EFFECT OF LOAN PRODUCTS ON ASSET QUALITY OF COMMERCIAL BANKS IN KENYA

By

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REG NO: 16/09035

MASTER OF SCIENCE (FINANCE AND INVESTMENTS)

KCA UNIVERSITY

2021

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (FINANCE AND INVESTMENTS) IN THE SCHOOL OF BUSINESS AT

KCA UNIVERSITY

SEPTEMBER 2021

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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Signature…… Date……

I do hereby confirm that I have examined the master's dissertation of

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And have approved it for examination.

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ABSTRACT

The lending function is considered as the most important function of any commercial bank, since most of the banks' earnings are generated from interest income. In the past, large number of non-performing loans had contributed quite significantly to low profits in Kenyan banks. Banks are now reviewing their lending portfolios using the laid down criteria such as credit modeling by Basel Committee on Banking Supervision. This study examined the effect of loan products on asset quality of commercial banks in Kenya. The specific objectives determined the effect of commercial loans, asset financing, vendor financing and real estate loans on asset quality of commercial banks. Agency theory, theory of information asymmetry and Loanable funds Theory informed the study. The study adopted a descriptive research design approach where the target population included the 41 commercial banks for the period 2015-2019. The study used secondary data that was extracted from the websites of the respective commercial banks. The study used panel regression analytical model. This study conducted serial correlation tests, heteroscedasticity tests and multicollinearity test to evaluate the data collected before the actual analysis. The results indicated a positive and significant relationship between commercial loans and the asset quality of commercial banks ($\beta= 0.071$, $p=0.030$). Further, there was a positive and significant relationship between asset financing loans and asset quality of commercial banks ($\beta= 0.144$, $p= 0.000$). Vendor financing loans had a positive and significant relationship with asset quality of commercial banks ($\beta= 0.076$, $p= 0.025$). Lastly, real estate loans revealed a positive and significant relationship with asset quality of commercial banks ($\beta= 0.151$, $p= 0.000$). The study concluded that commercial loans, asset financing, vendor financing and real estate loans affected asset quality of commercial banks in a positive and significant way. The study recommended that the commercial bank should focus on reducing the level of non-performing loans because when diversifying the loan portfolio where there is a high credit risk. The study recommended that the commercial bank to be sure that the collateral is protected and will not deteriorate, this costs the bank money. Lastly, the study recommended banks should develop comprehensive strategic plans detailing on how they will deal with non-performing loans in their occurrence in a systematic way.

Keywords: Commercial Loans, Asset Financing, Vendor Financing, Real Estate Loans, Asset Quality and Commercial Banks.

ACKNOWLEDGEMENT

Sincere appreciation is to Almighty God, who granted me the gift of life, a chance to education, and the privilege of carrying out this dissertation. I also thank my supervisor, for the continuous assistance, in the entire process of writing this dissertation.

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DEDICATION

I dedicate this thesis to my family who bore the demands of this course. I wish to appreciate my friends for their constant prayers for me and bringing me up the way they did.

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ACRONYMS AND ABBREVIATION

C&I: Commercial and Industrial

CBK: Central Bank of Kenya

CRB: Credit Reference Bureau

MPT: Modern Portfolio Theory

NPLs: Non-Performing Loans

NSE: Nairobi Securities

OLS: Ordinary Least Square

VIF: Variance inflation factors

OPERATIONAL DEFINITION OF TERMS

Asset Financing These loans provides business access with assets such as equipment, machinery and vehicles without having to buy them upfront (Thiong'o, 2018).

Asset Quality A rating that reflects the quantity of existing and potential credit risk associated with the loan and investment portfolios, other real estate owned, and other assets, as well as off-balance sheet transactions (Westerhuis, 2016).

Commercial Loans These loans are issued to business and corporation as opposed to an individual (Hochman & Timilsina, 2017).

Real Estate Financing These loans are provided to finance or capital for housing purchase or building. Real estate finance also means the capital required for construction of housing or the resources required to acquire or access housing project by household or the credit supplied by housing finance institutions against some collateral (Dymski, 2017).

Vendor Financing These loans by banks provides money to be used by the borrower to buy the vendor's products or property (Misati & Kamau, 2017).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The lending function is considered as the most important function of any commercial bank, since most of the banks' earnings are generated from interest income. In the past, large number of non-performing loans had contributed quite significantly to low profits in Kenyan banks. Banks are now reviewing their lending portfolios using the laid down criteria such as credit modeling by Basel Committee on Banking Supervision. According to Jones and Zeitz (2017), the Basel's goal is to induce bankers to improve their credit management capability. This includes how the institutions schedule form loans, pricing products, and control their operations, to reduce a bank's operational risk during the lending process (Munene, Ndambiri & Wanjohi, 2019).

Commercial banks' lending could be on short, medium and/or long-term basis is a major service rendered by the commercial bank to their customers (Misati & Kamau, 2017). Banks make various types of loans that include commercial and industrial loans, asset financing, vendor financing and real estate loans (Machoka & Jagongo, 2020; Nyasaka, 2017; Timsina, 2017). These loan products are key due to Non-Performing Loans (NPLs). NPLs have gained increasing attentions in the last few decades with its negative effect on the banking sector and the economy as a whole. The probability of incurring losses from non-payment of loans or other forms of credit by debtors are mostly encountered in the financial sector particularly by commercial banks (Saleh, 2019).

In Canada, banks represent 70 per cent of all lending supplied to businesses through business loans, short-term promissory notes known as bankers' acceptances, non-residential mortgages and other loan products (Truno, Stolyarov, Auger & Assaf, 2017).Considering the financing market more broadly, including the capital markets, banks represent roughly one-quarter of the total business-financing marketplace. Banks in Canada asses the total business package when making financing decisions and the ability to repay a loan is determined by factors such as the business plan, cash flow projections, asset base, sales and marketplace analysis and business viability (Coletti, Gosselin & MacDonald, 2016). In Germany, commercial and industrial loans carry a majority share when compared with asset financing and vendor financing (Schwan, 2020). According to Vithessonthi, Schwaninger and Müller (2017) a relatively large share of loans to the manufacturing sector and particularly the core of Germany industry, mechanical engineering and automotive is provided by commercial banks.

In Africa, the Nigerian banking industry has been strained by the deteriorating quality of its credit assets as a result of the significant rise in Nonperforming loans (Olaoye, Adedeji & Ayeni-Agbaje, 2018).According to the National Bureau of Statistics (2020), non-performing loans in Nigerian banks increased to N1.212 trillion at the end of June 2020, from N1.059 trillion recorded in December 2019, indicating that NPLs across Nigerian banks rose by N152.4 billion or 14.38% in six months. In South Africa, the Bank Lending Practices Survey (2020) overall credit stance of banks towards household indicated very little change in 2018 compared to 2019. However, the three were elements of greater leniency towards mortgage lending and greater stringency towards assets and motor vehicle financing.

Locally, the Kenya Bankers Association (2019) noted that the rate of deposits rose from 6 percent in 2016 to 11 percent in 2018, the loans rate of growth dropped being 2 percent in 2018

compared to 6 percent and 4 percent in 2016 and 2017 respectively. Consequently, the loans to deposits ratio declined from 84 percent in 2016 to 74 percent in 2018. This signals the imperative need for analyzing the loan products by the Commercial banks. In Kenya, Commercial banks observes the creditworthiness of the clients by checking in the credit report agencies and bureaus for instance Credit Reference Bureau (CRB) that issue the credit rating scores (Muigai & Maina, 2018). The commercial banks thus takes a calculated risk by lending the loans to clients and awaits the payment when the credit gets due (Nyasaka, 2017).

1.1.1 Bank Loan products

Loan products of commercial banking change relatively with time and economic conditions (Agwu, 2018). Standards and products which have proved successful in making loans to finance the production of goods and services continue to be utilized. Successful loan products have been adapted to meet the new financing needs of industry and commerce, vendor financing, households, asset financing and real estate financing (Saliya & Jayasinghe, 2016; Nyasaka, 2017; Timsina, 2017). In some cases, new techniques of lending have been devised in order to extend credit to finance new types of business. The key loan products adopted in this study include commercial loans, asset financing, vendor financing and real estate financing loans.

Commercial loans are issued to business and corporation as opposed to an individual (Hochman & Timilsina, 2017). According to Ghosh (2017), commercial and industrial loans provide finance capital expenditures such as machinery or a piece of equipment. These less liquid assets earn more income but are inherently more risky (Westerhuis, 2016). Within the different categories of loans, commercial and industrial loans are among the riskier types of loans that affect asset quality (Truno, Stolyarov, Auger & Assaf, 2017).

Asset financing type of lending provides business access with assets such as equipment, machinery and vehicles without having to buy them upfront (Thiong'o, 2018). Most of the asset financing products are designed to facilitate financing of movable assets. Asset financing is found to be attractive to businesses who want to put their growth plans into action but do not necessarily have the ready cash, or business owners who would rather spread large costs over a longer period (Saleh, 2019).

Vendor financing by banks provides money to be used by the borrower to buy the vendor's products or property (Misati & Kamau, 2017). These types of loans come with a higher rate of interest due to the higher risk of default. The vendor financing may be debt financing or equity financing and the borrower makes an initial deposit. The balance of the loan, plus any accrued interest is paid over an agreed period with regular repayments (Mohamed, 2019).

Real estate financing is the provision of finance or capital for housing purchase or building. Real estate finance also means the capital required for construction of housing or the resources required to acquire or access housing project by household or the credit supplied by housing finance institutions against some collateral (Dymski, 2017). Real estate finance loans are generally structured as long-term loans, the periodic payments for which are similar to an annuity and calculated according to the time value of money formula (Chen & Kieschnick, 2018). Accordingly, the modern portfolio theory suggests that commercial banks will engage in real estate financing as a way of diversifying their loan portfolio and also due to the fact that real estate financing is more profitable in the long run will influence their asset quality positively (Godswill, Ailemen & Pascal, 2018).

The study by Ezirim (2015) finds that bank loan products are fraught with risks, which calls for a great deal of caution and tact in this aspect of banking operations. The success of

every lending activity largely hinges on the part of the credit analysts to carry out good credit analysis, presentation, structuring and reporting. Commercial banks also have strategies on follow-up and enforcement to the person they lend to ensure that the credit is paid (Levine, 2018). In the case of asset-based financing, the commercial institution can recover their amount through the auction and foreclosure in case the creditor declines to make payment (Roberts, 2014).

1.1.2 Asset Quality

Loans granted to businesses and households are assets for banks. The interest banks earn on these assets is a key component of their income and profit, and the risk of the loans not being paid back is their main risk. The higher this credit risk, the lower the quality of the loan, or asset quality (Westerhuis, 2016). When their asset quality decreases, banks must hold more capital to cover the related credit risk and book higher provisions to prepare for the expected losses. Asset quality is a key concern as many borrowers default on their loans and the volume of non-performing loans increases (Olokoyo, 2017). To mitigate losses and the impact on banks' soundness and capacity to lend, banks must follow solid lending criteria at all times, actively monitor asset quality, and proactively tackle non-performing loans (Truno, Stolyarov Auger & Assaf, 2017).

Performance of loans in the financial institutions is measured by the loan default rate of the borrowers. The shortcoming of the 37 banks leading to the year 1998 was caused by having so many non-performing loans by those banks. The definition of a non performing loan is one in which is the sum of borrowed money in which a borrower has not made any scheduled payments in a period of at least 90 days. It usually includes not paying the scheduled payments on both the principal and Interest. (Central Bank of Kenya, 2019). Before the inception of the information

sharing strategy and the CRB regulation, banks had no mechanisms of finding out about the financial relations of their new clients with other financial institutions.

Asset quality is the core reason behind the demise of wound up banks in Kenya. The reason for this is whenever these non-performing loans are high in one specific bank, then the other assets that have been provided as a provision for them cannot adequately protect them against any kind of risk particularly defaulting when it comes to its payments (Truno, Stolyarov, Auger & Assaf, 2017). Michael (2018) posits that the inclusion of non-performing assets in loan portfolios affects the operational efficiency of the banks, a situation that in turn affects the profits, liquidity and solvency of that bank. Further, non-performing assets also affect the stability of the bankers in respect to the disposition of the funds towards credit delivery.

