INFLUENCE OF INTEREST RATE SPREAD AND DISCOUNT RATES ON LOAN PERFORMANCE IN COMMERCIAL BANKS BRANCHES IN KAKAMEGA COUNTY, KENYA

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ABSTRACT

This research investigated the influence of; interest rate spread and discount rate on loan performance of commercial banks branches in Kakamega County, Kenya. The study adopted descriptive survey design and used census method to collect data using a questionnaire from its target population of 98 senior management staff of 10 commercial banks branches in Kakamega County. A pilot study was conducted among 10 senior management staff of Kenya commercial bank, Bungoma branch, so as to check research instrument's validity and reliability where Cronbach alpha test for reliability was done and all the responses yielded an acceptable measure of 0.7and above. SPSS) version 24 was used in data analysis. Both descriptive and inferential analysis was carried out. From a total of 98 questionnaires, 81 questionnaires were returned when dully filled depicting a response rate of 82.7%. From the values of unstandardized regression coefficients with standard errors in parenthesis, the independent variables (Interest rate spread; β = 0.176 (0.065) at p<0.05; and Discount rate; β = 0.324 (0.061) at p<0.05; were significant predictors of loan performance (dependent variable). The study concluded that interest rate spread and discount rates are significant determinants of loan performance in commercial banks. The study recommended that; commercial banks should strategically alert on interest rate spread following interest rate liberalization characterized by high implicit costs with tight monetary policy achieved through increased reserve and cash ratios so as to reduce their non-performing loans. Further, commercial banks should be alert on discount window by the central bank so as to access more loanable funds with minimal administrative costs so as to compensate for seasons of net loan losses.

Key Words: Interest Rate Spread, Discount Rate, Loan Performance, Kakamega County

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INTRODUCTION

Commercial banks play certain key roles in economic growth by means of financial intermediary service provisions which includes savings mobilization, risk management, projects evaluation, facilitating transactions plus channeling of funds from depositors (surplus units) to investors (deficit spending units) as a key role played by commercial banks. This is possible so long as commercial banks can generate enough income to cover operational cost incurred. Thus for sustainable intermediation to function well, there is the need for financial performance (profitability) in the commercial banking industry (Festic, Repina, & Kavkler, 2009).

In this regard, one of the standardized and widely employed statistic measures of financial performance of a banking institution is the ratio of non-performing loans (NPLs) to total loans. This ratio is often used to evaluate and compare bank loans portfolio quality (Swarnapali, 2014). Keeton and Morris (1987) brought one of the first empirical studies on the subject of non-performing loans (NPLs) examining the causes of loan loss diversity of banks in USA. The study indicated that, part of the changes in loan losses was significantly due to differences in local economic situations and also owing to poor performance in industries such as agriculture and energy, with a minor part of the remaining variation in loan loss associated to bank specific factors, such as banks intentionally embarking on greater risks and granting loans that knowingly have a high default probability. Many studies and findings consider non-performing loans (NPLs) as toxic with injurious effects on both economic development and social welfare (Zeng, 2011). Commercial Banks therefore take into consideration several factors in controlling the level of non-performing loans.

Non-performing loans were considered one of the main causes of the global financial crisis (2007-2009) which damaged the USA economy and economies of many countries (Adebola, Wan Yusoff, & Dahalan, 2011). In Jordan, many economists and bankers argued the impacts of global financial crisis on Jordanian economy as whole, and on banking sector in particular. Rising levels of non-performing loans (NPLs) in Jordan since global financial crisis continue to exert strong pressure on banks' balance sheet, with possible adverse effect on banks' lending operations (Adebola, Wan Yusoff, & Dahalan, 2011).

Further, since the onset of the crisis in 2008, NPLs ratio as a percentage of total loans increased from 4.2 percent to 8.4 percent at the end June 2012 (CBJ, Financial Soundness Indicators, 2013). Although the current level of NPLs was considered within the internationally accepted levels, but it increasing trends over time was worrying, thus, it was necessary to control non-performing loans for the economic growth in the Jordan, otherwise the resources can be jammed in unprofitable projects and sectors which not only damages the financial stability but also the economic growth, hence, researchers embarked on investigating the determinants of non-performing loans in the Jordanian banking sector with inconclusive findings (CBJ, Financial Soundness Indicators, 2013).

According to the Central Bank of Kenya, there are 43 licensed commercial banks in Kenya. Three of the banks are public financial institutions with majority shareholding being the Government and state corporations. The rest are private financial institutions. Of the private banks, 27 are local commercial banks while 13 are foreign commercial banks. Commercial banks in Kenya play a major role in Kenya. They contribute to economic growth of the country by making funds available for investors to borrow as well as financial deepening in the country. Commercial banks therefore have a key role in the financial sector and to the whole economy (CBK, 2014). This is due to the fact that any bankruptcy that could happen in the sector has a contagion effect that

can lead to bank runs, crises and bring overall financial crisis and economic tribulations.

Kimani (2013) posit that Loan portfolio is essentially the largest asset base commercial banks boast about and it is the predominantly greatest source of income. Thus, effective management of loan portfolio and credit function is fundamental to a bank's safety and soundness. Loan portfolio management is the process by which risks that are inherent in the credit process are managed and controlled. Good loan managers have concentrated most of their effort on prudently approving loans and carefully monitoring loan performance. However, Commercial banks have witnessed stiff competition forcing banks to repackage their services and products to satisfy the needs of the customers and retain their market share. Islamic banking has also emerged as a new market product not charging interest hence also provide a competitive edge on other commercial banks that give credit to borrowers at a stipulated interest rate.

In recent years, commercial banks in Kenya have been performing very well in terms of profitability but despite the good overall financial performance of banks in Kenya, there are a couple of banks declaring losses due to interested capping law introduced by the CBK. The current loan performance failures in some commercial banks in Kenya, invited researchers and practitioners in the banking sector to understand the banks performance parameters and how loan performance has been among other variables affecting commercial banks profitability after the introduction of the interest caps (CBK, 2016). This research therefore endeavors to investigate the influence of interest rate spread and discount rates on loan performance in commercial banks branches in Kakamega County, Kenya.

