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The Effect of Lending Rates on Economic Growth In Kenya.

Evans Okisai, *PhD Student, School of Business and Economics, Moi University, Kenya*

Saina K. Ernest *PhD, School of Business and Economics, Moi University, Kenya,*

Siele Richard Kiplangat *PhD, School of Business and Economics, Moi University, Kenya'*
Corresponding author: Evans Okisai

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ABSTRACT
Kenya targets a growth rate of an average of 10 percent per annum by 2030. However, the country's economic growth rate since 2009 has been an average of 4.9 percent with the current being 7.52 percent. Hence, achieving this growth target is ambitious considering that the country faced challenges such as COVID-19, drought and famine. This study therefore examined the significance of lending rates in stimulating real output within the economy over the period under study. The main objective of study was to assess the effect of lending interest rate on economic growth in Kenya. The study adopted explanatory research design that is quantitative. The study was guided by neoclassical endogenous growth theory. The major sources of data were national accounts data from the Kenya National Bureau of Statistics (KNBS) Economic Surveys, Statistical Abstracts and International Financial Statistics (IFS) site for the period 1990-2021. The study used a vector error correction model. The variables were first tested for unit root thereafter Johansen cointegration Technique was used to test the long run relationship of the variables. The study found that there were unit roots at levels but became stationary after first difference. All the assumptions of linear regression were tested and the data was found to follow normal distribution, no collinear relationship among the independent variables, data was homoscedastic and also no serial correlation found. Results showed the lending rates had long run effects on the economic growth. Specifically, lending interest rate (β=-0.063, $p<0.05$) have a negative and significant long run relationship on economic growth in Kenya. The study concludes the central bank of Kenya may instill sound fiscal and monetary policies for regulating lending interest rate in curbing the level of inflation and money supply in the economy, hence generating economic growth.

Keywords: lending rate, economic growth, financial development, credit availability.

I. INTRODUCTION

Economic growth is the increase in the capacity of an economy to produce goods and services from one period of time. It occurs when the productive capacity of a country increases. As an aggregate measure of total economic production for a country, it represents the market value of all final goods and services including personal consumption, government purchases, private inventories, paid-in construction costs and the foreign trade balance. There are two main measures instituted and used to measure economic growth. The first is Gross national product (GNP) that computes the total value of goods and services produced by all nationals within and outside the country over a given period of time, usually one year, and the second is Gross Domestic Product (GDP) considered as the broadest indicator of economic output and growth. It is designed to measure the value of production of those activities that fall within the boundary of the national accounts system. GDP measures economic growth in monetary terms and looks at no other aspects of development. GDP can be expressed in nominal terms which include inflation or in real terms which are adjusted for inflation. Short term GDP is the annual percentage change in real national output. Long term GDP is the increase in trend or potential GDP. In order to compare countries of different population sizes, GDP per capita is generally used.

Other possible measures of economic growth include total factor productivity, factors of

production such as technological change, human capital termed the Schumpeterian approach, other measures of growth ranges from real per capita GDP and the rate of physical capital accumulation.

Lending rate is the cost of borrowing money or conversely the income earned from lending money measured by the commercial banks weighted average lending rate. The world's highest lending rate was recorded in Venezuela as 42.07 percent per annum updated daily for 27th December 2022, while the lowest was recorded in Japan as 1.475 percent per annum updated monthly for the month of December 2022. Kenya bank lending rate data is updated monthly, averaging 16.310 percent per annum from July 1991 to October 2022, with 376 observations. The rate was 13.390 percent per annum for the month of October 2022. The data reached an all-time high of 32.280 percent per annum in April 1994 and a record low of 11.750 percent per annum in September 2020. (CEIC data, 3rdJanuary, 2023).