The study by Abata (2018) argues that loan products such as commercial loans and asset financing positively influence asset quality. Izundu, Nwakoby and Adigwe (2017) observed that micro loan products have a positive but insignificant effect on banks asset quality. Sola et al., (2012) posits that a positive linear relationship between vendor financing products and bank asset quality. Vithessonthi, Schwaninger and Müller (2017) posits that a relatively large share of loan products to the manufacturing sector improves the asset quality for commercial banks.

1.1.3 Commercial Banks in Kenya

Kenya banking records during the time Indian National Bank was officially opened in Kenya. Commercial Banks and mortgage financial institutions are regulated and licensed inside the banking Act, cap 488 and the prudential guidelines, which is a creation of the Parliament of Kenya and effected by the central Bank of Kenya in association with other legal agencies. Banks usually anticipate and project their asset quality. Credit risk defaults and lower recoveries are also a cause of serious concern for the banks (Saliya & Jayasinghe, 2016; Nyasaka, 2017;

Timsina, 2017). To weather this storm, banks must implement a foolproof and agile strategy for risk mitigation. Banks need a non-traditional framework to manage risk, the treatment for which will vary based on the flexibility, soundness, and adaptability of the customers' business models. To aminain a sound asset quality, banks require a strong re-design and recalibration for their risk models and portfolio testing based on how a client performs against the business, management, and financial parameters (Truno, Stolyarov, Auger & Assaf, 2017).

There are 43 in number for commercial banks and one mortgage company in Kenya of which 13 of these institutions are foreign (CBK Annual Report, 2019). In the local commercial banks, the government of Kenya has majority shares in 3 commercial banks. The Kenyan banking industry is greatly influenced by a number of big commercial banks which are mostly foreign but partially Kenyan owned (CBK Annual Report, 2019).Six of the commercial banks are listed on Nairobi Securities Exchange.

1.2 Statement of the Problem

Lending activities are the key income sources for commercial banks. The loan products that commercial banks major on will have a key income in determination of asset quality. This is based on loan magnitude and repayment capacity in the commercial loans, asset financing, real estate financing. According to the Central Bank of Kenya (CBK), the ratio of non-performing loans (NPLs) rose from 12.5 percent to 13.1 percent in 2019. This further depicts an increase from 2018 that had an increase of 11% compared to 2017. The NPL increases were recorded in the manufacturing, trade and personal sectors. With the projection in the rise of non-performing loan, the effect relays a negative impact on the loan portfolio for the commercial banks. This in the long run affects banks' lending and to various economic sectors which would affect the

economy growth. In addition, examining commercial bank loans and their relationship with asset quality is important because business cycles affect the banking sector, and hence, bank lending.

Studies conducted in these area present research gaps. Ngondo (2018) study on the effect of lending rate on asset quality of commercial banks in Kenya presents a research gap as it focused on capital structure factors such as liquidity capital adequacy while the current study focused on the loan products. Ong'era and Onditi (2016) examined the loan lending policies on financial performance of commercial banks in Kenya. The study also presents a research gap since the current study focused on loan products and asset quality. The study by Njeri (2016) on lending policies by commercial banks in Kenya focused on the operational structures and used a questionnaire while the current study focused on the key lending sectors while measuring using secondary data. Izundu, Nwakoby and Adigwe (2017) explored the influence of commercial loans allocation on the profitability of deposit money banks in Nigeria and found that asset allocation was a crucial financial management tool for raising banks' profitability. This study is imperative because commercial banks in Kenya need to realize the sectors to maximize lending or reduce lending their assets in terms of their loans.

1.3 General Objective

The general objective of the study was to examine the effect of loan products on asset quality of commercial banks in Kenya.

1.3.1 Specific Objectives

The study was guided by the following specific objectives;

i. To determine the effect of commercial loans on asset quality of commercial banks in Kenya

ii. To evaluate the effect of asset financing on asset quality of commercial banks in Kenya

iii. To determine the effect of vendor financing on asset quality of commercial banks in Kenya

iv. To examine the effect of real estate loans on asset quality of commercial banks in Kenya

1.4 Research Hypotheses

The study tested the following hypotheses;

Ho_1: Commercial loans have no significant effect on asset quality of commercial banks in Kenya

Ho_2: Asset financing have no significant effect on asset quality of commercial banks in Kenya

Ho_3: Vendor financing have no significant effect on asset quality of commercial banks in Kenya

Ho_4: Real estate loans have no significant effect on asset quality of commercial banks in Kenya

1.5 Significance of the Study

This study contributes to the betterment of the following areas of specialization.

1.5.1 Researchers and Scholars

The study is of practice significance to both academicians and general practitioners as a source of knowledge and influence of loan products on asset quality of commercial Banks. The study report acts as reference and stimulate the interest among academicians and this will encourage further research on how loan products contributes towards realization of positive asset quality. It is expected to contribute to literature and form part of empirical review and may inspire prospective researchers to explore more dimensions within the context of lending practice and asset quality. The study is also expected to inform and enlighten the public the importance of prudent loan products undertaken by financial institutions.

1.5.2 Policy makers

The findings are important to regulators of commercial banks in Kenya in particular to the Central Bank of Kenya (CBK) that conducts the overall supervision. CBK fosters solvents, liquidates and monitors proper functioning of all the financial institution inclusive of the commercial banks by ensuring that all financial institutions are governed by the appropriate rules, laws and regulations and further ensure that the laws remain relevant by continuous reviewing it based on the current financial and market trends. The information is useful in their role of promoting financial institutions performance through incorporation into the CBK act, banking act and other related Acts which help in monitoring lending procedure and practice within the commercial banks in Kenya.

1.5.3 The Management of Banking Institutions

The board members and stakeholders including the management are responsible for putting structure in place to ensure that prudence is observed during lending. This study sought to examine the extent to which each practice relates with asset quality in the quest to determine the most suitable and effective lending practice. The study is of great significance to board members and stakeholders in commercial Banks since the obtained findings will help them understand the relationship between loan products and organization performance. This will help them to clearly understand how effective loan products can contribute towards realizations of increased commercial banks performance.

The study findings are also of great significance to the managers in the commercial banks since the obtained findings equips Bank managers with competitive strategic management skills enabling them develop credit risk management policies that will result to effectively formulated and implemented loan products to achieve their long term goals. The findings will

further influence the Bank management to fully understand how loan products affects the level of organization performance and measures that should be embraced to support successive lending policies that leads towards realization of increased banks performance.

1.6 Scope of the Study

The study focused on the effects of loan products on asset quality of commercial banks in Kenya. This involved undertaking an in-depth study based on commercial loans, asset financing, vendor financing and real estate financing. This study was based on all the 41 licensed and active commercial banks in Kenya (Appendix 1). The data covered a 5 year period from 2015 to 2019 to enable panel data analysis.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses theories relevant to the study. The concept of the study is developed under the conceptual framework section and finally reviews of empirical studies that have previously been conducted on the area of financial restructuring and asset quality.

2.1 Theoretical Review

The theoretical framework is the structure that can hold or support a theory of a research study. It introduces and describes the theory which explains why the research problem under study exists. Agency theory, theory of information asymmetry and Loanable funds Theory informed the study.

2.2.1 Portfolio Theory

The Portfolio theory was developed by Markowitz (1952) and first presented in his seminal paper on portfolio selection. The theory has since been modified by several researchers to be what is now commonly referred to as the Modern Portfolio Theory (MPT). MPT currently forms a cornerstone of finance and is widely accepted and applied in the field of finance and economics. The model suggests that organizations must diversify their portfolios to achieve maximum returns while at the same time reducing the risk in the portfolio. According to the portfolio theory, diversification is achieved through the allocation of resources to securities that promise maximum returns and minimum variance (Madan, 2018). Markowitz further posits that the securities with the highest expected returns are not necessarily the ones with the least variance. Due to the intercorrelation of the securities' returns, diversification cannot eliminate all

variance, and therefore the portfolio with maximum expected returns is not necessarily the one with the least variance (Llano-Paz, Calvo-Silvosa, Antelo & Soares, 2017).

The Portfolio theory portends that high-risk investments usually promise equally high-returns while low-risk assets equally promise low returns. All portfolios, therefore, exhibit all the characteristics of the individual assets used in their formation in terms of risk and return. Any investor who wishes to construct an optimal portfolio will be contending with a portfolio that neither promises the highest returns nor the lowest risk. The optimal portfolio will, however, seek to achieve a balance between the expected return and the acceptable level of risk (Cuchiero, 2019).

The framework of portfolio theory includes numerous assumptions on investors and markets. While some of these assumptions are explicit, others are implicit (Mangram, 2013). The portfolio theory makes the following assumptions; investors are rational (they seek to maximize returns while minimizing the risk), investors have timely access to information pertaining their investments, markets do not charge transaction costs and no tax is applicable for the transactions, investors will only accept higher risks if the expected returns are high, investors can borrow or lend capital at the risk-free rate of interest and markets are very efficient.

The Portfolio Theory is relevant to the study as it informs the banks to design a portfolio to maximize returns by accepting a quantifiable amount of risk on their key loan products that include issuance of commercial loans, asset financing, vendor financing and real estate financing loans. Portfolio diversification can help banks steer away from densely populated industry sectors and discover underserved markets.

2.2.2 Agency Theory

Agency theory was developed by Jensen and Meckling (1976) and argues for a clear separation of the responsibilities of the principals and the agents. Agency Theory argues that an agency relationship exists when one or more persons (the principal(s)) engage another person (the agent) to perform some service on theory behalf which involves delegating some decision making authority to the agent.

They argued that there is an increase in the gap between ownership and the control of large organizations that is precipitated by a decrease in equity ownership (Roshan, 2016). This situation provided an opportunity for the managers to pursue their own interests rather than maximizing returns to the shareholders. The top managers make decisions that increase the value of the firms because they often own shares in the firm in which they are working. Additionally, the managers are hired and retained by the board of directors who are elected by stockholders (Berk & DeMarzo, 2017).

Fama and Jensen (1983) made a study on the decision-making process and the residual claimants. They segregated the firm's decision process into two categories such as decision management and decision control, where agents are the key players in the process. The agent's level of effort affects the firms' output, where the principals desire for the higher level of effort from agents. Due to risk preference, the agents and the principal may have diverse preference in loans lending in the market. Whereas some sectors presents certain level of lending risk, this would have to be assessed by the agents on behalf of the principal which overall affect loan lending due to the risk appetite.

In situations where the banks have leverage, conflict of interest arises because investment interests have different consequences for the value of equity and the value of debt.

This conflict is best depicted in situations where the company is experiencing financial distress. In such situations, managers make decisions that protect the shareholders but disadvantage the creditors (Jensen & Meckling, 2016). Agency theory posits that optimal capital structure may result from minimizing the costs generated by the conflicts of interest between the firm's various stakeholders. On the other hand, pecking order theory suggests that no optimal financial performance exists; proponents of the theory argue that firms resort to debt financing only when earnings are unsatisfactory and only as a last resort do they opt for risky external financing.

Agency theory is relevant to the study as it suggests that there are other factors such as the actions of the management in financial decisions that can affect the loan products for commercial banks.

2.2.3 Theory of Information Asymmetry

Stiglitz (1961), Akerlof (1970) and Spence (1973) are the three proponents' economists who developed theory of asymmetric information. Asymmetric information is a problem in financial markets such as borrowing and lending. In these markets the borrower is more informed about his financial state than the lender. This results in market failure. In a perfect market settings, with perfect and costless information available to both parties, and no uncertainties regarding present and future trading conditions, the parties does not suffer from market failure of information.

