Influence of Interest Rates Spread on Loan Portfolio Performance Amongst Listed Commercial Banks in Kenya.

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Abstract: The main objective of the study will be to establish the influence of interest rate spread on loan portfolio performance amongst listed commercial banks in Kenya. The major components of interest rate spread to be examined in this study are; liquidity, inflation, bank market niche, bank conditionality and operating costs. The theories will include: the expectations theory, the segmented market theory, the liquidity premium theory and portfolio management theory. This study will use descriptive research design. The target population of this study will be the top level managers; middle level managers and operational managers of the 11 listed commercial banks licensed by the Central Bank of Kenya and were in operation as on 31st December 2015. The total population will be 176 respondents selected purposely from the list of 11 commercial banks grouped according to management level. Cronbach’s Alpha reliability test and factor analysis will be carried out in order to test the goodness of the research instrument. Multiple linear regressions will be used to analyze data and test the hypotheses using statistical package for the social sciences (SPSS) version 24. All the hypotheses will be tested at 95 percent confidence level (α=0.05).

Key Words: Interest Rates Spread, Liquidity, Inflation, Market Niche, Bank Conditionality, Operating Costs and Loan Portfolio Performance.

1. Introduction

Over the past few years, interest rate spread of commercial banking system has caught researchers’ attention throughout the world. Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007). For a bank, interest rate spread (IRS) can be defined as the difference between the average yield a financial institution receives from loans and other interest-accruing activities and the average rate it pays on deposits and borrowings. IRS is an important indicator of efficiency level of a bank or banking system. It reflects profit maximizing ability of the financial intermediaries (Bandaranayake, 2014).

Lending is the principal business activity for most commercial banks. Business Dictionary (2014) defines a Loan portfolio as the total of all loans held by a bank or finance company on any given day. Loan portfolios are the major asset of banks, thrifts, and other lending institutions. The value of a loan portfolio depends not only on the interest rates earned on the loans, but also on the quality or like hood that interest and principal will be paid. The loan portfolio is typically the largest asset and the predominant source of revenue by commercial banks in Kenya. As such, it is one of the greatest sources of risk to a bank’s safety and soundness. The level of interest risk attributed to the bank’s lending activities depends on the composition of its loan portfolio and the degree to which the terms of its loans for instance, maturity, rate structure, and embedded options that expose the bank’s revenue stream to changes in rates (Kaggwa, 2013). Therefore, loan portfolio performance refers to the rate of profitability or rate of return of an investment in various loan products.

2. Statement of the problem

A key variable in the financial system is the spread between lending and deposit interest rates. When it is too large, it is generally regarded as a considerable impediment to the expansion and development of financial intermediation, as it discourages potential savers with low returns on deposits and limits financing for potential borrowers, thus reducing feasible investment opportunities and therefore the growth potential of the economy. These high spreads have frequently been attributed to such factors as high operating costs, high inflation, liquidity risk, market concentration and bank policy. Most of the studies done on this area have been looking at the relationship between these determinants of interest
rate spread on financial performance. There is need therefore to find out the effect of these variables on loan portfolio performance since loan portfolio management is very key to the success of any lending institution.

3. General Objective

The general objective of the study will be to analyze the influence of interest rate spread on loan Portfolio Performance amongst listed commercial banks in Kenya.

4. Specific Objectives

1) To determine the influence of bank liquidity risk on loan portfolio performance amongst listed commercial banks in Kenya.

2) To determine the influence of inflation on loan portfolio performance amongst listed commercial banks in Kenya.

3) To determine the influence of the bank market niche on loan portfolio performance amongst listed commercial banks in Kenya.

4) To determine the extent to which bank conditionality influence loan portfolio performance amongst listed commercial banks in Kenya.

5) To determine the influence of operational costs on loan portfolio performance amongst listed commercial banks in Kenya.

5. Research Hypotheses

The following null research hypotheses will be tested:

1) $H_{01}$: There is no significant influence of bank liquidity on loan portfolio performance amongst listed commercial banks in Kenya.