Statement of the Problem

Non-performing Loans (NPLs) has attracted a great deal of interest among researchers and policy makers during the last four decades as these increasing non-performing loans are causing banking crisis which are turning into banking failures (Swarnapali, 2014). That is, most commercial banks make profits from lending money to willing borrowers but this lending has created financial problems for some commercial banks in terms of non-performing loans (Upal, 2009). To help understand this menace, most studies Amuakwa and Boakye (2014); Alpha (2012); Liu and Sceiso (2009); Steven (2011) found that both bank specific factors (previous year's NPL, bank size, net interest margin and current year's loan growth) and macroeconomic factors (past inflation, real GDP, per capita growth and real effective exchange rate) significantly affect non-performing loans of large banks in developed countries but not necessarily applicable in explaining NPLs commercial banks in developing countries.

According to the supervisory report of the central bank annual report (2015) the banking sector had remained stable and resilient 2015 as evident by 9.2% of growth in the banking sector's balance sheet from Ksh 3.2 trillion in December 2014 to Ksh 3.5 trillion in December 2015. This is despite the slowdown in global economic growth to 3.1 per cent in 2015 from 3.4 per cent in 2014 largely due to slowdown in growth in China and the sluggish recovery in the Euro zone.

In Kenya, the Banking Amendment Bill 2016 was passed and implemented in September 2016. The interest rates were very high and the banks were performing very well. Currently the interest rates are restricted. The amendment put a cap of lending rate at 4% above the central banks rates and interest rate on the deposit held in interest earning account in Kenya to be 70% of the base set and published by Central Bank of Kenya. This amendment has had an effect on the financial performance of commercial banks. Few researches, Campion, Ekka and Wenner, (2010); Maimbo and Collegos (2014); Heng (2015); have been done to assess whether interest rate cap rates has an effect on loan performance in

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commercial banks but yielded inconclusive results. Further there exists miniature literature on the effect of interest rate spread and discount rate on loan performance. This research therefore investigated the influence of interest rate spread and discount rates on loan performance of commercial bank branches in Kakamega County, Kenya.

Study Objectives

The general objective of this study was to investigate the influence of interest rate determinants on loan performance in commercial banks branches in Kakamega County, Kenya. The specific objectives were:-

- To assess the influence of Interest Rate Spread on Loan Performance in commercial banks branches in Kakamega County, Kenya.
- To evaluate the influence of Discount Rates on Loan Performance in commercial banks branches in Kakamega County, Kenya.

Research Hypotheses

Ho_1: Interest Rate Spread does not significantly influence Loan Performance in commercial banks branches in Kakamega County, Kenya.

Ho_2: Discount Rates does not significantly influence Loan Performance in commercial banks branches in Kakamega County, Kenya.

LITERATURE REVIEW

Theoretical Framework

Irving Fisher's theory of Interest

Irving Fisher's theory of interest rates relates the nominal interest rate (I) to the rate of inflation (π) and the "real" interest rate (r). The real interest rate (r) is the interest rate after adjustment for inflation. It is the interest rate that lenders have to have to be willing to loan out their funds (Keynes, 1933). The relation Fisher postulated between these three rates is:

$1+i = (1+r) (1+\pi) =1+r+\pi+r\pi$; equivalent to $i = r+ \pi (1 + r)$. Thus, according to this equation, if (π) increases by 1 percent the nominal interest rate increases by more than 1percent. This means that if r and π are known then i can be determined. On the other hand, if (i) and (π) are known then (r) can be determined and the relationship is: $1+r = (1+i)/ (1+\pi)$. When (π) is small then (r) is approximately equal to i-π, but in situation involving a high rate of inflation the more accurate relationship must be taken into account. Fisher assumes that r* is given by technology and tastes; r* is a physical rate of return. However, in his analysis, Fisher recognizes that r* is actually calculated in money terms and that price expectations matter for the decision the rate of return over cost is the monetary expression of r* and is the essential variable for investment (Fisher1930). But then some researchers wonder if it is justified to criticize Fisher's analysis for not taking into account the importance of money and monetary expectations. This Fisher's theory of interest applies in this study in that it informs the study on the connection between interest rates and inflation rates and how this interest rates and inflation rate relationship impact on loan performance of commercial banks in Kenya.

Expectations Theory of Interest Rates

Expectations theory of interest rates purports to explain the shape of the yield curve, or the term structure of interest rates. The forces that determine the shape of the yield curve have been widely debated among academic economists for a number of years (Fisher, 1930). The American economist Irving Fisher advanced the expectations theory of interest rates to explain the shape of the curve. According to this theory, longer-term rates are determined by investor expectations of future short-term rates. In mathematical terms, the theory suggests that: $(1 +R_2)^2 = (1 +R_1) \times (1+E(R_1))$. Where; R_2= the rate on two-year securities, R_1 = the rate on one-year securities. $E(R_1)$ = the rate expected on one-year securities one year from now. The left side of this equation is the

amount per dollar invested that the investor would have after two years if he invested in two-year securities. The right side shows the amount he can expect to have after two years if he invests in one-year obligations.

Competition is assumed to make the left side equal to the right side. The theory is easily generalized to cover any number of maturity classes. And how ever many maturity classes there may be, the theory always explains the existence of longer-term rates in terms of expected future shorter-term rates (Keynes, 1933).The expectations theory of interest rates provides the theoretical basis for the use of the yield curve as an analytical tool by economic and financial analysts. For example, an upward sloping yield curve is explained as an indication that the market expects rising short- term rates in the future. Since rising rates normally occur during economic expansions, an upward-sloping yield curve is a sign that the market expects continued expansion in the level of economic activity (Keynes, 1933).Financial analysts sometimes use this equation to obtain a market related forecast of future interest rates. It can thus be rewritten as follows: $E(R_1) = [(1+R_2)^2/(1+R_1)]-1$. The equation suggests that the short-term rate expected by the market next period can be obtained from knowledge of rates today (Kregel, 1985). The theory thus relates to this study in that if expectation of the people is that interest will rise many people will avoid borrowing; this in return will affect loan performance in terms of few people borrowing loans due to high interest rate, but if people expect interest rate to drop (especially in the case of interest capping) people would be willing to borrow and this will improve banks loan performance in terms of improved Total Loan Ratio and loan repayment rates.