In a perfect markets settings, with perfect and costless information available to both parties, and no uncertainties' regarding present and future trading conditions, the parties does not suffer from market failure of information (Andrei, Cujean, & Wilson, 2018). However, information in the real world is neither perfect nor costless, and additionally small businesses finance market is characterized by risk and uncertainty regarding future conditions. Information

is distributed asymmetrically between the lender and borrower. From the lenders perspective, it has incomplete information with regard to underlying quality of the project and the management of small firms, giving rise to the problem of adverse selection (Fama & French, 2014). Furthermore the management of small firm may fail to perform to their full capabilities, giving rise to the problem of moral hazard. The later arises because it is too costly for lenders especially banks to effectively monitor small firms' projects, thereby resulting in equilibrium credit rationing and a shortfall in finance provision (Bester, 1987). The general problem of information asymmetry can manifest itself in one of three ways: acceptance of the loan application but at a higher than risk-adjusted interest rate; acceptance but with strict collateral requirements; or outright rejection of the loan application (Jakab & Kumhof 2015).

Theory of Information Asymmetry is relevant in the study on the application of information asymmetry in bank lending based on the information available. Different financing instruments are employed to secure loans. A major factor in decision-making is the information relevant to the matter at hand. If the necessary information is asymmetrically disclosed among the users, it can lead to different views on the same matter thus affecting the loan lending practice.

2.2 Empirical Review

This section attempts to explore previous studies carried out on loan products and specifically review empirical researches relating to the specific objectives of this study. Majorly, the section evaluates the effect of commercial loans, asset financing, vendor financing and real estate loans on asset quality of commercial banks.

2.2.1 Commercial Loans on Asset quality of Commercial Banks

Koch and Macdonald (2018) suggested that commercial and industrial (C&I) loan processes follow 8 steps which are application, credit analysis, decision, document preparation, closing, recording, servicing and administration and collection. Menkhoff, Neuberger and Suwanaporn (2016) found that banks relies on the 6Cs of Character, Capacity, Capital, Collateral, Conditions and Control constitute the general evaluation factors used during the loan process and also constitute important reference indexes for banks when determining the credit worthiness of a borrower. The completeness and accuracy of information collected pursuant to the 6C principles provide the avenue for determining value or quality of the output.

Izundu, Nwakoby and Adigwe (2017) explored the influence of commercial loans allocation on the profitability of deposit money banks in Nigeria. The research adopted a panel regression model for five selected commercial banks in Nigeria. The researchers collected data from the banks' reported financial statements and annual statements for the period 2011 to 2015. The data obtained was analysed through the panel ordinary least square regression model. The findings showed that the combined commercial loans allocation variable explained 54% of changes in the banks' profits. The study found that asset allocation was a crucial financial management tool for raising banks' profitability. The study concluded that investments in equities had a positive but inconsequential effect on profitability.

Ameyaw (2017) found out that loan appraisal management can gauge commercial loans and their ability to generate earnings from the bank's total pool of assets and if not well done could lead to decline on asset returns thus asset quality of commercial banks in U.S.A. The thorough loan appraisal of the loan applicant before loan advancing with an aim of assessing the study recommended that there was need for commercial banks to enhance their client loan

appraisal policy so as to influence positively on asset quality. Adherence to provisions of the credit appraisal in many commercial banks remains a challenge which affects the overall financial performance of the concerned commercial banks.

Chernykh and Theodossiou (2018) indicated that the lender should ensure that good decisions are made relative to granting of loans with the objective of maximizing return on assets, and this can be through interest income to be realized with the lending and try to reduce factors that could otherwise compromise the returns. Agola (2014) asserts that, the lender should gather information regarding the prospective borrower that will assist in reaching a sound and safe loan lending decision that will positively work towards influencing financial performance of the commercial banks involved. The study showed that there was a huge gap in implementation of loan appraisal whereby unavailability of business information before signing a contract on loan assets is a critical challenge in credit appraisal if it is not duly considered.

Dallami and Guigale (2019) points out that financial performance depend on the robustness with which credit appraisal systems can intelligently and efficiently manage customer credit lines. Loan appraisal minimizes the risk to borrowers' exposure to bad debts, over-reserving and bankruptcies. The credit assessment gives the banks an insight into the rate of interests to charge the customers that might not push them hard to the corner by considering the customer's financial strength, credit score history and payment patterns. The effectiveness of the credit appraisal system depends on the procedures and methods applied in the credit evaluation. Credit appraisal methods used in banks range from simple subjective or informal techniques to fairly complex approaches such as the use of simulation and computer generated models. The aim of these procedures is to ensure that customers are thoroughly scrutinized before advancing credit thus, to determine the probability of the loan to be advanced earning positive return that

would help influence on financial performance on the banks involved. The study established that the challenge with some of the commercial banks is how to implement the lending policies depending on bank management of different banks that creates a difference on financial performance recorded by the commercial banks.

Musah (2017) established that commercial loans constitutes the largest single income earning asset in the portfolio of most of the commercial banks. This explains why commercial banks spend enormous resources to appraise loan applications before giving approval of loan disbursement to successful loan applicants. This is a practice that impact greatly on the lending behavior of commercial banks as large resources are involved. While investigating the lending behavior of commercial banks in Ghana, the study found that banks must be strategic with their lending policies as regards to loan advancement as lending is undoubtedly the heart of commercial banks. This is because, when loans are appraised correctly, it will influence positively on the bank's financial performance and the opposite is true. The study identified a gap where credit appraisal didn't measure the extent to which it influenced financial performance of the Ghana commercial banks.

Filipaki and Chrostos (2016) in his study analyzed the factors that impede return on assets as well as equity on commercial banks in Pakistan came up with the findings that appraisal of commercial loan offered to the customers was improper and has failed to meet the conditions stipulated in loan asset contract forms. The study indicated that decline on return on assets and/or return on equity as well as income interest were due to poor implementation and enforcement of commercial loan allocation, and this could encourage borrowers to cheat on the purpose of the loan, where payment and recovery could be an uphill task influencing poor financial performance of the commercial banks. The study recommended bridging the financial gap by

practicing establishment of prudent credit allocation and strict adherence to it in order to curb the risk of loan borrowers who could be credit worthiness to enhance good loan books and consequently financial performance.

According to Hayden et al. (2007), loan portfolios diversification in the commercial sector improves banks performance only under moderate risk levels. Banks should evaluate the riskiness of the decisions when increasing the industrial, sector-wise or geographical loan portfolios diversification. Banks with diversified loan portfolios can pool their internally generated funds and allocate them properly according to the analysis based on the financial sector.

Nyorekwa (2014) on the study of effectiveness of lending policies on financial performance of the banking sector in Tanzania observed that before lending out money, a bank has to assess all important factors that have a bearing on the financial soundness of the customer as well as the returns expected to be generated from the loan assets prime focus being the purpose and need of the credit and ability of the borrower to repay the credit advanced as per the terms of the loans. The borrower's character, experience and competence to manage the business and to utilize the funds for the purpose for which they are lent are normally taken into account. The project or activity proposed for financing should be capable of generating sufficient income so that the loan is serviced and repaid to have targeted return on assets invested by the banks. There was a gap with how the loan appraisal could be conducted to establish if the bank's lending could be too little or too much in relation to the need so as to cause problems.

Brealey, Myers, Allen, and Mohanty (2012) pointed out that the activities in the process of commercial and industrial (C&I) loans follow eight steps. These steps include: application, credit analysis, decision, document preparation, closing, recording, servicing and administration

and collection. These activities and the primary tasks for those responsible for these activities must be well documented. Loan application covers the initial interview and screening of a loan request (consultative group to assist the poorest, CGAP, 2000). It involves the loan applicant filling in the various forms provided by the financial institution and submitting them for review. Once the forms have been received in the financial institution, the credit department and credit officers do credit analysis to determine the credit worthiness of the applicant. This involves the application of several methods including the 5Cs mentioned above so as to determine the ability of the applicant to meet his or her obligations as and when they fall due. Once done with the appraisal process, the analyst then prepares a report to the loan officer providing information on whether the loans should be granted or disqualified. They also accompany their report with reasons justifying their final decision.

Jagtiani and Lemieux (2017) explored the advantages/disadvantages of loans made by a large Fintechs lender and similar loans that were originated through traditional banking channels. Specifically, the study used account-level data from the Lending Club and Y- 14M bank stress test data. Findings established that Lending Club's consumer lending activities have penetrated areas that could benefit from additional credit supply, such as areas that lose bank branches and those in highly concentrated banking markets. Findings also revealed a high correlation with interest rate spreads, Lending Club rating grades, and loan performance. However, the rating grades have a decreasing correlation with FICO scores and debt to income ratios, indicating that alternative data is being used and performing well so far. Lending Club borrowers are, on average, more risky than traditional borrowers given the same FICO scores.

2.2.2 Asset Financing on Asset Quality of Commercial Banks in Kenya

Abata (2018) studied asset financing and bank performance for the commercial banks in Nigeria. The study was conducted in the period 2013-2017 and was aimed at testing the hypothesis that there is no relationship between asset financing and bank performance. The study results showed that there was enhanced reduction of the bad debt when the loans were secured with an asset unlike in the case where the loans were not secured. Moreover, the assets were liquidated to obtain the cash for the non-performing loans which resulted in a positive contribution to the loan portfolio for the commercial banks. The study, therefore, acknowledged the significance of asset-based financing in sustaining the value of the loan portfolio.

Cappiello, Kadareja, Sorensen and Protopapa (2017) sought to investigate whether asset financing and credit standards had an effect on output. The study adopted a panel approach for the Euro area. The study presented empirical evidence regarding the existence of a bank lending channel of monetary policy transmission in the Euro area. In contrast to previous findings from the United States, the study revealed that the Euro area changes in respect of asset financing, both in terms of volumes and credit standards.

Rop, Muturi and Bokongo (2015) explored the importance of asset financing on the economic performance of Kenya's commercial banks. The research adopted an exploratory research design. A sample of forty operational commercial banks in Kenya was taken. Secondary data was collected using data collection sheets as the main data collection tool and interview schedule as the primary data. Data collection sheets were used to compile data guided by the objectives of the research. The data collected was analyzed using explanatory and inferential statistics with the help of SPSS package. Inferential statistics were done through ANOVA and multiple regression. The research determined that there existed a substantial relationship between

asset financing and financial performance of commercial banks in Kenya and hence the need of commercial banks to regularly finance asset growth to raise their performance and provide the enabling environment that will accelerate financial growth.

Kariuki (2020) assessed the relationship between asset financing and profitability of motor vehicle financing in Kenya. The study involved all the 43 commercial banks operating in the country. A descriptive survey research design was adopted. According to the findings of the study, it was confirmed that indeed asset financing and liquidity had varying strengths of relationship with the profitability of motor vehicle financing of the surveyed commercial banks. Moreover, it was established that interest rates positively influenced the profitability of the motor vehicle financing realized by the studied banks.

Munyiri (2018) indicated that commercial banks and merchant banking corporations had been significantly been affected by asset financing, and that the subsequent profitability of financial institutions decline. There is therefore more emphasize on the importance of improving existing lending policies as a precondition for successful financial liberalization. Given the importance of lending in commercial banks, the efficiency of a bank's lending policies is expected to significantly influence its financial performance. Lending policy framework is important function of financial institutions in creating value for shareholders and customers. Bank engages in lending policies formulation if it enhances shareholder value, create customer satisfaction, reduce loan loss defaults and increase ban profitability (Nyasaka, 2017). Thus, effective lending policies in banking firms are expected to enhance the value of the firm and shareholder wealth.

Owino (2013) did a study on the effect of the lending policies on the levels of non-performing loans (NPLS) of commercial banks in Kenya. They describe a bank lending policy as

a statement of its philosophy, standards, and guidelines that its employees must observe in granting or refusing a loan request. The internal policies act as a criterion upon which the institution extends credit to loan applicants. It identifies the grounds upon which credit application can be declined. The findings revealed that lending policies are related to the NPLs, and therefore banks need to lend prudently in an effort to lower their risk level.