2) $H_{02}$: There is no significant influence of inflation on loan portfolio performance amongst listed commercial banks in Kenya.

3) $H_{03}$: There is no significant influence of bank market niche on loan portfolio performance amongst listed commercial banks in Kenya.

4) $H_{04}$: There is no significant influence of the bank conditionality on loan portfolio performance amongst listed commercial banks in Kenya.

5) $H_{05}$: There is no significant influence of operating costs on loan portfolio performance amongst listed commercial banks in Kenya.

6. Literature Review

6.1 Theoretical Framework

This section will review theories that are relevant to the area of study. The relevant theories to be reviewed are; expectation theory, segmented market theory, liquidity premium theory and portfolio management theory.

6.2 Expectations Theory

Lutz (1940) developed expectations theory as confirmed by Irungu (2013) who stated that the theory is built on the premise of expectations that people will have in regard to future conditions. If investors expect future interest rates to be high, they will prefer to hold long term securities and if the vice versa is true, they will prefer short term securities (Russel, 1992). Other expectations that will influence securities demand will include expectations on political conditions, expected inflation levels, among others. Investors expecting higher short-term interest rates are more likely to buy bonds maturing in the short term. If they were to invest money into a long term debt they might not be able to make as much interest according to Auerbach (1988). The theory is based on the assumptions that investors have perfect knowledge about the future short term interest rates, there are no taxes or other costs involved in holding or trading and investors are assumed to be profit maximizers. The theory is relevant in that if people expect inflation to increase in future, they would tend to fail to deposit money in commercial banks and hence expensive loans as a result of low supply of funds.

6.3 The Segmented Market Theory

The theory was first developed by Culbertson (1957) as observed by Maina (2015). This theory assumes that markets for different-maturity bonds are completely segmented. The interest rate for each bond with a different maturity is then determined by the supply of and demand for the bond with no effects from the expected returns on other bonds with other maturities. In other words, longer bonds that have associated with the inflation and interest rate risks are completely different assets than the shorter bonds. Thus, the bonds of different maturities are not substitutes at all, so the expected returns from a bond of one maturity has no effect on the demand for a bond of another maturity. Because bonds of shorter holding periods have lower inflation and interest rate risks, segmented market theory predicts that yield on longer bonds will generally be higher, which explains why the yield curve is usually upward sloping. However, since markets for different-
maturity bonds are completely segmented, there is no reason why the short and long yields should move together. For the same reason, the segmented market theory also cannot explain why the short-term yields should be more volatile than the longer-term yields.

6.4 The Liquidity Premium Theory

Mwangi (2014) observed that the concept was first developed by Keynes (1936) where he stated that the demand for money is expressed as a function of level of income and interest rate. According to Keynes (1936) money is demanded mainly for the following motives: transaction, precautionary and speculative motive. He further stated that investors will always prefer short term securities to long term securities. To encourage them hold long term bonds, long term securities should yield higher interests than short term bonds. Therefore, the yield curve will always be upward sloping. It is based on the observation that, all else being equal, people prefer to hold on to cash (liquidity) and that they will demand a premium for investing in non liquid assets such as bonds, stocks, and real estate. The theory suggests that the premium demanded for parting with cash increases as the term for getting the cash back increases.

Auerbach (1988) postulates that the rate in the increase of this premium, however, slows down with the increase in the period for getting the cash back. In financial terms, this theory is expressed as “forward rates should exceed the future spot rates”. According to Reilly and Norton (2006), the theory of liquidity preference holds that long term securities should provide higher returns than short term obligations because investors are willing to sacrifice some yields to invest in short maturity obligations to avoid the higher price volatility of long maturity bonds. According to Howells and Bain (2007), an increased preference for liquidity in the model is equivalent to increased demand for money and therefore demand for money increases wherever more people think interest rates are likely to rise than believes they are likely to fall.