The Loanable Fund Theory

This is a dynamic and optimizing theory of bank operation that integrates insights of production theory, financial intermediation and portfolio theories (Fisher, 1998). The unified model clarifies the relationship between the risk of asset portfolios and a bank's output of services. Portfolio risk determines the rate of return on loans and banks' borrowed funds and, in turn, the discount rate used to derive the present value of future profits part of which are generated by bank services. Nevertheless, the quantity of service output is affected by risk only to the extent that portfolios of different risk require different amounts of information processing. In addition, the model shows that loanable funds are merely an intermediate input that passes through banks, whereas true bank value added is only the services facilitating the provision of funds. The model further establishes separability between the use of funds and the production functions of value added in a bank's overall optimization problem (Fisher, 1998).

In short, by resolving the fundamental question of how to measure bank output, this model contributes to a large literature on banks loan performance. Moreover, this model can resolve some long-time conceptual debates in the bank production literature, particularly the one regarding the role of deposits, interest and inflation rates on banks loan performance. It demonstrates that deposit funds are "materials," inputs in the generation of new loans, but the transaction services associated with deposits plus interest rates determinants are part of bank output. Therefore, this theory applies in this study since it assesses the influence of interest rate related factors on banks loanable facility so as to examine whether interest rate determinants really affect loan performance in commercial banks.

Balanced Portfolio Theory

The portfolio theory approach is also relevant and plays an important role in banks loan performance (Nzongang &Atemnkeng, 2006). According to the Portfolio balance model of asset diversification, the optimum holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of

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return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets (Nzongang & Atemnkeng, 2006). This theory applies in this study in that, loan performance can be influenced by not only a bank's financial assets and the size of the portfolio but by also a vector of risks such as interest and inflation rates associated with the ownership of each financial assets and the size of the portfolio.

Empirical Review of Literature Relevant to the Study

Interest rate spread and loan performance in commercial banks

A study by Wambua (2014), sought to find out the factors that affect interest rate spread in commercial banks in Kenya, with a major concern that with a liberalized financial sector, the interest rate spread ought to be narrower than what was in the market. The study found that though there were over 40 commercial banks in Kenya, the market share was highly skewed with 14% of the banks controlling more than half of the market share. The study also found that such factors as bank size, liquidity risk and credit risk were key in determining the interest rate spread. In a liberalized environment, monetary policy instruments such as CBR did not play a key role. Therefore in the interest rate cap regime, the spread is pre-determined; hence this study seeks to examine how this affects non-performing loans.

Irungu (2013) also sought to describe the effect of interest rate spread on Kenya commercial banks financial performance and found that interest rate spread affects performance of assets in banks as it increase the cost of loans charged on the borrowers;

thus showing that regulation of interest rates have far reaching effects on asset non-performance. Ngugi (2001) while analyzing interest rate in Kenya found a widening interest rate spread following interest rate liberalization characterized by high implicit costs with tight monetary policy achieved through increased reserve and cash ratios and declining non-performing assets.
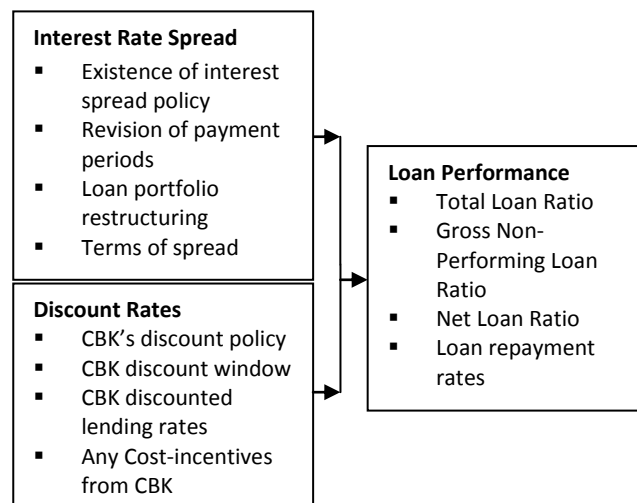
George (2013) also studied on the effect of interest rate spread on the financial performance of SACCOs in Kenya. The study found out that financial performance of SACCOs was not affected by changes in the commercial interest rate spread as set by the CBK. But with the introduction of interest capping, SACCOs have doubled exercise duty, indicating that they could be encountering interest capping shocks.

Discount rates and loan performance in commercial banks

These are cost-incentives from the central bank of Kenya advanced to commercial banks. Central bank lending is widely regarded as a vital part of the public safety net supporting the stability of the banking system and financial markets more generally. A central bank that is financially independent and has a sizable portfolio of securities can provide large amounts of liquidity to institutions on very short notice. Indeed, central bank lending has been a prominent part of regulatory assistance to troubled financial institutions for a long past (Mwega, 2000). In this regard, the Central Bank of Kenya (CBK), like most other central banks around the world, is entrusted with the responsibility of formulating and implementing monetary policy directed at achieving and maintaining low inflation, maintains a sound market-based financial system, thus can cushion commercial banks during severe inflationary periods.