2.2.3 Vendor Financing on Asset quality of Commercial Banks in Kenya

Gerace and Smark (2018) investigated effect of vendor financing strategies on bank capital structure. Cluster analysis method was utilized to establish if there were cases of any structural variances within the sample. The measure of diversification was through assessing the segments of firms in order to determine the degree of product diversification, sales realized per segmental correlations among segments. The study established that the degree and direction of diversification results into altered financial performances of an institution. The study found out that vendor financing whether related or not related adversely affected debt. The research established that strategy negatively influence on leverage. However, with transaction costs, companies doesn't alter their levels of debts automatically but use target adjustment model.

Maina (2017) investigated vendor financing effect on financial performance of microfinance companies. The study adopted a descriptive survey design using secondary data obtained from financial records of Microfinance institutions and CBK. The research findings indicated that the vendor financing had a negative effect on ROA indicator and ROE indicator were on a growth pace from 2012 to 2016. However the study failed to identify the nature of vendor financing whether horizontal, vertical or corporate since each one of them has its own impact on the financial performance.

Beck and Smits (2018) argued that vendor financing by banks helps in achieving product diversification through provision of different and many products and therefore gave it a competitive advantage against its competitors. Since vendor finance products did not take lengthy processes as the main loan products it provided an avenue for short term financing opportunities and also boosting the achievement of the bank's lending targets. The provision of vendor finance products also enabled the bank to obtain off balance sheet revenues from the transactional charges levied on trade finance products which helps in the composition and distribution of the bank's assets.

Sola et al., (2012) in their study found a positive linear relationship between vendor financing and firm performance derived from the fact that the benefits associated with vendor financing surpass the costs of vendor financing. Furthermore, the effect of receivables on firm profitability differs depending on certain firms' characteristics. According to the financial motive for vendor financing, larger and more creditworthy firms will extend trade credit to their smaller customers' thus increasing firm's sales and generating an implicit rate of return. In this sense, we find unconstrained firms, such as larger and more liquid firms obtain higher returns on receivables as compared to smaller and less liquid firms. The operational motive for vendor financing predicts that firms with variable demand will extend more vendor financing than firms with relatively stable demand.

Cunat (2016) argued that firms with high profit margins, and those that would benefit most from making additional sales via price discrimination, indeed have higher accounts receivable. Firms provide more vendor financing to customers that are in temporary distress. This also enhances their sales, since otherwise the distressed customer would not be able to buy the goods. Firms will however only offer additional vendor financing when they believe there is

a future surplus of having a long-lasting relation with that customer. Kapkiyai and Mugo (2015) carried a study to investigate the impact of vendor financing on the financial performance of small scale businesses in Kenya. This study looked at a sample of 50 audited small and medium enterprise companies using a descriptive research design. The study founded a positive relationship between vendor financing and firm's liquidity, profit margin and return on assets.

Mwangangi (2018) conducted a research to ascertain the correlation existing between vendor financing and the value of banks listed at the Nairobi Securities exchange. Descriptive correlation research design was used and 10 listed banks at Nairobi Securities Exchange were sampled. Regression Analysis was utilized to ascertain the correlation existing between t vendor financing and the value of firms. This research founded an inverse, insignificant correlation between vendor financing and asset quality. The study reviewed that an increase in profits as a result of vendor financing is negatively affected by trade credit risks and the associated costs, therefore having a negative effect to the asset quality.

Olokoyo (2017) study on commercial banks' lending behavior in Nigeria considered the effectiveness of vendor financing and how it influences financial performance of the commercial banks in Nigeria. The study suggests that commercial banks should focus on mobilizing more vendor financing as this will enhance their lending performance through the liabilities they receive where proper appraisal could help identify liabilities to be used in making quick return on investments in order to positively influence on financial performance of these banks. The study showed that there was a gap of lack of vendor financing methods before loans were advanced.

Kisengese (2014) conducted a study on the impact of vendor information sharing on the level of non-performing loans of commercial banks in Kenya. The findings were that all banks

had challenges with non-performing loans; that sharing of customer credit information affected non-performing loans as it helped banks to decline to lend to chronic defaulters; that including all credit history from other credit suppliers would increase credit approval by commercial banks; while a low default rate would result from lending to borrowers based solely on all credit suppliers' positive information, which would increase credit approval by commercial Banks.

Alhassan, Brobbey, and Asamoah (2013) examined the persistence of bank asset quality on bank lending behaviour in Ghana. The study employed a random effects (RE) model to test the relationship between bank lending behaviour proxied as the ratio loans and advances to total asset and bank asset quality (ratio of nonperforming loans to gross loans and advances) while controlling for deposit mobilization, equity, management efficiency, intermediation spread and income diversification. The empirical estimation found that the effect of the deterioration of bank asset quality (high levels of non-performing loans) on bank lending behaviour is persistence and not contemporaneous. Additionally, bank deposit mobilization, intermediation spread and equity were also found to influence bank lending behaviour.

Swamy (2015) investigated the determinants of bank asset quality and profitability using panel data techniques and robust data sets for the period between 1997 and 2009. The study established that while capital adequacy and investment activity significantly affect the profitability of commercial banks, apart from other accepted determinants of profitability, asset size has no significant impact on profitability.

2.2.4 Real Estate Loans on Asset quality of Commercial Banks in Kenya

Andelinovic, Samodol and Pavkovic (2018) conducted a study on real estate loans allocation and profitability of commercial banks. The researchers collected data from the published accounts of the insurance organizations for the years 2008 to 2016. The data collected

was analyzed using cluster analysis and panel data analysis techniques. Cluster analysis was employed for the classification of insurers according to their investment strategies and its results used in the prediction of the changes in asset allocation that financial regulation would bring. The study revealed that loans in real assets had a positive and significant impact on the profitability of Croatian commercial banks.

Bhuyan *et al* (2019) studied the effect of real estate investments as a portfolio diversification in commercial banks. The researchers collected data from the US financial markets for the period 2012 to 2017 to determine the magnitude and benefits of Mortgage Real Estate Investment Trust (MREIT). The study observed that small banks did not significantly benefit from diversification using MREITs. Further, the research revealed that MREITs turn out to be the worst asset class to be used in portfolio diversification. The study recommended that small banks should not use MREITs for diversification.

Auma (2013) investigated the effectiveness of real estate financing on the financial performance of banks in Kenya. The research collected data from all the 10 listed banks trading in Kenya. The study employed the use of multiple regression analysis and descriptive research approaches to determine the nature of the association. The study established that real estate financing had a direct relationship with the overall profitability of the commercial banks and recommended that banks seeking to increase their financial performance should increase investments in real estate.

Odhiambo (2015) investigated the effect of real estate finance on the financial performance of listed commercial banks in Kenya. Data for nine listed commercial banks was collected for the period 2009 – 2013 from the annual reports of the respective banks. Panel regression analysis was employed on the collected data. The results showed that real estate

finance did not have a significant effect on the financial performance of listed commercial banks. Foreign ownership, market structure, cost of bank operations, and the size of the bank significantly influenced bank performance. The study concluded that real estate finance does not influence the financial performance of listed commercial banks. It is recommended that the Central Bank of Kenya (CBK) and stakeholders in the housing sector strategize to improve uptake of affordable mortgage loans in order to improve the overall performance of banks.

Ndururi (2018) using primary data found that banks use mortgage financing to improve their overall performance. The study had assessed the effect of mortgage income on the financial performance of banks. The authors collected primary data by interviewing respondents from 44banks in Kenya. While the author attempted to show how mortgage finance influences bank performance, the use of interviews is not reliable enough to conclude on whether bank performance is influenced by mortgage finance. This was the major limitation of the study hence the need to further test this relationship using panel data.

Krainer and Laderman (2017) investigated how mortgage loan securitization influences relative asset quality in California. The study covered the period between 2000- 2015. The major limitation of this study was its focus on California, which makes the results of the study difficult to generalize for other banks outside USA and especially in Sub-Saharan Africa. The study did not find evidence of a significant effect of mortgage loans on the performance of commercial banks.

Njiiri (2015) assessed the strength of the association between investment in real estate and the performance of Kenya's financial firms. By use of a descriptive study, the researcher targeted the population of 34financial firms in Kenya. The secondary data was obtained from the financial firms audited accounts for the period 2010 to 2014. The study carried multivariate

regression analysis and correlation analysis to evaluate the nature of the association between the variables. The research affirmed the existence of a positive and consequential relationship between real estate investments and the financial performance of financial firms.

Kimeu (2015) evaluated the influence of real estate investment on the economic performance of investment businesses quoted at the NSE. The researcher used a descriptive research design and examined the whole population of the quoted investment businesses. The study extracted data from the published audited accounts of the listed organizations for three years from the year 2012 to 2014. The research adopted multiple linear regression equation and Ordinary Least Squares to determine the strength of real estate investment on the commercial performance of the listed investment firms listed in Kenya. The research established that real estate investment positively impacted on the companies' financial performance.

Lwali (2016) analyzed the relationship between real estate and stock price. According to the findings of the study, private asset financing loan lenders will frequently require you to back up your loan with real assets. The study exemplifies that if an investor is in the know that they can buy a property and turn it quickly at huge profit and cannot get a standard mortgage, it might be one option to go for. The study further indicated that some investors use private asset financing loan to get into the property, do some quick fixes to raise the property value, and then get a new loan (based on the property's new, improved value) from a bank to pay off the private asset financing loan lender. The study findings concurred with conclusions drawn by a study conducted by Mburu and Owiti (2016) that return on stock and savings are inversely related to mortgage uptake in Kenya while interest rate and inflation are significantly related to mortgage uptake in Kenya.

A study conducted by Owiti (2016) examined the determinants of mortgage uptake in Kenya using the capital markets approach. The study revealed that the uptake of private asset financing loans in Nakuru is on the rise. In tandem, the study concluded that return on stock and savings are inversely related to mortgage uptake in Kenya while interest rate and inflation are significantly related to mortgage uptake in Kenya. It was further indicated that the number of private asset financing loan transactions was higher than previous years.

A study conducted by Lwali (2016) analyzed the relationship between real estate and performance. According to the findings of the study, private asset financing loan lenders will frequently require you to back up your loan with real assets. The study exemplifies that if an investor is in the know that they can buy a property and turn it quickly at huge profit and cannot get a standard mortgage, it might be one option to go for. The study further indicated that some investors use private asset financing loan to get into the property, do some quick fixes to raise the property value, and then get a new loan (based on the property's new, improved value) from a bank to pay off the private asset financing loan lender. The study findings concurred with conclusions drawn by a study conducted by Mburu and Owiti (2016) that return on stock and savings are inversely related to mortgage uptake in Kenya while interest rate and inflation are significantly related to mortgage uptake in Kenya.

Jia (2016) examined the measuring methods of real estate speculative bubble. The study found that private asset financing loan lenders in Kenya offer many advantages to their customers when compared with traditional lending institutions. One of the greatest advantages is the speed at which transactions can be executed. This is in cognizant of the fact that time is of great essence when searching for a loan to re-invest in a business, addressing a temporary financial shortfall, or when the intention is to capitalize on a new opportunity.

Another study by Ngugi (2016) evaluated the factors affecting access to real estate. The study was conducted in Nairobi, the capital of Kenya. According to the results of the study, because the lender is mostly focused on collateral private asset financing loan can be closed more quickly than traditional loans. It was further revealed that lenders would rather not take possession of borrowers' property, yet they do not need to spend as much time going through a loan application with a fine-toothed comb verifying borrower's income, reviewing their bank statements, and so on. In the same light, the study revealed that, once a relationship is established between the borrower and the lender, the loan process can move quickly, giving the lender ability to close deals that others are unable to close.

A study conducted by Dolde (2014) looked into the prospects and problems of real estates in India. The study described the asset-to-loan ratio as a financial term that is used by lenders to express the ratio of a loan to the value of an asset purchased. The term is commonly used by banks and building societies to represent the ratio of the first mortgage line as a percentage of the total appraised value of real property. According to the study, the loan amount the private asset financing loan lender is able to lend is determined by the ratio of loan amount divided by the value of property. In addition, the study indicated that, with a private asset financing loan, a borrower can borrow 65% to 75% of the property value. With most private asset financing loan lenders, asset loan ratio is determined through either an appraisal or a broker opinion of value. Moreover, the study indicated that one of the biggest misconceptions about private money lenders is that they charge very high interest rates for making very small loans.