6.5 Portfolio Management Theory

The basic portfolio model was developed by Harry Markowitz in the 1950s and early 1960s. Markowitz is considered the father of modern portfolio theory since he originated the portfolio model that underlies modern portfolio theory. He derived the expected rate of return for a portfolio of assets and the expected risk measure. Markowitz established that under reasonable assumptions, the variance (or standard deviation) of the expected rate of return was a meaningful measure of portfolio risk. From his model, the expected rate of return of a portfolio is the weighted average of the expected return for the individual assets in the portfolio. The traditional portfolio theory, Modern Portfolio Theory (MPT), introduced by Harry M. Markowitz, is a theory which attempts to maximize investors’ expected return for a given amount of risk, or minimize investors’ risk for a given level of expected return. MPT therefore includes two factors when choosing assets to form a portfolio, the mean and the variance and goes therefore also by the name of mean-variance theory.

6.6 Conceptual Framework

A conceptual framework is defined as a hypothesized model identifying the model under study and the relationship between the dependent and independent variables (Kothari, 2014). Dwi (2011) emphasized out that the conceptualization of variables in academic study is important because a conceptual framework forms the basis for testing hypothesis and coming up with generalizations in the findings of the study. Zikmund (2010) suggested that the goal of a conceptual framework is to categorize and describe concepts relevant to the study and map relationships among them. In this study, liquidity, inflation, bank market niche, bank conditionality and bank operating costs as the determinants of interest rate spread are classified as the independent variables, while loan portfolio performance of listed commercial banks in Kenya is classified as the dependent variable. The conceptual framework is diagrammatically represented as shown below:
7. Review of Literature Variables

This section examines the influence of interest rate spread on the loan performance of corporate clients of commercial banks. The attributes of interest rate spread analyzed include liquidity, Inflation, Market niche, Bank Policy and operation costs.

7.1 Liquidity and Loan Portfolio Performance

The main principal activity of a commercial bank is to grant loans to borrowers. Loans are among the highest yielding assets a bank can add to its balance sheet, and they provide the largest portion of operating revenue. In this respect, the banks are faced with liquidity risk since loans are advanced from funds deposited by customers. However, the higher the volume of loans extended the higher the interest income and hence the profit potentials for the commercial banks. Devinaga (2010) noted that banks with a high volume of loans will also be faced with higher liquidity risk. Thus, the commercial banks need to strike a balance between liquidity and profitability. He further emphasized that a high volume of loans alone is not a guarantee for high interest income. If the borrowers default then the interest income will not be earned and this will certainly affect the profitability of the bank adversely.

Liquidity position of commercial banks is normally monitored and measured by liquidity ratio (Rychtarik, 2009). The term liquidity is defined as the ability of a company to meet its financial obligations as they come due. It is computed as the ratio of bank’s liquid assets to total assets (LQDR). Liquid assets refer to cash and deposit balances in other banks (including reserve requirements at the CBK). The degree to which banks are exposed to liquidity risk varies across banks. A bank with higher liquidity faces lower liquidity risk hence is likely to be associated with lower spreads due to a lower liquidity premium charged on loans(Were & Wambua, 2013). Banks with high risk tend to borrow emergency funds at high costs and thus charge liquidity premium leading to higher spreads (Ahokpossi 2013).

7.2 Inflation and Loan Portfolio Performance

Kenya as a region is facing very high inflation originating primarily from high food and fuel prices but also from demand pressures. The commercial banks in Kenya are susceptible to many forms of risk which have triggered occasional systemic crises (KBA, 2014). These include liquidity risk (where many depositors may request withdrawals in excess of available funds), credit risk (the chance that those who owe money to the bank will not repay it), and interest rate risk (the possibility that the bank will become unprofitable, if rising interest rates force it to pay relatively more on its deposits than it receives on its loans), (Ndung’u, 2014). Given these challenges, the government has agreed to coordinate such actions as tightening monetary policy, stemming volatility in the foreign exchange markets and curbing currency speculation activities (KBA, 2014).

