EFFECT OF SELECTED MACROECONOMIC VARIABLES ON LENDING RATES AMONG COMMERCIAL BANKS IN KENYA

Maubi Andrew Mokaya
PhD fellow of finance at Kenyatta University, Kenya
Corresponding Author: andrew.maubi@yahoo.com

Ambrose O. Jagongo
Senior Lecturer, department of Accounting and Finance, Kenyatta University, Kenya

Rosemary M. James
Lecturer, department of Management Science, Kenyatta University, Kenya


ABSTRACT
This study sought to investigate the effect of macroeconomic variables on lending rates among commercial banks in Kenya. Specifically the study sought to; establish the effect of Gross Domestic Product growth rate and inflation rate on lending rates among commercial banks in Kenya. The study also sought to determine the moderation effect of political risk on the relationship between macroeconomic variables and lending rates among commercial banks in Kenya. Explanatory non-experimental research design was employed. The target population was thirty-nine (39) commercial banks from whom secondary data was collected by way of census since these are the banks from which complete information could be obtained for meaningful analysis for the study period 2006-2015. Descriptive Statistics including Mean, Standard deviation, inferential statistics (Panel regression analysis and Correlation analysis) were carried out. Data analysis was run on the Stata 13 package and findings presented in figures, tables, graphs and charts while deriving conclusions and recommendations from the findings of the study. The finding revealed that GDP growth rate and inflation had positive and significant effects on lending rates. However, the effect of GDP growth rate was found to be negative. Political risk was found to have insignificant moderating effect on the relationship between macroeconomic variables and lending rates among commercial banks in Kenya. Based on the findings, the study concluded that macroeconomic variables play a significant role in determining the lending rates of commercial banks. The study recommends that government should pay attention to macroeconomic factors while controlling the domestic lending rates. Policy initiatives that wish to keep the lending rates at a low level should also take into consideration the need to enhance economic growth and reduce inflation.

Keywords: Gross Domestic Product growth rate, inflation rate, lending rates, banks.
1.1 Background of the Study

According to Mutinda (2014), economic activities enhances trade and hence the demand for loan facilities. When the demand for credit increases, lending rates are likely to increase. On the flip side increased in economic activities could results to higher profitable projects, lower loan default and increase in the amount of deposits all of which will led to a significant drop in the average lending rates among commercial banks. Literature indicates that GDP and Inflation are the relevant macroeconomic variables for the financial sector (Maina, 2015; Uzeru, 2012; Demirguc-Kunt & Huizinga, 2011 and Were & Wambua, 2014). In view of Demirguc-Kunt and Huizinga (2011), each loan and prospective borrower has their own characteristics that may necessitate different lending rates conforming to the economic situations of a nation in which the loan is offered. For example, customer credit worthiness may determine the loan rate they are charged by financial institutions, other include previous relationship the lending institution, the period of maturity of the loan, the non-fee services provided by the bank in maintaining the loan, the use of fixed or flexible maturities and rates, and maturities factors. According to Beck et al., (2010), cost of funding are significantly used by commercial banks as a basis for determining the lending rate charged on a loan by adding the inflation levels in the country and the general economic performance as indicated by the gross domestic product while also considering the risk profile of the customer. Attributes that are mostly adopted to measure the credit risk profile of a borrower include creditworthiness, repayment ability, the period of repayment of the loan, type and amount borrowed, value of the collateral provided, market concentration risk and a number of other products offered to the client.