Nwuba, Egwuatu and Salawu (2013) investigated the application of real estate as loan collateral in Nigeria's banking sector. They used questionnaires to obtain responses from the commercial banks. The study concluded that the majority of commercial banks in Nigeria used

real estate as the main collateral instrument for any credit facility advanced. The problem with the use of real estate as collateral for loans is that it requires a lot of documentation and leads to foreclosure problems. They observed that the clients' title to the security pledged, the nature and quality of the title as well as the value of the real estate are important considerations when banks obtain real estate as loan collateral. Therefore, real estate, and especially property values, land titles and records are significant factors in contemporary Nigeria's bank lending and with the greater emphasis on the security of credit, real estate is key in lending.

Onchomba, Njeru and Memba (2018) examined the influence of real estate loans on financial performance of commercial banks in Kenya and a corresponding hypothesis was formulated and tested. A census of 42 fully operational commercial banks in Kenya was done for a period of ten years from 2006-2015 because of increased loan portfolio, using across-sectional survey design. A questionnaire was used to collect primary data from one key person in the finance/credit department of each bank. Secondary data was collected from audited financial statements and other relevant financial sources using data analysis sheet. Both descriptive and inferential statistics were used. Statistical package for social sciences (SPSS) and STATA version 14 were used to analyze data. Research findings established that real estate loans influence the financial performance of commercial banks. The study findings are supported by the Utilization of modern portfolio theory.

The study undertaken by Lieser and Groh, (2011) identified the determinants of commercial real estate investments using special set of panel data series for 47 countries from 2007 to 2009. The study examined how various demographic, socio-economic and institutional characteristics impact commercial real estate investment activities by looking at cross-sectional and time series analysis methods. The final results showed that economic growth, increased

urbanization, and related demographics trigger real estate investments. It was also highlighted that lack of transparency in the legal structures, socio-cultural challenges, administrative barriers, and political instabilities of countries reduce real estate attractiveness.

Rahman (2018) examined the causes and effects of rising prices in Australia housing market. The research findings established that for any given price level lower interest rates implied lower mortgage repayment which allowed borrowers to borrow more for a given repayment to income ratio which causes an increase in housing demand and prices other factors held constant as was the case in the 1980s. Once interest rates increases housing demand eased and prices remained steady, increased moderately or in some cases decreased steadily. A study conducted by Huang and Ma (2015) on the influence of real estate investment and economic growth in China established that the effect of real estate investment on economic growth exceeded that of economic growth on real estate investment. More importantly, the study pointed out that money supply played an integral role in fostering increase in real estate investment.

Chau and Chui (2015) examined the relationship between real estate prices, real estate investment and economic growth in Hong Kong. The findings indicated that during the period between 1973 quarter 1 and 2003 quarter 2 showed insignificant relationships 19between GDP and real estate investment which was attributed to the significant variation of project duration in Hong Kong. Arnason and Persson (2012) conducted a study whose main objective was to establish Swedish real estate's and other Swedish financial assets capability to hedge inflation. The research findings pointed out that no exposures of real estate are a hedge against expected, unexpected and actual inflation. The researchers further assert that real estate in Sweden does not offer a cushion against inflation and instead they suggest that real estate is instead driven by business cycles, accessibility to financing and interest rates as opposed to inflation.

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Ndururi (2013) assessed the impacts of real domain on the commercial bank's performance in Kenya. The study looked to answer the accompanying particular targets; to decide impacts of Real home saving money on financial performance in commercial banks, to set up impacts of Real estate diversification on financial performance of commercial banks. This study embraced elucidating research plan for it depicts an exact profile of situations. The objective populace for this study was 44 commercial banks in Kenya. The study utilized essential information and secondary information. The 28 inferential examinations, which included regression and correlations, was done to build up impacts of Real home financing on financial performance in commercial banks in Kenya. The study found that that commercial banks in Kenya accentuations on Real estate financing to enhance bank performance. Real estate financing is influenced by market and financial factors which includes increased investment and improve financial performance of the firm, improvement of risk management, attraction of more customers.

According to Lipunga (2014), real estate is considered as a diversification of strategy, which expect to minimize their loss risks that they face through the unsecured NPLs. Banks that offer Real estate loans hold diversified portfolios of Real estate loans and therefore spreading risks in a manner that would be impossible if personals were making Real estate loans directly.

Since commercial banks are large in size and number, they gain in economies of scale. They also have more expertise in analyzing credit, setting up loans, and making collections than personals; thus, reducing costs of processing loans and subsequently increasing the availability of Real estate loans. The financing of Real estate requires borrowers to part with some of their savings to finance part of the cost of property by making a down payment. This in turn lowers the correlation of the nonperforming loans to total loan portfolio of the bank (Kimeu, 2018).

According to Kithinji (2010), the approval of loans that are not well examined by the commercial banks has led to the cases of loan defaulting, NPLs, massive credit extension and a directed lending. Policies aimed at minimizing the experienced negative effects focus on the bank mergers, and better practices on banking with frugal lending. Further, the law reviews to align them with the international standards, well-capitalized banks that have high profit expectations, liquid banks with the capacity of meeting their depositor demands and the maintenance of the needed levels of cash by the central bank indicates an availability of limited capital for lending.

Dirnhofer (2012) examined the impact of Real estate Backed Securities on the behavior of the Top 375 US banks amid the financial risks. The study utilized a correlational study outline and only secondary information was utilized. Regression investigation was completed to inspect the relationship between the factors and bank performance. Banks that were exceptionally required in the securitization procedure of Real domain loans had a tendency to perform ineffectively amid the financial turmoil. Moreover, Real bequest Backed Securities did influence bank performance as well as had a positive correlation on the quantity of hindered loans.

Koetter and Poghosyan (2018) studied German real estate financial institutions with a view to find out the relationship between bank distress and real estate markets over the period

2007 to 2016. The study highlighted that the value of collateral grows the real estate property prices of which ultimately leads to reduction in commercial banks profitability level. There moreover exists substantial positive association between banks profitability distress and the price proportion to rent. The study further found that banks profitability distress is further affected by segmentation of the real estate market.

Bello and Adewusi (2019) did a comparative study analyzing the performance of real estate and financial assets as security for mortgage lending in Nigeria with a view to ascertain whether or not the drift towards financial assets is justified. The study sought to assess the performance of real estate and financial assets used as a security for loans and used a sample of 46 transactions from selected banks in Lagos. The study involved landed and financial assets to test the difference between two population means and revealed that though the banks still prefer financial assets, both real estate and financial assets provided cover for the secured loans. Moreover, the study revealed that real estate portfolio yields superior performance in the long run and exhibited higher growth compared to financial assets over the entire loan period. It is in this basis that the study discovered that most of the sampled banks preferred financial assets as security than real estates yet the results of the hypotheses testing indicated that both assets proved adequate but real estate appreciated steadily over the period yielding better financial performance.

2.3 Summary of Research Gap

Ngondo (2018) study on the effect of lending rate on asset quality of commercial banks in Kenya presents a research gap as it focused on capital structure factors such as liquidity capital adequacy while the current study focused on the loan products. Ong'era and Onditi (2016) examined the Loan lending policies on financial performance of commercial banks in Kenya.

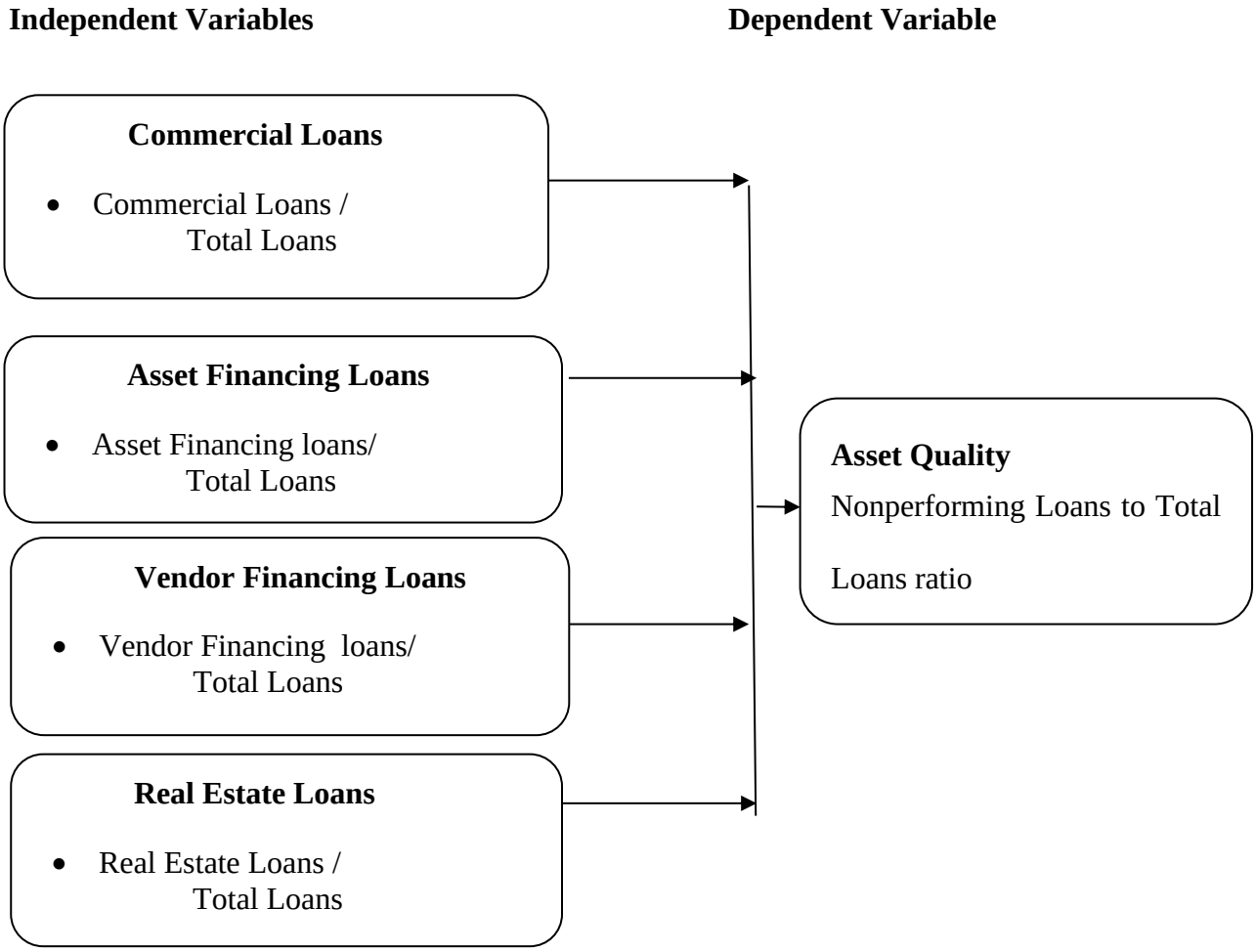
The study also presents a research gap since the current study focused on loan products and asset quality. The study by Njeri (2016) on lending policies by commercial banks in Kenya focused on the operational structures and used a questionnaire while the current study focused on the key lending sectors while measuring using secondary data. This study is imperative because commercial banks in Kenya need to realize the sectors to maximize lending or reduce lending their assets in terms of their loans.

2.4 Conceptual Framework

Jabareen (2009) defines conceptual framework as a network of interlinked hypotheses that together provide a comprehensive understanding of a given phenomenon or phenomena. The framework illustrates how variables are linked and related to each other. The variables, in this case, are the independent (explanatory) along with the dependent variable (response). Notably, an independent variable affects and determines the effect of another variable. The figurative illustration of the dependent and independent variables in this study is shown below in the conceptual framework.

Figure 1

Conceptual Framework



2.5 Operationalization of Variables

The independent and dependent variables are operationalized as shown in Table 1.