To reduce the cost of credit and increase credit access and deposits in Kenya, the Banking (Amendment) Act, 2016 came into effect on September 14, 2016. It set the maximum lending rate at no more than four per cent above the Central Bank base rate; and the minimum interest rate granted on a deposit held in interest earning account to at least seventy per cent of the same rate. Emerging evidence show that commercial banks have adjusted their business models resulting in declining financial intermediation, directed their lending in favour of large corporate borrowers and Government thereby shunning small and risky borrowers, and reduced transparency. Although the banking sector remains resilient, evidence point towards reduced competition and decline in profitability. The impact on economic growth has also begun to show, though this may be realized in the long run. In March 2018, the Central Bank of Kenya indicated that the cap had probably cut 2017's estimated economic growth rate by 0.4 percent because it throttled credit to small and medium businesses. CBK (March 2018).

II. THEORETICAL LITERATURE REVIEW

The existence of a relationship between finance and growth seems incontestable as many researchers have worked on the issue and positively confirmed it. What is debatable is the direction of causality between finance and growth.

When causal relationship runs from financial development to growth, it is termed supply-leading because it is believed that the activities of the financial institution increase the supply of financial services which creates economic growth. Similarly, when the growth within the economy results in increase in the demand for financial services and this subsequently motivates financial development, then it is termed demand-following theory.

The research work by Swiston (2008) on the USA used a VAR containing two lags to construct a model with variables such as nominal interest rate, yield on investment grade corporate bonds with remaining maturity of five to ten years to capture long term interest rate, real GDP, oil prices, equity returns and real effective exchange rate made positive contribution in that direction. He posited that credit availability proxied by survey results on lending standards is an important driver of the business cycle, accounting for over 20 percent of the typical contribution of financial factors to growth. A net tightening in lending standards of 20 percent basis points reduces economic activity by 0.75 percent after one year and 1.25 percent after two years.

This study is anchored on the supply-leading following theory of the financial deepening–growth nexus. This theory contends that well-functioning financial institutions can promote overall economic efficiency, create and expand liquidity, mobilize savings, investment, enhance capital accumulation, transfer resources from traditional (non-growth) sectors to the more modern growth inducing sectors like Information, Communication Technology (ICT) and also promote a competent entrepreneur response in these modern sectors of the economy.

Empirical Literature Review

Maji&Achegbulu, (2012) between 1990 and 2018, conducted a research on the effects of lending interest rates on Nigeria's economic development. Secondary time series data from the Statistical Bulletin of the Central Bank of Nigeria were utilized in this study. The dependent variable for the study was Gross Domestic Product, which was used as a metric for economic growth, while the independent variables were Liquidity Ratio, Lending Interest Rate, Investment, Credit to the Core Private Sector, and Exchange Rate. To avoid disclosing spurious regression findings, the analysis used a unit root test, which indicated that all variables were incorporated at first difference level I(1), with the exception of the variable lending

interest rate, which was integrated of order zero and was stationary at level I(0). According to the findings of the study, interest rates and liquidity ratios have a negative and negligible effect on economic development. According to the study, the government and policymakers should focus on keeping interest rates low (if possible single digit) and stable. This would improve the liquidity ratio and allow investors to raise funds from banks to invest in the country.

Mutinda, (2014) aimed to establish the effect of lending interest rate on economic growth in Kenya and the empirical evidences that help answer the research objective. I collected data from the KNBS and from the Central bank of Kenya for a 10 year period starting 2003 to 2012 and the same was regressed quarterly to help answer the research question. The study established that there is a negative relationship between interest rate and the economic growth. Interest rate was not studied in isolation but there were other variables which were also studied, that is, budget deficit, inflation rate, exchange rate and gross investment whose effect to the economic growth was also established. Since lending interest has a strong bearing on economic growth, it's imperative that the government puts policies in place to check the interest rate. It's the same thing for the other variables which were also studied namely; budget deficit, inflation rate, exchange rate and gross investment.