Kimani (2013) assessed the effects of monetary policies on lending behaviour of commercial banks in Kenya and employed descriptive research design and analyzed data using descriptive analysis. The study found that cash reserve ratio has effect on bank

lending behaviour and reserve requirements cause immediate liquidity problems for banks with low excess reserves thereby, influencing lending and payment systems in the commercial banks concerned. Holding some funds in excess reserves provides enhanced liquidity and therefore, more smooth operation of payment system and that the higher the reserve requirement is set, the fewer funds banks will have to loan out. Banks decision to extend loans to new or existing customers by banks will be affected by both the current and near-term expected state of macro-economy as dictated by variation in monetary policies. Uncertainty may lead to holding behaviour by commercial banks and that when it is not certain on the changes in the monetary policies, or cost incentives from Central bank, banks might be forced to withhold credit in fear that it might result to non-performing loans. The study therefore recommended use of discount rates in terms of cost- incentives from the Central bank so as to counter non-performing loans but lacks empirical data to support this assertion.

Conceptual Framework

Interest Rate Spread
- Existence of interest spread policy
- Revision of payment periods
- Loan portfolio restructuring
- Terms of spread

Discount Rates
- CBK's discount policy
- CBK discount window
- CBK discounted lending rates
- Any Cost-incentives from CBK

Loan Performance
- Total Loan Ratio
- Gross Non-Performing Loan Ratio
- Net Loan Ratio
- Loan repayment rates

Independent variables   Dependent Variable

Figure 1: Conceptual Framework

Source: (Author, 2019)

Interest rate spread and loan performance in commercial banks

This is the difference between a bank's lending rate and deposit rate. That is, the interest rate charged by banks on loans to prime customers minus the interest rate paid by commercial or similar banks for demand, time or savings deposits (Mangeli, 2012). Studies have shown that this interest rate spread can affect non-performing loans (Wambua, 2014), thus this study shall assess whether there is a significant relationship between interest rate spread and loan performance in commercial banks. This is supported by Chand (2012) who asserted that when there is high intermediation cost, reflected in the high interest rate spread, the borrower may be unable to repay his/her loan owing to the cost of such borrowings. This leads to a high risk of loan default hence non-performance.

Discount rates and loan performance in commercial banks

These are cost-incentives from central banks extended to commercial banks. That is for instance, central bank's discount policy or discount window, lowering Central Bank Rate on commercial Bank's Prime Rate for the sole sake of protecting the vulnerable commercial banks from insolvency (Whitfield, J. (2011). This is because Central bank lending is widely regarded as a vital part of the public safety net supporting the stability of the banking system and financial markets in any economy. Therefore this study will assess whether despite CBK's interest capping policy, CBK's cost incentives discounted to commercial banks can check loan performance especially if high loan delinquency rates leads to liquidation panic among some commercial banks having insignificant loan reserves.

Loan performance in commercial banks

This is the dependent variable in the study. Loan portfolios are loans that have been made or bought by institutions. The value of a loan portfolio depends not only on the interest rates earned on the loans,

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but also on the quality or likelihood that interest and principal will be paid. Thus they are held for repayment. The loan portfolio is further, 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 financial soundness (Whitfield, 2011). In this study loan performance will be measured in terms of Number of new bank loan applicants, Total Loan Ratio, Gross Non-Performing Loan Ratio, Net Loan Ratio, Number of Non-Performing Loans, Loan default rates and Loan repayment rates.

METHODOLOGY

This study utilized descriptive survey design. Descriptive survey design helps the researcher to collect information that describe, explore and help the investigator understand social life. Surveys attempt to quantify social phenomena particularly issues, conditions and problems that are prevalent in the society. Descriptive surveys further enable the researcher to focus on the links among a smaller number of the target population (Mugenda & Mugenda, 2013). The target population of the study was 98 employees of all the ten (10) commercial banks in Kakamega County. The study used structured (close ended) questionnaire to get uniform responses from respondents. The structured questionnaire was relevant for this study because respondents were provided with questions for each study variable and relevant information can be collected over a short period of time, easy to administer and cost effective (Mugenda & Mugenda, 2003). The quantitative data collected was analyzed by the use of descriptive statistics using Statistical Package for Social Sciences (SPSS 24) and presented through percentages, means, standard deviations and frequencies. The multiple regression model equation was;

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + + \varepsilon;$

Where; Y is the dependent variable (loan performance),

α is the constant

$\beta_1 \ldots \ldots \beta_2$ are beta coefficients

$X_1 \ldots \ldots X_2$ are independent variables (interest rate spread and discount rates and

ε is the error term.

FINDINGS

Descriptive statistics in this study were summation of responses based on independent variables (interest rate spread and discount rates and the dependent variable (loan performance). Descriptive statistics thus showed the outcomes of responses to each of the statements on the study variables using Likert scale with values ranging from 5 to 1; that is; 5=Strongly Agree, 4=Agree, 3= Uncertain, 2=Disagree and 1= Strongly Disagree. The results are presented in the table form showing frequencies of responses as per each statement and its corresponding percentage score in brackets.

Interest Rate Spread and Loan Performance

This assessed objective one of the study; that is, the influence of interest rate spread on loan performance in commercial banks in Kakamega County. Respondents were asked to respond to 6 statements; (i) Clients with difficulty in loan payments were usually given a convenient extension period to ease their loan repayments; (ii) Credit Management Policy incorporates interest rate spread; (iii) Some of the loans in the loan portfolio were restructured and spread out appropriately to meet customers paying abilities; (iv) Interest rate spread was based on the ratio of non-performing loans to total loans; (v) The credit management policy had incorporated interest rate spread to improve loan performance and (vi) Generally, interest rate spread influenced loan repayments. The results were presented in the table 1.