Table 1

Operationalization of Variables

	Variable Type	Measurement
Commercial Loans	Independent	Proportion of Commercial Loans to total Loans
Asset Financing Loans	Independent	Proportion of Asset Financing Loans to total Loans
Vendor Financing Loans	Independent	Proportion of Vendor Financing Loans to total Loans
Real Estate Loans	Independent	Proportion of Real Estate Loans to total Loans
Asset quality	Dependent	Ratio of nonperforming loans to total loan

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets to discuss the methodology to be adopted by the researcher attempting to answer the research queries. Specifically, the chapter includes research design, target population, and data collection. Additionally, the chapter presents the data analysis techniques to be adopted and diagnostic tests to be performed.

3.2 Research Design

The study adopted descriptive research design approach. Mugenda and Mugenda (2003) assert that descriptive research design is applicable majorly when the objectives of the study are systematic. The design further aims at exploring the nature of the factors that are involved in a given situation and to ascertain the degree of the association between the variables under study. This research design is preferred for this study because the research sought to study the existing phenomenon of the variables with no intention of manipulating any variable.

3.3 Target Population

Target population is the aggregate or totality of all the subjects, members or objects that conform to a given set of specifications (McBurney &Theresa, 2010). Ngechu (2014) asserts population as a defined set of things, elements, people and items to be researched on. The target population was the 41 active commercial banks in Kenya as at 31st December 2019 (CBK, 2019).

3.4 Sample and Sampling Techniques

Sampling is a process which enables a researcher to gather a few things or people together that represent the characters of the whole population under study (Blumberg, Cooper & Schindler, 2014). According to McMillan and Schumacher (2014), census is a study where all members, objects or things in the population take part in the research. Census technique is suitable when the levels of accuracy and reliability required in the study are very high. Additionally, census is preferred when the members of the population are few. This research used census technique to study the 41 commercial banks in Kenya.

3.5 Data Collection

The research adopted the use of secondary data. The data was extracted from the websites of the respective commercial banks. The main source of data was the published financial statements of the 41 commercial banks where the loan category of each bank was measured against the total loans issued to obtain the loan ratios. Data was collected covering 5 years from 2015 to 2019. The published statements are reliable because all licensed banks are required by law to report their audited statements as well as stating their compliance with performance principles.

3.6 Data Analysis

Data analysis as a process that reviews, converts and displays data to bring forth important information, and suggest conclusions to the researcher for purposes of decision making (Etikan, Musa & Alkassim, 2016). Brooks (2008) asserts that panel data regression is preferred in conditions where the data at hand comprises both time series and cross-sectional components. This is because panel data can address a wider range of issues and more

sophisticated problems than the classic cross-sectional data or the perfect time-series. Gujarat (2004) considers panel data to be desirable because it incorporates more information in the model, that is, it combines variability across time and cross-section units. Subsequently, this research model is focused on panel data approach where the cross-sectional component is reflected by the commercial banks while the time-series component is reflected by the period of study (2015-2019). The research used a panel regression model using STATA software. The study adopted the use of panel regression analytical model as shown;

$$Y_{it} = \beta_O + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$$

Where;

Y= Asset quality

β_0 = Constant term

$\beta_1, \beta_2, \beta_3, \beta_4$ = Beta coefficients of the independent variables

X_1 = Commercial Loans

X_2 = Asset Financing Loans

X_3 = Vendor Financing Loans

X_4 =Real Estate Loans

ε = Error term (Margin of error)

i = Bank. i = 1…5

t = the index of time period. t = 1…5

3.7 Diagnostic Tests

According to Mutandwa, Gala and Grebner (2016), the data collected must first be assessed before the actual estimation of the model. The tests must be conducted to find out whether the data has met the assumptions of regression models since any data contravening the presumptions of the panel regression would yield spurious outcomes. This study used serial correlation tests, heteroscedasticity tests and multicollinearity test to evaluate the data collected before the actual analysis.

3.7.1 Serial Correlation Test

In panel regressions, serial correlation are caused by seasonal effects and non-stationarity of the data inputs. Stationarity was tested by running panel data unit root tests in Stata. If potential endogeneity issues are detected in the relationship between dependent and independent variable, an instrumental variable (IV) regression was run instead of standard panel regressions. The study used Breusch Godfrey test to ascertain whether the data collected has a serial autocorrelation. The null hypothesis of this test is that the data has no serial correlation.

3.7.2 Heteroscedasticity Test

In regression models, the error term difference or variance is assumed to be constant across observations. If this assumption is violated, the random variable is called heteroscedastic. If the control model is heteroscedasticity, then the analysis is not correct. According to Williams (2016), heteroscedasticity gives equal weight to all observations and causes the standard errors to be discriminated and consequently results in an incorrect conclusion when testing the hypothesis. This study used Breusch-Pagan test to check for existence of heteroscedasticity in the data collected. The null hypothesis of this study is that the error variance was homoscedastic.

3.7.3 Multicollinearity Test

Iacobucci et al (2017) define multicollinearity as a test that determines whether two or more variants are directly related in a regression analysis. The intensity of the association between variables is assumed to be between 1 and -1. Where 1 denotes perfect positive association, -1 expresses a perfect negative association while a coefficient nearing zero suggests a weak interrelationship between the variables. Multicollinearity problems arise when the correlation between the explanatory variables is greater than 0.75 (Malhotra, 2007). However, Gujarati (2004) argues that what matters most is the degree of the multicollinearity and not its presence or absence. Consequently, this study adopted Field's (2009) recommendation that variables greater than 0.9 should be avoided and hence the research flaged any combinations that are higher than 0.9 for elimination. Additionally, to test for multicollinearity, Variance inflation factors (VIF) test was used.

3.7.4 Normality Assumptions

According to Kothari (2004), the normality assumption is the possibility that the residuals/ error term was normally distributed over the sampled population. Brooks (2008) adds that normality tests are executed to evaluate whether the data set is well represented by a normal distribution. Linear regression models presume that the error term is normally distributed at a mean of zero and constant variance. Normality Assumptions was done to confirm if the data meets the normality assumption. The study used Jacque Bera test for normality testing where the null hypothesis is that Ho; data is not normal.

3.7.5 Unit Root Tests- Stationary Test

Unit root tests was conducted using the Levi lechun (LLC) test to establish whether the variables are stationary or non-stationary. The purpose of this is to avoid spurious regression results being obtained by using non-stationary series. The null hypothesis of this test is that all panels have unit root. If any of the variables has unit root, the researcher would difference it and run the equations using the differenced variable.

3.7.6 Durbin – Wu –Hausman Test

Also known as the Hausman specification test, the test is carried out to check for consistency of the estimator when compared to an alternative and less efficient estimator. Green (2008) opines that for one to decide between random effects and fixed effects, it is important to run a Hausman specification test whereby the null hypothesis is the random effects. Consequently, the study conducted a Hausman specification test on the data to determine the most appropriate estimation model between the random effects and the fixed effects models. The null hypothesis is that random effect is an efficient estimator of the model.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This section presented the findings from the results and their analyses as to their relevance to the objectives and hypotheses. The findings are presented in tables and narrations as per the specific objectives. In addition, we have presented the descriptive statistics, and the diagnostic tests. The chapter further presented the results of the models that was adopted in order to achieve the study's objective. The data was obtained from the financial statements of the commercial banks. The panel data was arrived from using the 41 banks in the 5 years and analyzed using STATA Software. The data was also checked for completeness and any outliers from excel before importing to STATA where it was set to panel balanced data. As per the operationalization of our study variables, commercial Loans were obtained from proportion of commercial loans to total loans, asset financing loans were obtained proportion of asset financing loans to total loans, vendor financing loans were obtained proportion of vendor financing loans to total loans, real estate loans were obtained proportion of real estate loans to total loans. Lastly, asset quality was obtained from ratio of nonperforming loans to total loan.

4.2 Descriptive Statistics

The descriptive statistics shows the mean, standard deviation, minimum and maximum values of the variables commercial loans, asset financing, vendor financing and real estate loans on commercial banks in Kenya for period 2015-2019. The results are depicted in percentages and are presented in Table 2.

Table 2

Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Obs
Asset Quality	overall	8.6	1.43	5.45	12.36	N=205
	between		0.58	6.30	8.86	n=41
	within		1.30	4.75	10.35	T=5
Commercial Loans	overall	19.807	3.03	15.00	25.00	N=205
	between		1.18	17.40	21.90	n=41
	within		2.80	13.63	25.71	T=5
Asset Financing Loans	overall	29.805	2.83	25.00	34.90	N=205
	between		1.10	27.74	32.00	n=41
	within		2.61	24.09	35.65	T=5
Vendor Financing Loans	overall	14.830	3.06	10.00	21.70	N=205
	between		0.98	13.18	17.36	n=41
	within		2.90	8.89	21.49	T=5
Real Estate Loans	overall	31.90	2.95	25.00	35.00	N=205
	between		1.31	27.80	32.74	n=41
	within		2.65	24.67	36.19	T=5

The results indicated that asset quality depicted by the ratio of nonperforming loans to total loans had a mean of 8.6% and a standard deviation of 1.43. The minimum ratio was 5.45% and the maximum of 12.36%. This indicated that on average, the banks had an asset quality that is below the maximum set rate of 12% by Central bank. Commercial Loans had a mean of 19.8% and a standard deviation of 3.03. The minimum ratio was 15.21% and the maximum of 25.6%. Commercial loans are issued to business and corporation as opposed to an individual. These less liquid assets earn more income but are inherently more risky. Asset Financing Loans had a mean of 29.3% and a standard deviation of 2.83. The minimum ratio was 25.72% and the maximum of 34.2%. Most of the asset financing products are designed to facilitate financing of movable assets.

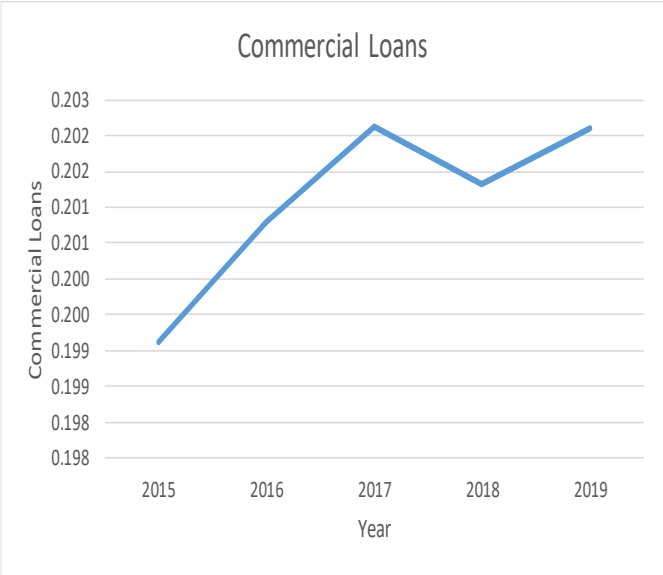
Vendor Financing Loans had a mean of 14.7% and a standard deviation of 3.06. The minimum ratio was 10.94% and the maximum of 21.7%.Vendor financing by banks provides money to be used by the borrower to buy the vendor's products or property. These loans come with a higher rate of interest due to the higher risk of default. Real Estate Loans had a mean of 31.9% and a standard deviation of 2.95. The minimum ratio was 25.56% and the maximum of 44.3%. Real estate financing entails the provision of finance or capital for housing purchase or building. Real estate finance loans are generally structured as long-term loans.