Saeed, Ramzan& Hamid (2020) aimed at estimating the causal and dynamic relationship between the banking industry and economic growth of Pakistan. A panel data set of 24 banks was used for the period 2006–2016. Panel unit root, Panel cointegration, and Panel VECM tests were applied to analyze the data. The findings of the study revealed that lending capability, bank investments, and innovation have positive and statistically significant impacts on economic growth in short-run as well as in long-run dynamics. The presence of a long-run relationship indicated workable and bilateral policy measures in the banking industry, and short-run dynamics approach consistency in the recurring policies of banks. The results of the study are consistent with economic development theory, which indicates the vital role of the financial sector in the development of emerging economies. The empirical findings suggested that state government and banking regulation authorities should remain cautious at this crucial point in time because excessive banking development in terms of expansion, liberalization, and products may lead to an increase in non-performing loans and a reduction in investment activities, which can slow the process of growth. Evidently, the results suggest that regulatory authorities should focus less on enhancing the size of the banking sector and more on improving capacity building of its functionalities as intermediaries for the achievement of sustainable economic growth.

Nyambane, (2020) looked at the impact of a model interest rate on Kenya's economic growth between 1970 and 2018. The study focused on 1) Kenyan interest rate capping and economic development. 2) Create a statistical model of the lending interest rate and Kenya's economic development. 3) Calculate the statistical relationship between Kenya's deposit interest rate and the country's economic development. 4) The real interest rate and Kenya's economic growth have an approximate statistical relationship. For secondary data from the Kenyan Central Bank website, data analysis using SPSS, Matlab, Excel, and R revealed that only the real interest rate has a positive correlation with economic growth. According to regression analysis, only the real interest rate had a positive impact on economic development. According to descriptive figures, the capping interest rate has the highest standard error mean (1.1536), while economic growth has the lowest (0.5936). Capping interest rates and lending interest rates have negative relationships with economic growth, according to the models established. The deposit interest rate and economic growth were linked using a regression equation, and the deposit interest rate was calculated using an optimization problem. The optimal deposit interest rate, according to the solution to the optimization problem, is 0.06039. The established real interest rate model also revealed a positive relationship with economic growth. The study came to the conclusion that interest rates play an important role in economic development. The study predicted that interest rate indicators will have short- and long-term effects on economic growth in the future.

Berhe, (2019) looked into the factors that influence commercial banks' lending behavior for a group of commercial banks in Ethiopia. A cross-sectional explanatory research design was used in this analysis. The study examines the factors that influence commercial banks' lending decisions. Data from both qualitative and quantitative sources were used. From 2011 to 2017, secondary data was gathered from selected audited annual reports of commercial banks as well as the National Bank of Ethiopia's annual financial reports. The study examined the relationship between the dependent (lending behavior) and independent variables (Interest Rate, Capital Adequacy Ratio, Liquidity

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Ratio, Asset Quality, and Volume of Deposits), as well as the power of clarification of the independent variables for the dependent variable. The correlation findings indicated that deposit volumes, interest/credit rates, liquidity ratios, asset quality (AQ), and capital adequacy ratio (CAR) have a linear association with lending activity of the selected commercial banks. Besides that, the regression results indicated that the factors Liquidity Ratio (LR), Credit Rate (CR), and Asset Quality have a major impact on lending activity, while two other factors, Capital Adequacy Ratio and Volume of Deposits, have a negligible impact.

Adofu and Audu (2010) used ordinary least square method to ascertain the assessment of the effects of interest rate deregulation in enhancing agricultural productivity in Nigeria. The paper found out that interest rate play a significant role in enhancing economic activities and as such, monetary authorities should ensure appropriate determination of interest rate level that will break the double - edge effect of interest rate on savers and local investors.

A paper by Ngetich and Wanjau (2011) to assess on the effects of interest rate spread on the level of non-performing assets in Kenya commercial banks. The paper sought to establish the effects of interest rate spread on the level of non-performing Assets in commercial banks in Kenya They adopted a descriptive research design on a sample of all commercial banks in Kenya operating by 2008 which were 43 in number. The paper used questionnaires to collect data from primary sources and secondary data, collected from Bank supervision report, to augment the primary data findings. Paper used both quantitative and qualitative techniques in data analysis to establish relationship between the interest rate and loan non-performance. The study showed that there was a significant effect of interest rate on economic growth.