Table 1: Descriptive Statistics; Interest Rate Spread

Statement	Frequency and Percentage (%)					Mean	Std.Dev
	5	4	3	2	1		
1. Clients with difficulty in loan payments are usually given a convenient extension period to ease their loan repayments	2(2.5)	47(58.1)	4(4.9)	13(16.0)	15(18.5)	3.10	.861
2.Credit Management Policy incorporates interest rate spread	3(3.7)	45(55.6)	5(6.2)	20(24.6)	8(9.9)	3.19	.852
3. Some of the loans in the loan portfolio are restructured and spread out appropriately to meet customers paying abilities	11(13.6)	49(60.5)	2(2.5)	10(12.3)	9(11.1)	3.53	.905
4.Interest rate spread is based on the ratio of non-performing loans to total loans	22(27.2)	36(44.4)	12(14.8)	6(7.4)	5(6.2)	3.79	.915
5.The credit management policy has incorporated interest rate spread to improve loan performance	11(13.6)	55(67.9)	4(4.9)	5(6.2)	6(7.4)	3.74	.902
6.Generally, interest rate spread influence loan repayments	4(4.9)	50(61.8)	12(14.8)	10(12.3)	5(6.2)	3.47	0.989

Valid N (listwise)   81

Grand mean = 3.470

From table 1, most respondents agreed (58.1%) that clients with difficulty in loan payments were usually given a convenient extension period to ease their loan repayments while a small number (16.0%) disagreed to the statement. This meant that convenient extension period to ease loan repayments was feasible loan repayment strategy which eventually impacts positively on bank loan performance. Secondly, most respondents also agreed (55.6%) that credit management policy incorporates interest rate spread. This implied that most commercial banks craft credit management policies in line with interest rate spread so as to encourage flexible loan repayments meant to reduce loan delinquencies. This was further supported by 67.9% of respondents who agreed that the credit management policy has incorporated interest rate spread to improve loan performance More so, most respondents (60.5%) agreed that some of the loans in the loan portfolio were restructured and spread out appropriately to meet customers paying abilities. This restructuring and spread out of loan to meet customers paying abilities was also meant to attract and retain customers to particular loan facilities, thus eventually increase the banks' gross loan ratio. In support of this, 44.4% of respondents agreed that interest rate spread is based on the ratio of non-performing loans to total loans.

In summary, most respondents agreed (61.8%) that generally, interest rate spread influence loan repayments. This was supported by Chand (2012) who asserted that when there is high intermediation cost, reflected in the high interest rate spread, the borrower may be unable to repay his/her loan owing to the cost of such borrowings. This led to a high risk of loan default hence non-performance. This study results were also supported by Irungu (2013) who also found that interest rate spread affects performance of assets in banks as it increase the cost of loans charged on the borrowers; thus showing that regulation of interest rates have far reaching effects on asset non-performance.

Discount Rates and Loan Performance

This assessed objective two of the study; that is, the influence of discount rate on loan performance in commercial banks in Kakamega County. Respondents were asked to respond to 6 statements namely; (i) CBK's discount rates have an impact on banks loan performance; (ii) Raise in exercise duty charged on loan transactions affects loan performance; (iii) CBK's discount rates are considered when crafting bank's loaning policies; (iv) CBK's discount policy barriers affects loan performance; (v) Lowering of bank administration costs influences loan performance and (vi) generally favorable CBK's discount window influences loan performance. The results were presented in table 2.

Table 2: Descriptive Statistics; Discount Rate

Statement	Frequency and Percentage (%)					Mean	Std.Dev
	5	4	3	2	1		
1.CBK's discount rates have an impact on banks loan performance	9(11.1)	60(74.1)	4(4.9)	6(7.4)	2(2.5)	3.84	.813
2. Raise in exercise duty charged on loan transactions affect loan performance	16(19.8)	43(53.1)	3(3.7)	15(18.5)	4(4.9)	3.64	.944
3. CBK's discount rates are considered when crafting bank's loaning policies	10(12.3)	33(40.9)	21(25.9)	10(12.3)	7(8.6)	3.36	.821
4. CBK's discount policy barriers affects loan performance	10(12.3)	36(44.5)	14(17.3)	17(21.0)	4(4.9)	3.38	.902
5. Lowering of bank administration costs influences loan performance	12(14.8)	51(62.9)	5(6.2)	8(9.9)	5(6.2)	3.70	.842
6.Generally favorable CBK's discount window influences loan performance	8(9.9)	42(51.8)	11(13.6)	14(17.3)	6(7.4)	3.40	.914
Valid N (listwise) 81							
Grand mean = 3.553							

From table 2 most respondents (74.1%) agreed that CBK's discount rates have an impact on banks loan performance. This implies that most commercial banks take advantage of the CBK's discount window to roll out several loan products so as to improve their total loan ratio, and with improved loan repayments their net loan ratio will be improved. Secondly, 53.1% and 19.8% agreed and strongly agreed respectively that raise in exercise duty charged on loan transactions affect loan performance. This has two implications in that, raising of exercise duty charged on loan transaction may help cushion the banks against net loan loss and at the same time may affect the banks total loan ratio since this loan transactions charges may discourage some potential bank loan applicants.

Thirdly, 40.9% agreed while 25.9% were uncertain that CBK's discount rates are considered when crafting bank's loaning policies. The 25.9% who disagreed to this statement imply that CBK discount window could be unpredictable, thus may not really act as a reliable guiding principle while crafting banks loaning policies. However, 44.5% and 12.3% agreed and strongly agreed respectively that CBK's discount policy barrier affects loan performance. That is CBK's discount policy barriers may favorably or unfavorably affect bank loan performance.

More so, most respondents (62.9%) agreed and strongly agreed (14.8%) that lowering of bank administration costs influences loan performance. This is because such administration costs are

sometimes passed to loanees who may view them as hidden loan transaction costs and could discourage some potential loan applicants hence negatively affecting the bank's total loan ratio. Lastly, most respondents (51.8%) agreed that generally favorable CBK's discount window influences loan performance. This is because cost-incentives from central banks extended to commercial banks such as central bank's discount policy or discount window, lowering Central Bank Rate on commercial Bank's Prime Rate for the sole sake of protecting the vulnerable commercial banks from insolvency (Whitfield, J. (2011).

Inferential Analysis

For the reason that inferential analysis was based on linear and multiple regressions, assumptions of multiple regression analysis were taken into consideration.