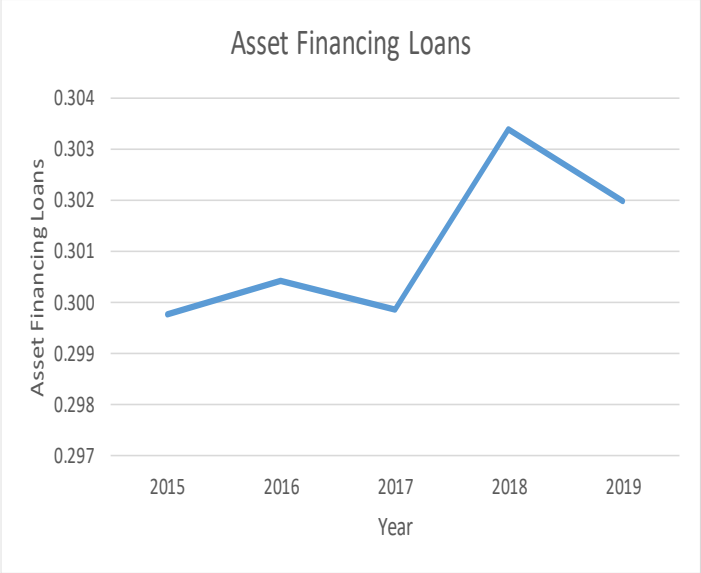
4.3 Trend Analysis

This section presents the analysis of the trends of the variables asset quality, commercial loans, asset financing, vendor financing and real estate loans. The study conducted a trend analysis to establish the movement of the variables overtime for the period 2015-2019.

Figure 2

Trend Analysis





The trend analysis for asset quality depicted a an increase from the year 2015 to 2016 where it stagnated until the year 2018 where a small drop was recorded towards the year 2019. The trend for commercial loans depicted a sharp increase from 2015 to 2017; however, there was a drop in 2018 and then an increase in 2019. The trend for asset financing loans indicated an increase in 2016 but dropped slightly in 2017. A sharp increase was recorded in 2018 and then a

decrease in 2019. The trend for vendor financing loans indicated an increase in 2016, which followed a decrease until 2018. However, there was a slight increase in 2019. Lastly, the trend for real estate loans indicated a general increase from 2015 to 2018. However, the trend stagnated towards the years 2019.

4.4 Diagnostics

The study conducted out different diagnostic tests to make sure that the postulations of Classical Linear Regression Model (CLRM) are not contravened. The pre-estimation tests conducted in this case were the Normality test, Multicollinearity, Test for Fixed or Random Effects, Wooldridge Test for Serial Correlation and Heteroscedasticity Test. The study performed these tests to avoid spurious regression results.

4.4.1 Test for Multicollinearity

Multicollinearity was assessed in this study using the variance inflation factors (VIF). According to Field (2009) VIF values in excess of 10 is an indication of the presence of Multicollinearity. The results are illustrated in Table 3.

Table 3

Multicollinearity

Variable	VIF	1/VIF
Real Estate Loans	3.62	0.276602
Vendor Financing Loans	3.53	0.282953
Asset Financing Loans	3.46	0.289109
Commercial Loans	3.21	0.311074
Mean VIF	3.46	

4.4.2 Test for Autocorrelation

Autocorrelation Test was conducted to determine if the data contravenes the attributes of the Ordinary Least Square (OLS), which culminates to wrong outcomes in hypothesis testing. The study used Wooldridge Test for Serial Correlation to ascertain whether the data collected has a serial autocorrelation.

Table 4

Serial Correlation Tests

Wooldridge test for autocorrelation in panel data
H_0: no first-order autocorrelation
F(1, 4) = 2.64
Prob > F = 0.6102

The results for the Wooldridge test for autocorrelation indicated that the F-test value was 2.64 and the P-value was 0.6102 indicating that the F-test is not statistically significant at 5% level. Hence, the null hypothesis of no autocorrelation was supported and the study concluded that residuals are not auto correlated.

4.4.3 Normality Test

To test for normality, the study applied the Jaque Bera test method. The Jarque–Bera test is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. Normality was checked on the residuals of a model, because those assumptions apply to the unexplained variance of a model. The hypothesis was that the data was normally distributed. The results are as shown in Table 5.

Table 5

Normality Test

. jb residuals		
Jarque-Bera	normality test: 24.98 Chi(2)	0.063
Jarque-Bera	test for Ho: normality:	

The results in Table 5 indicated that the Chi-square value was 24.98 and the P-value was 0.063 that was larger than the 0.05. We thus concluded that the data was normal since the p-value was larger than the critical 0.05.

4.4.4 Heteroscedasticity Test

In regression models, the error term difference or variance is assumed to be constant across observations. If this assumption is violated, the random variable is called heteroscedastic. If the control model is heteroscedasticity, then the analysis is not correct. This study used Breusch-Pagan test to check for existence of heteroscedasticity in the data collected with the hypothesis that the data was homoscedastic.

Table 6

Heteroscedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: fitted values of Asset Quality
chi2(1) = 3.32
Prob > chi2 = 0.5744

The hypothesis was therefore not rejected at a critical p value of 0.05 since the reported value for the chi2 (1) was 3.32 with a p-value of 0.5744 which was larger than the critical 0.05. Thus, the data did not suffer from statistically significant heteroscedasticity.

4.4.5 Hausman Specifications Test

The Hausman specification test, was carried out to check for consistency of the estimator when compared to an alternative and less efficient estimator. Green (2008) opines that for one to decide between random effects and fixed effects, it was important to run a Hausman specification test whereby the null hypothesis is the random effects. Durbin – Wu –Hausman Test, was conducted to test on the data to determine the most appropriate estimation model between the random effects and the fixed effects models. The hypothesis was that random effect is preferred to fixed effect and the results are as shown in Table 7.

Table 7

Hausman Test

	(b) fixed	**(B) random**	**(b-B) Difference**	**sqrt(diag(V_b-V_B)) S.E.**
Commercial Loans	0.071	0.062	0.009	0.069
Asset Financing	0.144	0.176	-0.032	0.056
Vendor Financing	0.076	0.081	-0.005	0.069
Real Estate Loans	0.151	0.120	0.030	0.057
chi2(4)	3.260			
Prob>chi2	0.082			

The Hausman test revealed a chi-square of 3.260 with a p-value of 0.082 indicating that at 5 percent level, the chi-square value obtained is statistically insignificant. Thus, the researcher did not reject the hypothesis that random effects model is preferred to fixed effect model and random model was adopted.

4.5 Correlation Analysis

The study conducted correlation analysis for the various variables that are commercial loans, asset financing, vendor financing and real estate loans on asset quality of commercial banks in Kenya in order to examine the nature of the statistical relationships between each pair of variables. Table 8 shows the correlation matrix of all the variables included in the study.

Table 8

Correlation Matrix

	Asset Quality	Commercial Loans	Asset Financing	Vendor Financing	Real Estate Loans
Asset Quality	1.000				
Commercial Loans	0.731	1.000			
	0.000				
Asset Financing	0.775	0.642	1.000		
	0.000	0.000			
Vendor Financing	0.746	0.683	0.679	1.000	
	0.000	0.000	0.000		
Real Estate Loans	0.783	0.669	0.699	0.673	1.000
	0.000	0.000	0.000	0.000	

The results in Table 8 show that Commercial Loans (r= 0.731, p=0.00) had a positive and significant relationship on asset quality of commercial banks in Kenya. Asset Financing (r=0.775, p=0.000) had a positive and a significance relationship on asset quality of commercial banks in Kenya. Vendor Financing (r= 0.746, p= 0.000) had a positive and significance relationship on asset quality of commercial banks in Kenya. Lastly, Real Estate Loans (r=0.783, p=0.000) had a positive and a significance relationship on asset quality of commercial banks in Kenya. This positive coefficient implied that an increase in commercial loans, asset financing,

vendor financing and real estate loans leads to an increase on asset quality of commercial banks in Kenya.

4.6 Regression Analysis

Regression analysis was conducted to establish the statistical significance relationship on the effect of loan products on asset quality of commercial banks in Kenya. The variables were commercial loans, asset financing, vendor financing and real estate loans on asset quality of commercial banks. The regression includes techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent and one or more independent variables. The results are presented in Table 9.

Table 9

Regression Analysis

Asset Quality	**Coef.**	**Std. Err.**	**z**	**P>|z|**	**[95% Conf.**	**Interval]**
Commercial Loans	0.071	0.033	2.170	0.030	0.007	0.135
Asset Financing Loans	0.144	0.036	3.960	0.000	0.073	0.215
Vendor Financing Loans	0.076	0.034	2.250	0.025	0.010	0.143
Real Estate Loans	0.151	0.036	4.230	0.000	0.081	0.221
_cons	-3.794	0.724	-5.240	0.000	-5.213	-2.376

Wald chi2(4) 463.86
Prob>chi2 0.000
Rsquared Within =0.7018
Rsquared Between = 0.6848
Rsquared Overall =0.698
sigma_e=.8012

The regression equation was fitted as shown below;

$Y_{it} = -3.794 + 0.071X_{1it} + 0.144X_{2it} + 0.076X_{3it} + 0.151X_{4it}$

X_{1it} = Commercial Loans of Real Estate Loans *i* at time *t*

X_{2it} = Asset Financing Loans of Real Estate Loans *i* at time *t*

X_{3it} = Vendor Financing Loans of Real Estate Loans *i* at time *t*

X_{4it} = Real Estate Loans of Real Estate Loans *i* at time *t*

The overall R squared of 0.698 implied that the four variables namely commercial loans, asset financing, vendor financing and real estate loans explained 69.8% on the variations on asset quality of commercial banks. The overall model was significant as indicated by the Prob>chi2 of 0.000 with a Wald chi2 (4) of 463.86. In addition, the constant of 3.794 showed that when commercial loans, asset financing, vendor financing and real estate loans are held constant, asset quality of commercial banks will remain at 3.794 units. The results further portrayed a positive and significant relationship between Commercial Loans and the asset quality of commercial banks (β= 0.071, p=0.030). There was a positive and significant relationship between Asset Financing Loans and asset quality of commercial banks (β= 0.144, p= 0.000). Vendor Financing Loans had a positive and significant relationship with asset quality of commercial banks (β= 0.076, p= 0.025). Lastly, Real Estate Loans revealed a positive and significant relationship with asset quality of commercial banks (β= 0.151, p= 0.000).

4.7 Discussion of Findings

The objective of this study was to assess the effect of loan products on asset quality of commercial banks in Kenya. The independent variables were commercial loans, asset financing, vendor financing and real estate loans on asset quality of commercial banks. The pre-estimation

tests conducted on Normality test, Multicollinearity, Test for Fixed or Random Effects, Test for Serial Correlation and Heteroscedasticity indicated that the underlying assumptions were fit for regression analysis.

The first objective of the study was to determine the effect of commercial loans on asset quality of commercial banks in Kenya. Correlation results showed that commercial loans (r= 0.731, p=0.00) had a positive and significant relationship on asset quality of commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between commercial loans and asset quality of commercial banks in Kenya (β= 0.071, p=0.030). This implies that a unitary increase in commercial loans led to an increase in the performance of the asset quality of commercial banks in Kenya by 0.071 units holding other factors constant. Since the P-value of 0.03<0.05, the null hypothesis was rejected that Commercial loans have no significant effect on asset quality of commercial banks in Kenya. The findings agree with Koch and Macdonald (2018) whose results depicted a positive relationship between commercial loans and asset quality of commercial banks. The findings are also in line with Izundu, Nwakoby and Adigwe (2017) who explored the influence of commercial loans allocation on the profitability of deposit money banks in Nigeria and established that asset allocation was a crucial financial management tool for raising banks' asset quality. The findings by Musah (2017) established that commercial loans constitutes the largest single income earning asset in the portfolio of most of the commercial banks. This explains why commercial banks spend enormous resources to appraise loan applications before giving approval of loan disbursement to successful loan applicants.