Mishkin (2000) explained that with inflation lenders or depositors who pay a fixed rate of interest on loans or deposits will lose purchasing power from their interest earnings while their borrowers benefit. A positive effect of inflation is derived from debt relief where debtors who have debts with a fixed nominal rate of interest will see a reduction in the real interest rate as the inflation rate rises. The “real” interest on a loan is the nominal rate minus the inflation rate. Therefore if one takes a loan, with an interest rate of 15% and the inflation rate is at 5% the real interest rate that one will pay for the loan is 10%. Banks and other lenders adjust for this inflation risk either by including an inflation premium in the costs of lending the money by creating a higher initial stated interest rate or by selling the interest at a variable rate. Variable rate loans are often used to compensate for changes in inflation. When a lender issues a loan, the lender is making a bet about the rate of inflation over the life of the loan. If inflation does not react in the way the lender expects, then the lender may not make enough profit. Lenders wary of this possibility will use variable rate loans to protect themselves against loss. Variable rate loans will see higher interest rates when inflation is higher. Unfortunately, interest rates rarely drop when inflation goes back down. For corporate to protect themselves against high adjustable rates, a limit is set on how high the rate can climb.

Kenya has paid dearly in the past following the collapse of more than ten banks in mid-1990’s that was mainly attributed to non-performance of loans due to high rates of interest fuelled by inflation. The high non-performance loans ushered a regime of high lending rates, which further exacerbated the levels of default. As a result, the Kenyan banking industry experienced unprecedented instability (Ndung’u, 2014). Although the instability was not caused solely by the high inflation rates as it could be attributed to other factors such as information asymmetry, policy lending by state owned banks, politics among other factors, inflation was a key factor in the non-performance of loans (Ndung’u, 2014). Lending is a risky enterprise because repayment of loans can seldom be fully guaranteed.
The problem of interest rates and loan portfolio performance is not unique in Kenya. Others outside Kenya have researched on it considerably. The interest rate aspects of loan portfolio performance are discussed based on the theoretical and practical recommendations outlined in other research works done elsewhere outside Kenya.

7.3 Bank Market Niche and Loan Portfolio Performance

Different corporate have different negotiation abilities, based on their turnover negotiate differently with commercial banks regarding the level of interest rate to be paid on any facility extended. For purposes of this study, the Market niche shall be segmented into large corporate, small and medium enterprises, and retail enterprises. Large companies have higher turnover and thus it’s expected that they have access to better terms of access to credit facilities and better payment terms as well as better interest rates. This brings out a major difference in interest rate spread despite the clients being from the same bank. Clients with more capacity have a smaller interest rate spread because of their bargaining power while those with lesser capacity have a high interest rate spread. Large banks may have a comparative advantage in lending to large customers as they can exploit scale economies in evaluating the hard information that is available on such customers. Small banks, however, may not be able to lend to large companies because of size limitations. They are, for instance, more constrained by regulatory lending limits. Small banks may also have a comparative advantage in processing soft information on SMEs.

The financing of small and medium-sized enterprises (SMEs) has been a subject of great interest both to policy makers and researchers because of the significance of SMEs in private sectors around the world and the perception that these firms are financially constrained. According to Ayyagari, et al., (2007) on average, SMEs account for close to 60 percent of manufacturing employment. More importantly, SMEs not only perceive access to finance and the cost of credit to be greater obstacles than large firms, but these factors constrain SMEs (affect their performance) more than large firms. Until recently, the conventional wisdom regarding SME finance was that small and domestic banks are more prone to finance SMEs because they are better suited to engage in “relationship lending”, a type of financing based primarily on “soft” information gathered by the loan officer through continuous, personalized, direct contacts with SMEs, their owners and managers, and the local community in which they operate (Sengupta, 2007). However, De la Torre et al. (2008) disputed this conventional wisdom and proposed a new paradigm for bank SME finance, arguing that large and foreign banks, relative to other institutions, can have a comparative advantage at financing SMEs through arms-length lending technologies (e.g., asset-based lending, factoring, leasing, fixed-asset lending, credit scoring, etc.) and centralized organizational structures instead of relationship lending. Suppliers of external funds regard SME as riskier enterprises for a number of reasons. First, SME face a more uncertain competitive environment than larger companies and hence experience more variable rates of return and higher rates of failure. Olawale and Garwe, (2010) notes that despite the noted contributions of new SMEs, their failure rate in South Africa is one of the highest in the world, about 75% of new SMEs in South Africa do not become established firms. This is attributed to vulnerability to market changes and often inadequate management capabilities because of their smaller size. Secondly, SMEs are comparatively less equipped in terms of both human and capital resources to withstand economic adversities. Schiffer and Weder (2001) argued that due to vulnerability and high turnover SMEs are intrinsically riskier borrowers than large firms.