The correlation analysis in table 3 showed that all independent variable (interest rate spread and discount rates had significant bivariate relationship with the dependent variable (loan performance).

Table 3: Correlation Analysis

		Interest Rate Spread	Discount Rates	Loan Performance
Interest Rate Spread	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	81		
Discount Rates	Pearson Correlation	.586[**]	1	
	Sig. (2-tailed)	.000		
	N	81	81	
Loan Performance	Pearson Correlation	.718[**]	.741[**]	-. 1
	Sig. (2-tailed)	.000	.000	
	N	81	81	81

[**]. Correlation is significant at the 0.01 level (2-tailed).

Multicollinearity was checked using correlations between all pairs of independent variables (interest rate spread and discount rate). Most researchers asserts that if correlation coefficient, (r) is close to 1 or -1, then there is multicollinearity but if correlation coefficient (r) is not above 0.8, then there is no multicollinearity In this study (table 3 on correlation analysis), the highest correlation coefficient between all pairs of independent variables is 0.655, which is below the threshold of 0.8, thus multicollinearity assumption was not violated.

Linear Regression Results

Linear regression analysis was employed to test four study hypotheses; that is, to test the influence of interest rate spread and discount rate on loan performance in commercial banks in Kakamega County, Kenya.

Direct influence of Interest Rate Spread on Loan Performance

This tested the direct linear influence of interest rate spread on loan performance in commercial banks in Kakamega County. The results are shown in table 4.

Table 4: Direct Influence of Interest rate spread on Loan performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.718[a]	.515	.509	.66317	.515	83.849	1	79	.000

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.877	1	36.877	83.849	.000[a]
	Residual	34.744	79	.440		
	Total	71.621	80			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.635	.243		6.734	.000
	Interest Rate Spread	.648	.071	.718	9.157	.000

a. Dependent Variable: Loan Performance

The above model summary in table 4 showed that R squared was 0.515 which implied that 51.5% of variation in loan performance was explained by interest rate spread while other factors not in the model accounts for 48.5% variation in loan performance. Further coefficient analysis revealed that there exists a positive and significant effect of interest rate spread on loan performance (β= 0.648 (0.071); *at p<.01*). The results therefore implied that a single increase in interest rate spread measures will lead to 0.648 unit increase in loan performance. Therefore, the linear regression equation model is;

(i)Y = 1.635+ 0.648X$_1$

Where:

Y = Loan performance

X$_1$ = Interest rate spread

Direct influence of Discount Rate on Loan Performance

This tested the direct linear influence of discount rate on loan performance in commercial banks in Kakamega County.

The above model summary in table 4 showed that R squared was 0.549 which implied that 54.9% of variation in loan performance was explained by discount rate while other factors not in the model accounts for 45.1% variation in loan performance. Further coefficient analysis revealed that there exists a positive and significant effect of discount rate on loan performance (β= 0.698 (0.071); *at p<.01*). The results therefore implied that a single increase in discount rate adjustments will lead to 0.698 unit increase in loan performance. Therefore, the linear regression equation model was;

(iii)Y = 1.505+ 0.698X$_2$

Where:

Y = Loan performance

X$_2$ = Discount rate

Table 5: Direct Influence of Discount Rate on Loan Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.741[a]	.549	.543	.63942	.549	96.172	1	79	.000

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.321	1	39.321	96.172	.000[a]
	Residual	32.300	79	.409		
	Total	71.621	80			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.505	.240		6.271	.000
	Discount Rates	.698	.071	.741	9.807	.000

a. Dependent Variable: Loan Performance

Multiple Regression Analysis

Linear regression analyses showed both the F values and the corresponding significant values that the two independent variables (interest rate spread and discount rate) were indeed different from each other and that they affect the dependent variable (loan performance) in a different manner, hence, the possibility of running multiple regression. Requisite model assumptions for running multiple regression analysis were also checked and met.

Table 6: Multiple Regression Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.904[a]	.818	.808	.41417	.818	85.383	2	78	.000

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	58.584	2	14.646	85.383	.000[a]
	Residual	13.037	78	.172		
	Total	71.621	80			

a. Predictors: (Constant), , Interest Rate Spread, Discount Rates,

b. Dependent Variable: Loan Performance

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Table 6 showed the multiple regression results of the combined effects of the two independent variables (interest rate spread and discount rate). The results showed that the F-statistics produced is significant (F=85.383, *significant* at *p<.001*), thus confirming the fitness of the model. For an R square of 0.818, we can say that the study model explained 81.8% of the variations in the commercial bank's loan performance, while other factors not in this study model accounted for 18.2%, thus, it is a good model. Further, from the values of unstandardized regression coefficients with standard errors in parenthesis, both independent variables (Interest rate spread; β = 0.176 (0.065) at *p<0.05*;; Discount rate; β = 0.324 (0.061) at *p<0.05, at p<0.05;* were significant predictors of loan performance (dependent variable). Therefore, the multiple regression equation for overall significant influence of the independent variables (interest rate spread and discount rate) on loan performance

(dependent variable) in commercial banks in Kakamega County was;

(v) Y= 0.599 +0.176X₁++ 0.324X₂

$$Y = 0.599 + 0.176X_1 ++ 0.324X_2$$

Where;
Y= Loan Performance
X_1= Interest rate spread
X_2= Discount rate

From the multiple regression model, on variable one, the study results implied that a single increase in interest rate spread measures will lead to 0.176 unit increase in loan performance in commercial banks branches in Kakamega County. For variable two, the results implied that a single increase in discount rate adjustments will lead to 0.324 unit increase in loan performance in commercial banks branches in Kakamega County.