The second objective of the study was to determine the effect of Asset Financing Loans on asset quality of commercial banks in Kenya. Correlation results showed that Asset Financing

Loans (r= 0.775, p=0.00) had a positive and significant relationship on asset quality of commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between Asset Financing Loans and asset quality of commercial banks in Kenya (β= 0.076, p=0.030). This implies that a unitary increase in Asset Financing Loans led to an increase in asset quality of commercial banks in Kenya by 0.076 units holding other factors constant. Since the P-value of 0.00<0.05, the null hypothesis was rejected that Asset Financing Loans have no significant effect on asset quality of commercial banks in Kenya. The results also agree with Kariuki (2020) who assessed the relationship between asset financing and profitability of motor vehicle financing in Kenya and the findings confirmed that asset financing had a positive and significant relationship with asset quality for commercial banks. The findings are consistent with Abata (2018) who studied asset financing and bank performance for the commercial banks in Nigeria and the study results showed that there was enhanced reduction of the bad debt when the loans were secured with an asset unlike in the case where the loans were not secured. Moreover, the assets were liquidated to obtain the cash for the non-performing loans which resulted in a positive contribution to the loan portfolio for the commercial banks. The findings by Rop, Muturi and Bokongo (2015) who explored the importance of asset financing on the economic performance of Kenya's commercial banks established that there existed a significant relationship between asset financing and asset quality of commercial banks in Kenya. Thus the need of commercial banks to regularly finance asset growth to raise their performance and provide the enabling environment that will accelerate financial growth.

The third objective of the study was to determine the effect of Vendor Financing Loans on asset quality of commercial banks in Kenya. Correlation results showed that Vendor Financing Loans (r= 0.746, p=0.00) had a positive and significant relationship on asset quality of

commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between Vendor Financing Loans and asset quality of commercial banks in Kenya (β= 0.076, p=0.025). This implies that a unitary increase in Vendor Financing Loans led to an increase in asset quality of commercial banks in Kenya by 0.076 units holding other factors constant. Since the P-value of 0.025<0.05, the null hypothesis was rejected that Vendor Financing Loans have no significant effect on asset quality of commercial banks in Kenya. The findings are consistent with Gerace and Smark (2018) investigated effect of vendor financing strategies on bank asset quality and established a positive relationship. The findings also agree with Maina (2017) who investigated vendor financing effect on performance of microfinance companies and established that vendor financing had a positive effect on the quality of loans in microfinance institutions. The results are also in line with Sola et al., (2012) who in their study found a positive linear relationship between vendor financing and performance derived from the fact that the benefits associated with vendor financing surpass the costs of vendor financing. Findings from Kapkiyai and Mugo (2015) established a positive relationship between vendor financing and banks return on assets. The findings further are in line with Mwangangi (2018) who found that a there was a high association between vendor financing and the value of banks asset listed at the Nairobi Securities Exchange. The findings by Beck and Smits (2018) found that vendor financing by banks helps in achieving product diversification through provision of different and many products and therefore gave it a competitive advantage against its competitors. The provision of vendor finance products also enabled the bank to obtain off balance sheet revenues from the transactional charges levied on trade finance products which helps in the composition and distribution of the bank's assets.

The fourth objective of the study was to determine the effect of Real Estate Loans on asset quality of commercial banks in Kenya. Correlation results showed that Real Estate Loans ($r= 0.783$, $p=0.00$) had a positive and significant relationship on asset quality of commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between Real Estate Loans and asset quality of commercial banks in Kenya ($\beta= 0.151$, $p=0.025$). This implies that a unitary increase in Real Estate Loans led to an increase in asset quality of commercial banks in Kenya by 0.151 units holding other factors constant. Since the P-value of $0.000<0.05$, the null hypothesis was rejected that Real Estate Loans have no significant effect on asset quality of commercial banks in Kenya. The findings are in line with Andelinovic, Samodol and Pavkovic (2018) who conducted a study on real estate loans allocation and profitability of commercial banks and established that loans in real assets had a positive and significant impact on the profitability of Croatian commercial banks. The findings are also consistent with Auma (2013) who investigated the effectiveness of real estate financing on the asset quality of banks in Kenya and established that real estate financing had a direct relationship with the overall profitability of the commercial banks and recommended that banks seeking to increase their asset quality should increase investments in real estate.Njiiri (2015) assessed the strength of the association between investment in real estate and the performance of Kenya's financial firms and affirmed the existence of a positive and consequential relationship between real estate investments and the asset quality of financial firms.Kimeu (2015) study also established that real estate investment positively impacted on the bank asset quality.However, Krainer and Laderman (2017) study did not find evidence of a significant effect of mortgage loans on the performance of commercial banks.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study findings, its conclusions and recommendations, presented in consideration to the study objectives used to analyze the determinants the effect of loan products on asset quality of commercial banks in Kenya.

5.2 Summary of Findings

5.2.1 Commercial Loans on Asset quality of Commercial Banks

The first objective of the study was to determine the effect of commercial loans on asset quality of commercial banks in Kenya. Correlation results showed that commercial had a positive and significant relationship on asset quality of commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between commercial loans and asset quality of commercial banks in Kenya. This implies that a unitary increase in commercial loans led to an increase in thee asset quality of commercial banks in Kenya by 0.071 units holding other factors constant. Since the P-value of 0.03<0.05, the null hypothesis was rejected that Commercial loans have no significant effect on asset quality of commercial banks in Kenya. Therefore, before banks issue commercial loans they should follow the banking procedures to ensure that the organization receiving the loans are credit worth by insisting on a high valued security.

5.2.2 Asset Financing Loans on Asset quality of Commercial Banks

The second objective of the study was to determine the effect of Asset Financing Loans on asset quality of commercial banks in Kenya. Correlation results showed that Asset Financing

Loans had a positive and significant relationship on asset quality of commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between Asset Financing Loans and asset quality of commercial banks in Kenya. This implies that a unitary increase in Asset Financing Loans led to an increase in asset quality of commercial banks in Kenya by 0.076 units holding other factors constant. Since the P-value of 0.00<0.05, the null hypothesis was rejected that Asset Financing Loans have no significant effect on asset quality of commercial banks in Kenya.

5.2.3 Vendor Financing Loans on Asset quality of Commercial Banks

The third objective of the study was to determine the effect of Vendor Financing Loans on asset quality of commercial banks in Kenya. Correlation results showed that Vendor Financing Loans had a positive and significant relationship on asset quality of commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between Vendor Financing Loans and asset quality of commercial banks in Kenya. This implies that a unitary increase in Vendor Financing Loans led to an increase in asset quality of commercial banks in Kenya by 0.076 units holding other factors constant. Since the P-value of 0.025<0.05, the null hypothesis was rejected that Vendor Financing Loans have no significant effect on asset quality of commercial banks in Kenya.

5.2.4 Real Estate Loans on Asset quality of Commercial Banks

The fourth objective of the study was to determine the effect of Real Estate Loans on asset quality of commercial banks in Kenya. Correlation results showed that Real Estate Loans (r= 0.783, p=0.00) had a positive and significant relationship on asset quality of commercial banks in Kenya. Further, regression analysis portrayed a positive and significant relationship between Real Estate Loans and asset quality of commercial banks in Kenya. This implies that a

unitary increase in Real Estate Loans led to an increase in asset quality of commercial banks in Kenya by 0.151 units holding other factors constant. Since the P-value of 0.000<0.05, the null hypothesis was rejected that Real Estate Loans have no significant effect on asset quality of commercial banks in Kenya.

5.3 Conclusion

The study concluded that commercial loans, asset financing, vendor financing and real estate loans affected asset quality of commercial banks in a positive and significant way. Each of the specific conclusions is as discussed;

The study concluded that commercial loans were found to be positively and significantly related to asset quality of commercial banks in Kenya. The positive coefficient for commercial loans implied that increase in the commercial loans improved on the asset quality of the commercial banks. Asset financing was found to be positively and significantly related to asset quality of commercial banks in Kenya. Therefore, this implied that asset financing had a positive effect on the bank balance sheet where they increased the asset quality of the commercial banks. The study concluded vendor Financing Loans were found to be positively and significantly related to asset quality of commercial banks in Kenya. The positive coefficient for Vendor Financing Loans implied that increase in the commercial loans improved on the asset quality of the commercial banks. Lastly, the study concluded real estate finance loans besides being generally structured as long-term loans were found to be positively and significantly related to asset quality of commercial banks in Kenya. This means that in the long term, they increased the assets significantly in the bank balance sheet.

5.4 Recommendation

Based on the findings of this study, the following recommendations arise;

The study recommends that the commercial banks need to limit their loan portfolio diversification into appropriate level to enhance their asset quality. Besides the key loan products; commercial loans, asset financing, vendor financing and real estate loans having a positive effect on asset quality of commercial banks, the study recommends that credit appraisal should be critically evaluated as a remedy to avoid non-performing loans from the different loan products. Therefore, the management of a commercial bank should need to use appropriate strategies to reduce loan portfolio positions while retaining their client base.

The study recommends that the commercial bank should focus on reducing the level of non-performing loans because when diversifying the loan portfolio where there is a high credit risk. Therefore, commercial bank should regularly conduct financial statement analysis attempts to evaluate, from a financial perspective, the banks performance. The study recommends that the commercial bank to be sure that the collateral undertaken under commercial loans, asset financing, vendor financing and real estate loans is protected and will not deteriorate, this costs the bank money. The commercial banks should be sure that they have legal title to the collateral and are entitled to sell it in case of default.

Lastly, the study recommends banks should develop comprehensive strategic plans detailing on how they will deal with NPLs in their occurrence in a systematic way. The strategy must be adapted for each loan product and be realistic and achievable by creating sustainable long-term work-out solutions in a capital-efficient and cost-effective manner.

5.5 Limitation of the Study

The study was limited to commercial loans, asset financing, vendor financing and real estate financing as the loan products. The study was limited to the 41 licensed and active commercial banks in Kenya. The study was also limited to a 5 year period from 2015 to 2019. Time was limited and also money was not enough.

5.6 Suggestions for Further Research

The findings of this study can be improved if the study is expanded to cover a longer time. A future research can be carried out on the same topic, but using data for an extended period of time. This is with the assumption that the data for a longer time would provide results that are better than those provided by the data used in this study. The possible higher objectivity that arises based on the sample period may be settled covering a longer period. In addition, given that Kenya is a key player in the East African community, the study can be expanded to cover other East African Banks within the East African community in order to provide result that was useful in that context. A study can be done to cover all the banks in East Africa. Such a study would be used as a referential manuscript when coming up with strategic plans and credit appraisal mechanism in issuance of loan products in banks.

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APPENDICES

Appendix I: List of Commercial Banks in Kenya

No	Bank
1	KCB Bank Kenya Ltd
2	Equity Bank Kenya Ltd
3	The Co-operative Bank of Kenya Ltd
4	Standard Chartered Bank Kenya Ltd
5	I & M Bank Ltd
6	Absa Bank Kenya Plc
7	NCBA Bank Kenya PLC
8	Diamond Trust Bank Kenya Limited
9	Stanbic Bank Kenya Ltd
10	Citibank N.A. Kenya
11	Bank of Baroda (Kenya) Limited
12	Bank of India
13	Prime Bank Ltd
14	Family Bank Ltd.
15	SBM Bank Kenya Ltd
16	Development Bank of Kenya Ltd
17	Victoria Commercial Bank Limited
18	Guaranty Trust Bank Ltd
19	Habib Bank AG Zurich
20	Credit Bank Ltd
21	Guardian Bank Limited
22	Ecobank Kenya Ltd
23	Gulf African Bank Ltd
24	First Community Bank Ltd
25	African Banking Corporation Ltd
26	UBA Kenya Bank Ltd
27	Paramount Bank Ltd

28	Sidian Bank Ltd
29	M-Oriental Commercial Bank Ltd
30	Middle East Bank (K) Ltd
31	HFC Ltd
32	Transnational Bank Limited
33	Mayfair Bank Ltd
34	Spire Bank Limited
35	Consolidated Bank of Kenya Limited
36	DIB Bank Kenya Ltd
37	National Bank of Kenya Ltd
38	Jamii Bora Bank Ltd
39	Bank of Africa (K) Ltd
40	UBA Kenya Bank Limited
41	Victoria Bank Limited

(Central Bank of Kenya, 2019)

Appendix II: Secondary Data Collection Template

Year	Bank	Commercial Loans	Asset Financing Loans	Vendor Financing Loans	Real Estate Loans	Loan default ratio (%)
2019	A					
2018	A					
2017	A					
2016	A					
2015	A					
2019	B					
2018	B					
2017	B					
2016	B					
2015	B					