Janda and Zetek (2014) sought to identify the macroeconomic variables that affect lending rates in America and identified these factors as being Inflation, GDP growth rate and the unemployment rate. This is an extension from Georgievsksa et al., (2010), who only identify inflation and GDP Growth rate as being the factors influencing lending interest rates in Macedonia. Were and Wambua (2014) do not only indicate that lending rates have been a menace especially in the SSA nations, but also identify inflation rate and GDP growth rate as being the factors influencing lending rates among banks in Kenya. Tests on the effect of the exchange rate by Were and Wambua (2014) showed that although the exchange rate influences lending rates, the effect is insignificant. The studies assume direct relationships and concentrated on interest rate spread while the current study sought to find the moderating effect of political risk on the association between characteristics of banks, macroeconomic variables and lending rates among banks in Kenya and deal with the relationship with lending rates. Whereas Were and Wambua (2014) find a positive relationship between inflation and lending rates and a negative association between GDP and lending rates, Janda and Zetek (2014) and Georgievsksa et al., (2010) find a positive association between GDP and lending rates and a negative one between inflation and lending rates. Various tests on the effect of GDP and inflation on lending rates from the foregoing literature have shown conflicting findings hence the choice of GDP and Inflation by this study.

1.2 Statement of the Problem

Lending rates are a key determinant of a country’s economic growth (Mutinda, 2014). According to Kamaan and Nyamongo (2014), investments are financed through borrowing and if the lending rates are higher than the hurdle rate (required rate of return), then the investments would not grow since the returns are used up in repayment of loans and little,
if any, remains for re-investment hence having a counter-productive effect on the economy. However, Commercial banks in Kenya still charge high lending rates (Were & Wambua, 2014; KNBS, 2015). The trend in the financial market in Kenya indicates a static slow response of the lending rates to changes in the CBR which is a prerequisite to the KBRR (Appendix II). Mbotu (2010) states that the lending rates in Kenya were so high in the year 2010 that members of the Kenya National Assembly discussed financial bill to cap lending rates despite liberalization. The national assembly of Kenya enacted the banking amendment Act (2015) to cap the commercial bank lending rates at not more than 4% above the CBR. However, this enactment has not offered a solution to the problem of lending rates since the rates still remain high compared to lending rates of most countries in Africa. There are examples of countries in Africa whose lending rates have had a downward trend without applying the law like Zambia, Namibia and Botswana. Given the high lending rates and the slow response of the lending rates to changes in the KBRR, the emerging question therefore is what determines the lending rates.

Scanty documented uniform information exists that analyzes the determinants of lending rates whereas studies reviewed give inconsistent results. For instance; Gambacorta and Mistrulli (2014); Ikhide (2009) and Folawewol and Tennant (2008) found that bank characteristics (Bank Size, Operating costs, liquidity risk and credit risk) and macroeconomic variables are positively related with lending rates. However these studies assume direct relationships and concentrate on interest rate spread. Nampewo (2013); Entrop et al., (2012); Bennaceur and Goeaie (2008); Aboagye et al., (2008) indicate that bank characteristics (Bank Size, Operating costs, Liquidity risk and credit risk) and macroeconomic factors are negatively related with lending rates again on a linear perspective and concentrate on interest rate spread. The study investigated the effect of bank characteristics and macroeconomic variables on lending rates among commercial banks in Kenya.

1.4 Empirical Literature Review

Krnic’ (2014) studies determinants of lending rates granted to companies in Croatia and considers macroeconomic variables (GDP Growth rate, inflation, public debt level in GDP%, T-Bill rate). The study finds that inflation, T-Bill rate are strongly positively related to lending rates among commercial banks. However, the study finds no significant effect between public debt and GDP growth rate on lending rates. The study assumes direct relationship and is carried out in a developed nation. Current study sought to find out establish the moderating role of political risk on the association between macroeconomic variables (GDP and Inflation) on lending rates in Kenya, a developing nation. The T-bill rate is left out since in determination of industry condition (KBRR), the TB rate is considered together with the CBR in Kenya. Ngigi (2014) while studying determinants of lending lending rates in deposit taking MFIs in Kenya report that macroeconomic variables (GDP growth rate and Inflation) have a negative relationship with lending rates while the foreign exchange rate had a positive relationship with lending rates. The study assumes direct relationship and is carried out in the context of MFIs whose regulations and conditions of business are different from commercial banks. Current study sought to establish the moderating role of political risk on lending rates and is carried out on commercial banks. The industry characteristics (KBRR and completion) were assessed as control variables with a view to investigate the connection between macro variables and lending rates among commercial banks in Kenya. Janda and Zetek (2014) and Georgievksa et al., (2010) find a positive relationship between GDP and lending rates and a negative one between inflation and lending rates, the studies assumes direct relationships and are
carried out in developed nations. Current study evaluated the moderating role of political risk on lending rates among commercial banks in Kenya, a developing nation.