7.4 Bank Conditionality and Loan Portfolio Performance

Bank Lending policy is a statement of its philosophy, standards, and guidelines that its employees must observe in granting or refusing a loan request. These policies determine which retail or corporate clients the commercial banks approved for loans and which will be avoided, and must be based on the bank lending laws and regulations. The banking industry plays a major role in economic growth and development through provision of credit to execute economic activities. However, the major concern of any lender while advancing credit is how they will get their money back. Credit risk emanates from the probability that borrowers will default on terms of debt, subsequently leading to high levels of non-performing loans. This concern has resulted into several attempts to manage the increasing levels of non-performing loans (NPLs.)

Loan size can be measured in terms of loan supply or demand and loan repayment. Loan size has been a subject of interest to scholars who have studied banking. It has been studied either as a dependent variable or as an independent variable. In this study, loan size is studied as an independent variable. In the present study, loan size will be measured as the amount of loans given in a year. The level of interest rates has a direct effect on a consumer’s ability to repay a loan. For example, Thordesen and Nathan (1999), assert that when interest rates are low, people are willing to borrow because they find it relatively
easy to repay their debt. When interest rates are high, people are reluctant to borrow because repayments on loans cost more. Some consumers may even find it difficult to meet their existing loan repayments, especially if interest rates increase faster than the rise in a consumer's income. If interest rates rise sharply and stay high for a long period, some consumers will default on their loans.

Calcagnini et al., (2012) studied the link between loans, interest rates, and guarantees found that loan size was negatively related with bank interest rate spread. Moore & Craigwell (2013) examined the relationship between interest rates and loan sizes in Barbado and found that interest rate was positively related with size of bank loans. Further, Yusoff, Rahman, & Alias (2001) examined the relationship between interest and loan supply of Islamic and Conventional banking system in Malaysia and found positive relationship between bank loan growth and interest rates. Akinlo & Owoyemi (2012) examined the determinants of interest rate spreads in Nigeria and found a positive relationship between interest rate spread and loan size. On the other hand, Steffen (2008) examined how lending relationships affect loan rate smoothing in UK and found a negative but insignificant effect of loan size on loan portfolio performance.

7.5 Operating Costs and Loan Portfolio Performance

Banks incur costs of financial intermediation such as screening loan applicants to assess the risk profile of borrowers and monitor the projects for which loans are advanced. An increase in operating costs is expected to have positive influence on interest rate spreads (Were & Wambua, 2013). High operating costs are likely to include costs due to inefficiency leading to higher spreads and hence this variable is commonly used as an indicator of operational inefficiency. A higher cost of financial intermediation will drive up interest rates on loans while depressing interest rates on deposits hence influencing loan portfolio performance.

In Kenya, overhead costs are largely reflected in high employee payments and highly automated and well designed and furnished bank branches (Ngugi, 2001). The increase demonstrates initiatives by banks to increase provision of their services by adopting cost effective channels (CBK, 2012). Ngugi (2001) studied factors determining interest rate spread in the Kenya’s banking sector for pre-liberalization period and post-liberalization period. She found out that interest rate spread increases due to yet to be gained efficiency and high intermediation costs. Both implicit and explicit taxes widen the interest spread as they increase the intermediation costs (Ngugi, 2001).