Table 7: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.599	.275		2.174	.033
	Interest Rate Spread	.176	.065	.195	2.724	.008
	Discount Rates	.324	.061	.344	5.277	.000

a. Dependent Variable: Loan Performance

Hypothesis Testing

Research **Hypothesis one** stated that interest rate spread does not significantly influence loan performance in commercial banks branches in Kakamega County, Kenya. The study results indicated that there exists a positive and significant effect of interest rate spread on loan performance in commercial banks branches in Kakamega County (β= 0.176 (0.065), at *p<.05*. **Hypothesis one was thus rejected.**

The study results therefore implied that a single increase in interest rate spread measures will lead to 0.176 unit increase in loan performance in commercial banks branches in Kakamega County. These results were supported by Irungu (2013) who sought to describe the effect of interest rate spread on Kenya commercial banks financial performance and found that interest rate spread affects performance of assets in banks as it increase the cost of loans charged on the borrowers; thus showing that regulation of interest rates have far reaching effects on asset non-performance.

Research **Hypothesis two** stated that discount rate does not significantly influence loan performance in

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commercial banks branches in Kakamega County, Kenya. The study results indicate that there exists a positive and significant effect of discount rate on loan performance in commercial banks branches in Kakamega County (β= 0.324 (0.061), at *p<.05*. **Hypothesis two was thus rejected***.* The study results therefore implied that a single increase in discount rate adjustments will lead to 0.324 unit increase in loan performance in commercial banks branches in Kakamega County. The study results supported Mwega (2000) assertion that the Central Bank of Kenya (CBK), like most other central banks around the world, is entrusted with the responsibility of formulating and implementing monetary policy directed at achieving and maintaining low inflation, maintains a sound market-based financial system, thus can cushion commercial banks during severe inflationary periods by use of discount rates for instance.

CONCLUSIONS

First the study concluded that interest rate spread is a significant determinant of loan performance in commercial banks since a widening interest rate spread following interest rate liberalization characterized by high implicit costs with tight monetary policy achieved through increased reserve and cash ratios leads to declining of non-performing assets.

Secondly, discount rate significantly influences bank loan performance. That is, since lending rate and monetary policy rate impact on bank loan performance, most commercial banks are normally alert on discount window by the central bank.

RECOMMENDATIONS

First, commercial banks should be strategically alert on interest rate spread following interest rate liberalization characterized by high implicit costs with tight monetary policy achieved through increased reserve and cash ratios so as to reduce their non-performing loans.

Further, commercial banks should be alert on discount window by the central bank so as to access more loanable funds with minimal administrative costs so as to compensate for seasons of net loan losses.

Areas for Further Research

First, a panel study can be done using time series data so as compare results with cross sectional data. Secondly, a similar study can be replicated but targeting commercial banks loan customers so as assess loan performance perceptions from the lens of bank loan customers.

REFERENCES

Adams, J., Khan, H. ., Raeside, R., & White, D. (2007). Research methods for graduate business and social science students. *New Delhi: SAGE Publications India Pvt Ltd*.

Adebola, S., Wan Yusoff, S. , and Dahalan, D., (2011). An Ardl Approach to the Determinants of Nonperforming Loans. Kuwait Chapter of Arabian *Journal of Business and Management Review, Vol. 1, No.2.*

Akambi T.A. and Ajagbe F.A. (2012).Analysis of Monetary Policy on Commercial   Banks in Nigeria. *African Journal of Business Management,* 6, 51, 12038-12042.

Alpha K. (2012). An Empirical Study on Liquidity and Bank Lending. *Central Bank of the Republic of Turkey* Merkez Bank *Working Paper* No. 12/04*.* (2012)

Amuakwa M, F., & Boakye, A. (2014). Determinants of non–performing loans in Ghana banking industry. *International Journal of Computational Economics and Econometrics*, *5*(1), 35-

Appiah, N. B. (2011). Factors influencing loan delinquency in small and medium enterprises' in Ghana commercial bank ltd, Master's Dissertation, Kwame Nkrumah University of Science and Technology, Kumasi, 4-67.

Awunyo-Vitor, D. (2012). Determinants of loan repayment default among farmers in Ghana, *Journal of Development and Agricultural Economics*, **4** (13): 339-345.

Babbie, E. (2002). The basics of social research. Belmont: CA: Wadsworth Publishing.

Brown, S. ., Venkatesh, V., & Bala, H. (2013). Bridging the qualitative-quantitative divide: *Guidelines for conducting mixed methods research in information systems (1st ed., Vols. 1–37). MIS Quarterly.*

Business Review (SBR), 52: 344 – 362\

Campion, Anita, Kiran Rashmi Ekka, and Mark Wenner (2012). Interest Rates and Implications

Chand, S., 2002. Financial Sector Development and Economic Growth in Pacific Island Countries. *Pacific Economic Bulletin,* 17(1), 117-133.

Chelagat, K. N. (2015). Determinants of Loan Defaults by Small and Medium Enterprises among Commercial Banks in Kenya, Master's Dissertation, University of Nairobi, Kenya.

Cooper, D., & Schinder, P. (2010). Business Research methods (8th Ed.). New Delhi: tata McGraw hill.

Espinoza, R., and Prasad A., (2010). Nonperforming Loans in the GCC Banking Systems and their Macroeconomic Effects. IMF Working Paper 10/224 (Washington: International Monetary Fund).

Farhan, M., Sattar, A., Chaudhry, A., and Khalil, F., (2012). Economic Determinants of Non Performing Loans:Perception of Pakistani Bankers. European *Journal of Business and Management, Vol. 4, No. 19, 2012.*

Festić, M., Repina, S., & Kavkler, A. (2009). The Up-Coming Crisis and the Banking Sector in the Baltic States*. Swiss Journal of Economics and Statistics, 145*, 269-291.

Fisher, I. (1930). The Theory of Interest. Macmillan; New York.

Fofack, H., 2005. Non-Performing Loans in sub-Saharan Africa: Causal Analysis and Macroeconomic Implications. *World Bank Policy Research Working Paper No. 3769, 134-154.*

For Microfinance in Latin America and the Caribbean.*, IDB Working Paper 177, Inter-American Development Bank,*

George O (2013). The effect of interest rate spread on the financial performance of SACCOs in Kenya. Unpublished MBA Project. University of Nairobi.