1.5 Research Design and Methodology

Explanatory non-experimental research design was adopted that sought to determine the effect of the selected macroeconomic variables on lending rates. This design was appropriate since the purpose of the study was to describe and explain characteristics of certain groups (Were & Wambua, 2014). The target population for this study comprised of forty three (43) commercial banks in Kenya. According to the CBK (2015), there were 43 commercial banks in Kenya as at 31st December 2015. However, only thirty nine (39) Commercial banks were studied due to the fact that four (4) of those banks were under statutory management which restricted the availability of data. The study used document review guide in collecting quantitative data from the thirty nine (39) commercial banks for analysis. The general Empirical model was specified as follows:

\[ CBLR_{it} = \alpha_i + X_{it} \beta_i + Y_{it} \beta + \varepsilon_{it} \quad \ldots \quad \ldots \quad \ldots \quad (1) \]

Where \( CBLR_{it} \) is the Commercial Banks’ Lending Rate for bank \( i \) at time period \( t \), as given by the published information, \( \alpha_i \) is the bank specific fixed effects capturing the impact of unobservable effects, \( Y_{it} \) is a vector of the macroeconomic factors, \( \varepsilon_{it} \) is the statistical disturbance term (error term) and \( \beta \) is the statistical estimate. Equation 3.1 above shall be expanded to obtain equation 3.2 which shall be used for estimation.

\[ CBLR_{it} = \beta_0 + \beta_5 GDP_{it} + \beta_6 I_{it} + \varepsilon_{it} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2) \]

Where:

- \( \beta_{it} \) Is a vector of coefficients to be estimated.
- \( GDP \)- Gross Domestic Product growth rate,
- \( I \)- Inflation rate,

The study sought to test the following null hypotheses:

- \( H_{01} \): Gross Domestic Product growth rate does not have a significant effect on lending rates among commercial banks in Kenya.

- \( H_{02} \): Inflation rate does not have a significant effect on lending rates among commercial banks in Kenya.

1.6 Diagnostic Tests

It was necessary that before any attempt is made for estimation, testing to ensure non-violation of the Classical Linear regression model (CLRM) assumptions. If this was not assured, then the parameter estimates stood the risk of being biased, inefficient and inconsistent (Gujarati, 2003). It is therefore necessary to carry out the following tests to ensure proper estimation: Normality, Heteroscedasticity, Multicollinearity, and Autocorrelation and panel unit root test.
1.7 Results and Discussions

1.7.1 Descriptive Results

Descriptive analysis for the study variables was conducted to find out the mean, standard deviation, minimum and maximum values.

Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending Rates</td>
<td>333</td>
<td>0.217087</td>
<td>0.049305</td>
<td>0.06</td>
<td>0.33</td>
</tr>
<tr>
<td>Inflation</td>
<td>420</td>
<td>8.517</td>
<td>3.46155</td>
<td>2.1</td>
<td>15.2</td>
</tr>
<tr>
<td>GDP Growth Rates</td>
<td>420</td>
<td>4.992</td>
<td>2.134156</td>
<td>0.2</td>
<td>8.4</td>
</tr>
</tbody>
</table>