7.6 Loan Portfolio Performance

According to the Financial Dictionary, portfolios are loans that have been made or bought and are held for repayment. Loan portfolios are the major asset of banks, thrifts, and other lending institutions (Katerega, 2013). The values of a loan portfolio depend not only on the interest rates earned on the loans, but also on the quality or likely hood that interest and principal will be paid. The loan portfolio is typically the largest asset and the predominate source of revenue. As such, it is one of the greatest sources of risk to a bank’s safety and soundness. The level of interest risk attributed to the bank’s lending activities depends on the composition of its loan portfolio and the degree to which the terms of its loans expose the bank’s revenue stream to changes in rates. Loan portfolio performance refers to the rate of profitability or return on an investment (ROI) in various loan products thus broadly, it looks at the number of clients applying for loans, how much they are borrowing, timely payment of installments, security pledged against the borrowed funds, rate of arrears recovery and the number of loan products on the chain. The loan products may comprise of; Salary loans, Group guaranteed loans, Individual loans and Since one of the main tasks of commercial banks is to offer loans and their main source of risk is credit risk, that is, the uncertainty associated with borrowers’ repayment of these loans.

8. Empirical Review

The relevant literature reviewed indicates the existence of several studies in developed and emerging economies while there was paucity of studies in Africa. Nampewo (2013) studied the determinants of the interest rate spread of the banking sector in Uganda using time series data for the period 1995 – 2010. Results show that the interest rate spread in Uganda is positively affected by the bank rate, the Treasury bill rate and non performing loans. However the analysis is undertaken at macro level hence concealing micro and bank-specific characteristics. Nakeba (2010) conducted a study on the role of credit management in the performance of indigenous commercial banks in Uganda. The findings of his study indicated that loan committees needed to take full responsibility of overseeing the loan acquisition process and report on the portfolio progress as a measure of careful monitoring of the loan portfolio performance in the bank. Nakeba’s study mostly focused on credit management but didn’t test the impact of interest rates on the loan
portfolio performance in commercial banks and the current study seeks to close this research gap.

A study on the Kenyan banking sector by Wambua (2013) however applied panel data analysis on disaggregated banking sector data to study interest rate spread. They found that bank-specific factors play a significant role in the determination of interest rate spreads. Industry specific factors and macroeconomic factors are insignificant. The study however uses a simple measure of spread i.e. difference between lending rate and deposit rate. This measure is adversely affected by the composition of lending of individual banks. Kaggwa (2013) did a study on the interest rate spread and loan portfolio performance in Ugandan commercial banks. This study examined the role of lending interest rates on the loan portfolio performance in commercial banks in Uganda. The study specifically looked at how Centenary Bank has ensured that the bank loan portfolio is maintained within acceptable limits; examined how the bank ensures compliance with regulatory requirements and how the bank has worked out problem loans including rescheduling and restructuring for better performance.

Onyekachi and Okoye (2013) examined the impact of bank lending rate on the performance of Nigerian Deposit Money Banks between 2000 and 2010. It specifically determined the effects of lending rate and monetary policy rate on the performance of Nigerian Deposit Money Banks and analyzed how bank lending rate policy affects the performance of Nigerian deposit money banks. The study utilized secondary data econometrics in a regression, where time-series and quantitative design were combined and estimated. The result confirmed that the lending rate and monetary policy rate has significant and positive effects on the performance of Nigerian deposit money banks.

9. Research Methodology

9.1 Research Design

A research design is the structure, or the blueprint, of research that guides the process of research from the formulation of the research questions and hypotheses to reporting the research findings (Gakure, 2010). According to Lavarakas (2008), a research design is a general plan or strategy for conducting a research study to examine specific testable research questions of interest. Kothari (2004) described a research design as a master plan that specifies the methods and procedures for collecting and analyzing the needed information. Research design refers to how data collection and analysis are structured in order to meet the research objectives through empirical evidence (Cooper & Schindler, 2006). The study will adopt a descriptive research design. The advantage of this design is that the researcher is able to use various forms of data as well as incorporating human experience. It gives researchers the ability to look at what they are studying in various aspects and provides a bigger picture as opposed to other types of research design (Kothari, 2004).

