u	0					
sigma_e	.0341331					
rho	0	(fraction of variance due to u_i)				

Source: Research Data (2021)