The finding showed that lending rates had a mean of 21.7 percent between 2007 and 2015. The minimum and maximum values for lending rates were 6 percent and 33 percent. This was an indication that the lending rates in Kenya have been very high leading to deprived financial access by many sectors of the economy. According to Njiru, (2014), Kenya has a biggest problem in terms of ever increasing lending rates which has constantly kept the cost of borrowing very high. Higher cost of borrowing has a detrimental effect on effects on investments since it discourages investor from borrowing. The availability of the affordable loans in the market ensures increase in investment and consumption which further lead to increase in the standard of living and generally economic development. Inflation and GDP growth rate had a mean of 8.517 and 4.992 respectively. The annual average for political risk within the study period was 67.3. The findings further showed that the average market share of commercial banks in Kenya was 2.38 percent, the minimum and maximum values for market share were 0.0383 and 16.6 percent. High volatility in inflation and GDP is an indication of unstable growth which common in most developing countries especially in Africa.

1.7.2 Trend Analysis

The study employed trend analysis to monitor changes in parameters over study period. The study analysed trend for bank characteristics to the significant changes that occurred within the study period. The annual means were computed for all the variables and trend analysis.

1.7.3 Trend Analysis of Lending Rates

The trend analysis for lending rates revealed that lending rates were volatile during the period of this study. The analysis indicates that lending rates were highest in 2006 and lowest in 2008. The results further showed that lending rates have been increasing steadily from 2006 to 2015. The banks rates on lending and deposit dropped slowly but surely reflecting better liquidity conditions in line with the monetary policy. Average lending rates decreased from 26.0 percent in 2006 to below 21 percent percentage in 2015.
The study further sought to analyse the trend in gross domestic product growth rate. The economic growth of a country is very crucial in development of many sectors banking sector included. Therefore, it is theorized that an improved economy leads to reduction in lending rates. The results showed that the gross domestic product growth rate has been very volatile with a maximum value of around 9 percent experienced in the year 2010 to the lowest growth rate of below 1% experienced in 2008 immediately after Kenya had experience one of the worst post-election violence. The Kenya growth rate dropped in 2011 to 2012 and has almost remained constant from 2013 to date. This could be attributed to vigorous economic activities currently underway in Kenya which include massive infrastructure development. According to Mutinda (2014), economic activities enhances trade and hence the demand for loan facilities. When the demand for credit increases, lending rates are likely to increase. On the flip side increased in economic activities could results to higher profitable projects, lower loan default and increase in the amount of deposits all of which will led to a significant drop in the average lending rates among commercial banks. Literature indicates that GDP and Inflation are the relevant macroeconomic variables for the financial sector (Maina, 2015; Uzeru, 2012; Demirguc-Kunt & Huizinga, 2011 and Were & Wambua, 2014).

Figure 1: Trend Analysis of Lending Rates

1.7.4 Trend Analysis of Gross Domestic Product Growth Rate

The study further sought to analyse the trend in gross domestic product growth rate. The economic growth of a country is very crucial in development of many sectors banking sector included. Therefore, it is theorized that an improved economy leads to reduction in lending rates. The results showed that the gross domestic product growth rate has been very volatile with a maximum value of around 9 percent experienced in the year 2010 to the lowest growth rate of below 1% experienced in 2008 immediately after Kenya had experience one of the worst post-election violence. The Kenya growth rate dropped in 2011 to 2012 and has almost remained constant from 2013 to date. This could be attributed to vigorous economic activities currently underway in Kenya which include massive infrastructure development. According to Mutinda (2014), economic activities enhances trade and hence the demand for loan facilities. When the demand for credit increases, lending rates are likely to increase. On the flip side increased in economic activities could results to higher profitable projects, lower loan default and increase in the amount of deposits all of which will led to a significant drop in the average lending rates among commercial banks. Literature indicates that GDP and Inflation are the relevant macroeconomic variables for the financial sector (Maina, 2015; Uzeru, 2012; Demirguc-Kunt & Huizinga, 2011 and Were & Wambua, 2014).
Figure 2: Trend Analysis of Gross Domestic Product Growth Rate