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The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

Ghana Banking Survey.(2014). *The Future of Banking in Ghana. What's next?*PWC, Accra.

Hair, E.Jr., Black, W. C., Babin, B.J., Anderson,R. E.,&Tatham,R.L.(2006). Multivariate data analysis (6thed,).New York:Macmillan

Heng Khan, W. A., & Sattar, A. (2015). Impact of Interest Rate Changes on the Profitability of four Major Commercial Banks in Pakistan. *International Journal of Accounting and Financial Reporting, 4(1), 142.*

Hoggarth, G., Sorensen, S., and Zicchino, L., (2005). Stress tests of UK banks using a VAR approach. *Bank of England Quarterly Bulletin,* 45(4): 478.

Irungu P (2013). The effect of interest rate spread on Kenya commercial banks financial performance. Unpublished MBA Project. University of Nairobi.

Keeton, W. R., & Morris, C. S. (1987). Why Do Banks7 Loan Losses Differ? *Economic Review*, 3-21

Keynes, J.M. (1933). A Tract on Monetary Reform, London, Macmillan.

Kimani J. (2013). *Assessment of Effects of Monetary Policies on Lending Behaviour of Commercial Banks in Kenya. Unpublished MBA thesis;* Kenyatta University.

Kothari, C.R., (2008). Research Methodology: Methods and Techniques, New Age International Publishers

Kregel, J.A. (1985). Hamlet without the Prince: Cambridge Macroeconomics without Money. *American Economic Review* 75(2): 133–139.

Lexicon,N (2018). Banking Sector Interest Rate Spread in Kenya. Macroeconomic and Economicetric Modeling. Kenya Institute for Public Policy Research and Analysis (KIPPRA) Discussion Paper No 5, 6-8

Liu G. and Sceiso N. E. (2009). Business Cycle and Bank Capital Regulations: Base II Procyclicality. *Stellenbosch Economic* Working Papers No. 18/11.

Louzis, D. P., Vouldis, A. T., and Metaxas, V. L. (2011). Macroeconomic and bank-specific determinants of nonperforming loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking & Finance*.3 (5)

Mambo Samuel and Gallegos Claudia (2014). "Interest Rate Caps around the World" Policy Research Working Paper 7070.

Mangeli, 2012) Determinants of Commercial Bank Interest Margins and Profitability: *Some International Evidence*. World Bank Policy Research Working Papers.

Matemilola B.T. (2014). *The Impact of Monetary Policy on Bank Lending Rate in South Africa*. University Of Malya, Malaysia.

McNulty, J., Akhigbe, A., & Verbrugge, J., 2001. Small bank loan quality in a deregulated Environment: The Information Advantage Hypothesis. *Journal of Economics and Business*, 53, 325-339.

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The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

Mohammad, M. S. (2008). Non-performing loans in Bangladesh MFI sector: some issues and observations. John Wiley & Son (Asia) Pte Ltd.

Mugenda, O. M., &Mugenda, A. G.((1999), Research design and Methodology, Acts Press, Nairobi.

Mugenda, O. M., &Mugenda, A. G.((2003), Research design and Methodology, Acts Press, Nairobi.

Mwega, L.G., (2000). The structure-performance relationship for banking. *Journal of Banking and Finance 20, 745-771.*

Ngugi, R.W., 2001. An Empirical Analysis of Interest Rate Spread in Kenya. *African Economic Research Consortium, Research Paper* 106.

Oni O. A, Oladele, O. I, Oyewole, I. K. (2015). Analysis of Factors Influencing Loan Default among Poultry Farmers in Ogun State Nigeria, *Journal of Central European Agriculture*, **6** (4): 619-624.

Onyekachi V and Eze O.R. (2013).Effect of Bank Lending Rate on the Performance of Nigerian Deposit Monetary Banks. *International Journal of Business and Management Review,* 1, 1, 34-43.

Salas, V., and Saurina, J., (2006). Determinants of Collateral. *Journal of Financial Economics, Vol. 81 (2006), P. 255-281.*

Saunders, M., Lewis, P. & Thornhill, A. (2012). Research methods for business students (6th ed.). Harlow: Pearson.

Siddiqui M. A. and Shoaib A. (2011). Measuring performance through capital structure: Evidence from banking sector of Pakistan. *African Journal of Business Management,* 5(1): 1871-1879.

Steven O. (2011). *Credit Supply and Monetary Policy: Identifying the Bank Balance Sheet Channel with Loan Applications*. Tilburg University.

Sufian F. and Chong R. R. (2008). Determinants of bank profitability in developing economy: Empirical evidence from the Philippines.*Asian Academy of Management Journal of accounting and finance*, 4(1): 91–112.

Swarnapali, R.M.N.C. (2014). Firm Specific Determinants and Financial Performance of Licensed Commercial Banks in Sri Lanka, Proceedings of the 3rd International Conference on Management and Economics, *26-27 February 2014, Faculty of Management and Finance, University of Ruhuna.*

Upal, (2015), Priority sector advances: Trends, issues and strategies. *Journal of Accounting and Taxation, Vol. 1 (5), P.079-089*

Wambua, C (2014), Determinants of Commercial Bank Interest Margins and Profitability. *Journal of Business Management, 5(1): 181-189.*

Washington D.C.Chirwa E. W & Mlachila, M. (2004). Financial Reforms and Interest Rate Spreads in the Commercial Banking System in Malawi, IMF Staff Papers, 51(1),

Waweru, N.M., & Kalani, V.M., 2009. Commercial Banking Crises in Kenya: Causes and Remedies. *Global Journal of Finance and Banking Issues, 3(3), pp 67*

Whitfield, J. (2011). Determinants of Bank Lending Performance in Germany. Schmalenbach

Zeng, S. (2012). Bank non-performing loans (NPLS): *A dynamic model and analysis in China. http://dx.doi.org/10.4236/me.2012.31014*

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The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com