9.2 Target Population

The target population will comprise of top level managers, middle level managers and operational managers of the 11 listed commercial banks licensed by the Central Bank of Kenya and were in operation as on 31st December 2015 and still in existence by the time of collecting data in the year 2016. A complete list of the listed commercial banks operating in Kenya will be obtained from CBK. There are 44 commercial banks and 11 are listed in the Nairobi securities exchange as on December 2015.

9.3 Sampling Frame

The sampling frame will focus on the 44 commercial banks in Kenya CBK, (2011) with the sample being the 11 listed commercial banks in Kenya. The bank population will be stratified broadly according to the level of management for instance, top level management, middle level management and operational management. The strata will provide samples that will be selected from each category and the departmental managers from the selected samples will be interviewed. Beck and Polit (2003) refers to a sampling frame as the technical name for the list of the elements from which the sample will be chosen.

9.4 Sample Size and Sampling Technique

This study will use stratified sampling design and purposive sampling. Kothari (2012) noted that stratified sampling was used when population from which a sample is drawn did not constitute a homogeneous group. Stratified sampling will involve organizing the units in the population into strata using common characteristics. In this case bank managers will be classified into strata based on the level of management. Purposive sampling will involve selecting a certain number of respondents based on the nature of their knowledge in credit management. The respondents will include finance managers, credit managers, credit analysts, credit risk managers, portfolio managers and investor relations managers. This method will be used to select respondents from the various bank departments. The method is appropriate because the sample selected comprises of informed persons who possess vital data that is comprehensive to allow gaining a better insight into the problem.
Empirical Model

Regression model will be employed in the study. Independent variables in this study like liquidity, inflation, market niche, bank conditionality and operational costs have an effect on loan portfolio performance (dependent variable). In order to establish the association among the study variables and to test the formulated hypotheses. The study was based on the premise that interest rate spread (independent variable) as explained by liquidity, inflation, market niche, bank conditionality and operational costs have an effect on loan portfolio performance (dependent variable). In order to establish the statistical significance of the respective hypothesis, Correlation coefficient analysis will be used to statistically test the five hypotheses as presented in conceptual framework. All the hypotheses will be tested at 95 percent confidence level ($\alpha=0.05$). All these tests will be done using SPSS (statistical package for social science) version 24.

12. Empirical Model

Regression model will be employed in the study. Independent variables in this study like liquidity,
inflation, bank market niche, Bank conditionality and operating costs will be varied each at a time holding others constant to determine the effect of the variables on loan portfolio performance. Multiple linear regressions will be ideal for this study since there are many variables as shown below;

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \epsilon \]

Where: \( Y = \) Loan Portfolio Performance

\( \beta_0 \) = the Y-Constant or intercept.

\( \beta_{1-5} \) = Regression coefficient for each Independent variable.

\( X_1 = \) Liquidity

\( X_2 = \) Inflation

\( X_3 = \) Bank market niche

\( X_4 = \) Bank conditionality

\( X_5 = \) operating costs

\( \epsilon = \) Stochastic or disturbance term or error term

**13. Conclusion**

In summary, there are a number of empirical studies on the determination of interest rate margins and spreads, focusing on different sets of factors and methodologies. However, most of the explanatory variables considered are similar or more or less related, depending on the type of study and coverage. That notwithstanding, there is still paucity of empirical studies on interest rate spreads and loan portfolio performance with respect to African countries, particularly at the bank-level. Literature reviewed in Kenya reveals that Ngugi (2001), Were & Wambua (2013) are the main contributors to the subject. They reviewed three major factors that affect interest rate spread and they grouped them as Bank specifics, Macro economic variables and industry specifics. They concluded that bank specifics greatly influence the interest rate spread while macroeconomic variable and industry specifics have no significant effect on the interest rate spread. However their studies were on the determinants of interest rate spread while this study will look at the influence of the determinants of interest rate spread on loan portfolio performance amongst listed commercial banks in Kenya. This study hopes to cast light in regards to determinants of the interest rate spread and its level of significance to loan portfolio performance in Kenya by examining the following key components of interest rate spread; Liquidity, inflation, market niche and bank conditionality and operating costs.

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