Trend Analysis of Inflation

Figure 3: Trend Analysis of Inflation

Inflation is another macro-economic factor that is heavily perceived to influence the banking sector and lending rates in particular. Analysis in the trend of inflation of Kenya from 2006 to 2015 showed high volatility. From being as low as 6% in 2006 to as high as 15% in the year 2008 which also coincided with the worst post-election violence experienced in this Country. Inflation however dropped to its lowest in 2010 which the country experienced it’s heaviest ever growth rate. The year 2011 further saw a rise in inflation to about 10% followed by a slight drop in 2012 and 2013. High volatility in inflation is an indication of unstable growth which common in most developing countries especially in Africa. According to Janda and Zetek (2014) who sought to identify the macroeconomic variables that affect lending rates in America and identified these factors
as being Inflation, GDP growth rate and the unemployment rate. This is an extension from Georgievskae et al., (2010), who only identify inflation and GDP Growth rate as being the factors influencing lending interest rates in Macedonia. Were and Wambua (2014) do not only indicate that lending rates have been a menace especially in the SSA nations, but also identify inflation rate and GDP growth rate as being the factors influencing lending rates among banks in Kenya. Tests on the effect of the exchange rate by Were and Wambua showed that although the exchange rate influences lending rates, the effect is insignificant.

1.8 Diagnostic Tests Results

To ensure adhere to the assumption the study conducted the following diagnostic tests; normality/ linearity test, test for heteroskedasticity, test for serial autocorrelation, stationarity test and multicollinearity test for all the study variables. It has been observed that few articles report to have tested the assumptions of the test they used in deriving their conclusions (Osborne, Christensen & Gunter (2001).

1.8.1 Normality Test

The normality test was conducted using the Jarque-Bera (JB) and normality graph. The graphical methods results showed that residual were normally distributed as shown in figure 4.10. However, the study used a more efficient and conclusive technique known Jarque-Bera (JB) to further ascertain the normality of the residuals. The study failed to reject the null hypothesis since the probability value for Jarque-Bera was greater than 5% and it was therefore concluded that the residual takes normal distribution curve. This implied that data was adequate and met the assumption of linearity.

![Figure 6: Normality Test](image)

1.8.2 Heteroskedasticity

Regression analysis assumption requires that the residuals should have a constant variance (i.e. they should be Homoskedastic). The Modified Wald test was used to test for Heteroskedasticity where the null hypothesis of the test is that error terms have a constant variance (i.e. should be Homoskedastic). The null hypothesis was not rejected given that the reported p-value 0.000 in table 4.2 was less than the critical value and thus concluded that the observations have constant variance or do not have the problem of Heteroskedasticity.
Table 2: Heteroskedasticity Test Results

Modified Wald test for group wise heteroskedasticity

<table>
<thead>
<tr>
<th>chi2 (42)</th>
<th>Prob&gt;chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1e+32</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

1.8.3 Multicollinearity

In multiple regression, the variance inflation factor (VIF) is used as an indicator of multicollinearity. This study adopted a rule of thumb of VIF value of 10 as the threshold which according to Garson (2012) is the best. These results indicate that the VIF values of the independent variables were within the threshold of 10. This indicated that that there was no threat of multicollinearity problem and therefore, the study used linear regression model. The tolerance of less than 0.1 also indicates the problem of multicollinearity therefore the tolerance values for the study variables further confirmed that there was no threat of multicollinearity problem.

Table 3: Multicollinearity Test Results

<table>
<thead>
<tr>
<th>(Constant)</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>0.398</td>
<td>3.051</td>
</tr>
<tr>
<td>GDP</td>
<td>0.399</td>
<td>3.029</td>
</tr>
</tbody>
</table>

Dependent Variable: lending rates (%)

1.8.4 Autocorrelation

The study further carried out the test for serial autocorrelation to establish whether the residuals were correlated across time. The assumptions of the regression demands that the residual should not be correlated across time. The study employed Wooldridge test for autocorrelation to test this assumption. The study sought to test the null hypothesis that no first order serial correlation existed. From the finding presented in table 4, the study concluded that there was no serial correlation of first order since the p-value (p-value=0.2937) was greater than 0.05 leading to the study to reject failed to reject the null hypothesis. The results indicated that the data adhere to the assumption of residual not being correlated across time hence adequate for panel regression analysis.

Table 4: Serial Correlation Tests Results

Serial Correlation Tests

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
F(1,38) = 1.134
Prob > F = 0.2937
1.8.5 Panel Unit Root Test

The study employed ADF test to establish whether the variables were stationary or non-stationary. Non-stationary variables also lead to spurious results because of the presence of unit root. The result presented in table 5 indicated that the probability value for all the variables was greater than 5% implying that there was a unit root. Therefore, the study failed to reject the null hypothesis at level for all the study variables. This called for first differencing for all the study variables to make all the non-stationary variables stationary and the results are presented in table 6.

Table 5: Panel Unit Root Test Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF-Statistics</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending Rates</td>
<td>48.6148</td>
<td>0.9978</td>
</tr>
<tr>
<td>Inflation</td>
<td>82.4762</td>
<td>0.5266</td>
</tr>
<tr>
<td>GDP</td>
<td>85.3211</td>
<td>0.4393</td>
</tr>
</tbody>
</table>

Table 6 displays the panel unit root tests after first differencing. It is clear from the results in that all the variables become stationary (unit root disappears) on first differencing since there p value was less than 0.05 meaning that the null hypothesis that there is a unit root was rejected.

Table 6: Panel Unit Root Test Results at First Difference

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF-Statistics</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending Rates</td>
<td>410.901</td>
<td>0.000</td>
</tr>
<tr>
<td>Inflation</td>
<td>773.669</td>
<td>0.000</td>
</tr>
<tr>
<td>GDP</td>
<td>734.249</td>
<td>0.000</td>
</tr>
</tbody>
</table>

1.8.6 Hausman Test for Model Specification

Hausman specification test was used by the study to select the best regression model between a random effect and a fixed effect regression model. The null hypothesis for Hausman test states that the difference between the coefficients is not consistent meaning that a random effect model is the best while the alternative hypothesis states that the differences are consistent implying that a fixed effect model is the best. Results in the table 7 indicated a prob>\chi^2 value of 0.4293 which is greater than critical P value at 5% level of significance which implies that the null hypothesis that a random effect model is the best was not rejected. The study hence used a random effect regression model.

Table 7: Hausman Test for Model Specification Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed</th>
<th>Random</th>
<th>Difference</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>-0.00084</td>
<td>-0.00044</td>
<td>-0.0004</td>
<td>0.000116</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.00145</td>
<td>-0.00203</td>
<td>0.00058</td>
<td>0.000186</td>
</tr>
</tbody>
</table>

\chi^2(9) = 5.95
Prob>\chi^2 = 0.4293
The study further employed Breusch and Pagan Lagrange multiplier test to choose between the RE model and the pooled regression model. The null hypothesis was assumed to be that the variance across banks is equal to zero; that is, there are no panel effects. The result showed that the p-value was less than 0.05 meaning that the study rejected the null hypothesis thus conclusion that there are panel effects which led to RE model.

Table 8: Breusch and Pagan Lagrange Multiplier Test

<table>
<thead>
<tr>
<th>Breusch and Pagan Lagrangian multiplier test for random effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>chibar2(01) = 32.31</td>
</tr>
<tr>
<td>Prob &gt; chibar2 = 0.0000</td>
</tr>
</tbody>
</table>

1.8.7 Correlation Matrix

The study further used correlation analysis to test the association between independent variables and dependent variable. The results indicated that GDP growth rate and inflation rates had a significant association with lending rates as shown in Table 9

Table 9: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>Lending rates</th>
<th>Inflation rate</th>
<th>GDP growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending Rates</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>0.3238</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GDP Growth rate</td>
<td>-0.3711</td>
<td>-0.605</td>
<td>1</td>
</tr>
</tbody>
</table>

1.9 Regression analysis results

This study further intended to find out the relationship between macro-economic factors and commercial banks’ lending rates. The macro-economic factors considered were gross domestic product growth rate and inflation rates. The results obtained indicated that jointly gross domestic product growth rate and inflation rates accounted for 6.11 percent of the variation in lending rates among commercial banks in Kenya. This model was also statistically significant as shown by Wald chi-square value = 44.49 and p value of 0.000.

Table 10: Regression for Macroeconomic Factors and Lending Rates

| Lending Rates     | Coef.    | Std. Err. | z       | P>|z|  |
|-------------------|----------|-----------|---------|------|
| GDP Growth Rate   | -0.0041935| 0.0014165 | -2.96   | 0.003|
| Inflation         | 0.002235  | 0.0007877 | 2.84    | 0.005|
| _cons             | 0.2227368 | 0.0135167 | 16.48   | 0.000|
From the result GDP growth rate was found to be negatively related to commercial banks’ lending rates among in Kenya. The results implied that an increase in the GDP growth rate would lead to a corresponding reduction in lending rates. GDP growth rate had a regression coefficient of -0.00419 which implied that a unit increase in GDP growth rate would result in a reduction of 0.00419 units in lending rates. This relationship was further found to be statistically significant since the p-value for GDP growth rate was 0.003 which was lower than the adopted significance level of 0.05. The study rejected the null hypothesis that Gross Domestic Product growth rate does not have a significant effect on lending rates among commercial banks in Kenya which implied that Gross Domestic Product growth rate had a significant relationship with lending rates among commercial banks in Kenya. The study finding were concurred with Ngigi (2014) who studied determinants of lending rates in deposit taking MFIs in Kenya and reported that macroeconomic variables (GDP growth rate and Inflation) have a negative relationship with lending rates. However, Janda and Zetek (2014) and Georgievska et al., (2010) find a positive relationship between GDP and lending rates. Similarly, results of this study contradicted those of Ahokpossi (2013) who found that economic growth is not significantly related to lending rates. The classical theory of lending rates supports the macroeconomic variables like the GDP which determines the general wellbeing of citizens of Kenya. It also explains estimation of the per capita income as well as the general price levels of products and services which in turn determine the level of savings and investments available in the Kenyan economy, the study context.

The study finding were concurred with Ngigi (2014) who studied determinants of lending rates in deposit taking MFIs in Kenya and reported that macroeconomic variables (GDP growth rate and Inflation) have a negative relationship with lending rates. However, Janda and Zetek (2014) and Georgievska et al., (2010) find a positive relationship between GDP and lending rates. Similarly, results of this study contradicted those of Ahokpossi (2013) who found that economic growth is not significantly related to lending rates. Beck and Hesse (2006) also analysed the bank level dataset of the Ugandan banking sector and assessed some of the factors that led to high lending rates and margins. The author observed that lower lending rates had no economically and significant association between interest rates and privatization banking efficiency, foreign bank entry and market structure. The study also found little connection between macroeconomic variables and interest rates spreads. On the other hand, bank characteristics played a significant role in interest rates spread. Bank characteristics include bank size, costs and loan portfolio which explained large proportion of variations. The study however analyzes the bank level characteristics as standalone variables with their effect on lending rates whereas the current study computes a composite of these variables while testing for moderation. The findings of this study are consistent with Folawewol and Tennant(2008) who showed that lending rates are influenced by crowding out effect of government borrowing, public sector deficits, discount rate and inflation rates. This finding further concurs with fisher theory which states that changes in the short term lending rates occur principally because of the changes in expected rate of inflation.
The findings further revealed that inflation rates were positively and significantly related to lending rates among commercial banks. Inflation had coefficient of 0.002235 which implied that a unit increase in inflation rates would result to an increase of 0.002235 units in lending rates. This relationship was further found to be statistically significant since the p-value for Inflation growth rate was 0.005 which was lower than the adopted significance level of 0.05. The study rejected the null hypothesis that Inflation does not have a significant effect on lending rates among commercial banks in Kenya which implied that Inflation had a significant relationship with lending rates among commercial banks in Kenya. In view of Demirguc-Kunt and Huizinga (2011), each loan and prospective borrower has their own characteristics that may necessitate different lending rates conforming to the economic situations of a nation in which the loan is offered. The finding are consistent with Folawewol and Tennant(2008) who showed that lending rates are influenced by crowding out effect of government borrowing, public sector deficits, discount rate and inflation rates. this findings further concurs with fisher theory which states that changes in the short term lending rates occur principally because of the changes in expected rate of inflation.

The study finding were concurred with Ngigi (2014) who studied determinants of lending rates in deposit taking MFIs in Kenya and reported that macroeconomic variables (GDP growth rate and Inflation) have a negative relationship with lending rates. However, Janda and Zetek (2014) and Georgievska et al., (2010) find a positive relationship between GDP and lending rates. Similarly, results of this study contradicted those of Ahokpossi (2013) who found that economic growth is not significantly related to lending rates. Beck and Hesse (2006) also analysed the bank level dataset of the Ugandan banking sector and assessed some of the factors that led to high lending rates and margins. The author observed that lower lending rates had no economically and significant association between interest rates and privatization banking efficiency, foreign bank entry and market structure. The study also found little connection between macroeconomic variables and interest rates spreads. On the other hand, bank characteristics played a significant role in interest rates spread. Bank characteristics include bank size, costs and loan portfolio which explained large proportion of variations. The study however analyzes the bank level characteristics as standalone variables with their effect on lending rates whereas the current study computes a composite of these variables while testing for moderation.The findings of this study are consistent with Folawewol and Tennant (2008) who showed that lending rates are influenced by crowding out effect of government borrowing, public sector deficits, discount rate and inflation rates. This finding further concurs with fisher theory which states that changes in the short term lending rates occur principally because of the changes in expected rate of inflation. According to Janda and Zetek (2014) who sought to identify the macroeconomic variables that affect lending rates in America and identified these factors as being Inflation, GDP growth rate and the unemployment rate. This is an extension from Georgievska et al., (2010), who only identify inflation and GDP Growth rate as being the factors influencing lending interest rates in Macedonia. Were and Wambua (2014) do not only indicate that lending rates have been a menace especially in the SSA nations, but also identify inflation rate and GDP growth rate as being the factors influencing lending rates among banks in Kenya. Tests on the effect of the exchange rate by Were and Wambua showed that although the exchange rate influences lending rates, the effect is insignificant.

1.10 Conclusion and recommendations

The results obtained indicated that jointly gross domestic product growth rate and inflation rates accounted for 6.11 percent of the variation in lending rates among commercial banks
in Kenya. The study concluded that GDP growth rates and inflation have a role in commercial bank lending rates. However, their impact could be made insignificant through sound and effectively banks internal policy and intervention measures initiated by the central bank. The study further concluded that economic growth as measured by GDP growth rate and inflation determines the demands for loans from commercial banks which influences the changes in lending rates. For instance a growth in GDP implies a growing economy hence increased in economic activities which further imply high demand for loans. High demand for loans will lead to increase in lending rates as posited by loanable fund theory.

The study recommends that commercial banks should work closely with policy makers and other government institutions such as the treasury and CBK to come with policies that will cushion banks from loses during worse economic times to ensure that they don’t increase lending rates. This will enable commercial banks to maintain a constant lending despite changes in macro-economic variables. Since inflation rate varies inversely with GDP (aggregate output), the study recommended that the government should aim at reducing the rate of inflation in Kenya so that the lending rates can decrease which enhances economic growth. The study revealed that an increase in inflation rate negatively affects lending rates in the country.

References