III. METHODOLOGY

This study followed the steps of Jalil, Wahid and Shahbaz (2010) and Waiyaki (2013) and adopted the endogenous growth model. Proponents of the endogenous growth models such as Pagano, (1993), hold that capital accumulation can increase the long run trend rate of economic growth. However, to permit capital accumulation it is necessary to increase the savings ratios. Thus, a well-functioning financial system encourages investment, promotes technological innovation that ultimately leads to economic growth through savings. To capture the potential effects of financial deepening on economic growth, consider the simplest endogenous growth model: the "AK" model, where aggregate output is a linear function of the aggregate capital stock

$Y_t = AK_t$ ……1

Where, Y_t is output at time t, A is total factor productivity and K_t is the measure of real capital stock. The AK model can be derived assuming that the population is stationary and that only capital stock is subject to constant returns to scale. Conventionally to estimate the capital stock, K_t is measured as the previous period amount of capital (K_{t-1}) corrected for depreciation plus gross investment in current period(I_t). Thus, with capital depreciating at the rate δ, the gross investment becomes:

$I_t = K_{t+1} - (1-\delta)K_t$ ……..…2

In a closed economy with no government, capital market equilibrium requires that Savings equals investment. However, Pagano (1993) assumes that a proportion of 1- θ is lost during the process of financial intermediation and thus the fraction (θ) of total savings can be used to finance investment. Therefore, the savings-investment relationship can be written as:

$\theta S_t = I_t$ ……3

From equation (1), we introduce the growth rate at time *t+1* which is

$g_{t+1} = \frac{Y_{t+1}}{Y_t} - 1 = \frac{K_{t+1}}{K_t} - 1$ ……4

Using eq. (2) and dropping the time subscripts, the steady-state growth rate can be written as, the steady state growth rate of output becomes:

$g_y = \frac{AI}{y} - \delta = A\theta S$ ……5

The capital market equilibrium condition (3) has been used and denoted the gross saving rate *S*or $\frac{S_t}{Y_t}$. Thus,

$S = \frac{S_t}{Y_t} = \frac{S_t}{AK_t}$ ……6

Equation 5 expresses that economic growth depends on the total factor productivity (*A*), the efficiency of financial intermediation (θ), and the rate of savings(*S*). Financial deepening is assumed to affect

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growth through the amount of savings put in investment. Wurgler (2000) as quoted by Ngugi, Amanja and Maana (2012) shows that even if financial development does not lead to higher levels of investment, it allocates existing investment better and therefore promotes economic growth. Importantly, when the rate of depreciation is assumed to be constant, economic growth depends on financial deepening. From the above $Y_t$can be expressed as follows:

$$Y_t = \beta_0 + \beta_1 \frac{S_t}{Y_t} + \varepsilon_t$$

……..7

Where, Y_t is the natural logarithm of real GDP of Kenya and $\frac{S_t}{Y_t}$ the natural logarithm of savings to nominal GDP that proxies financial deepening ($\frac{S_t}{Y_t} = FD$).$\beta_0$is the intercept, β_1 is the coefficient that gives the effects of financial development on economic growth while ε_t is the error term. Equation 7 can be rewritten as:

$$GDP = \beta_0 + \beta_1 FD_t + \varepsilon_t$$

……8

In equation (8), FD is extended to include each alternative measure namely: Ratio of private sector credit to GDP (CPS), ratio of commercial bank deposits to GDP (CBD), ratio of broad money stock to GDP (BMS), depth of credit information (CINF), lending interest rate (INR) and the ratio of stock market capitalization to GDP (SMC).

The ordinary least square (OLS) regression is the estimation technique employed in this study. The choice of ordinary least square method was due to its simplicity. The researcher however adopted a model by Ohwofasa and Aiyedogbon (2013), which was modified by the researcher to suit the present research.

In order to establish the effect of financial deepening on economic growth in Kenya, the study attempts to isolate key variables underpinning the study. The dependent variable is Gross Domestic Product Growth rate and five covariates: bank credit to the private sector; commercial bank deposits; Broad money stock; banking sector assets and stock market capitalization.

$$Y = f(x_1, x_2, x_3, x_4, x_5)$$

Where Y is GDP growth rate, and x_i, $i = 1, 2, 3, 4, 5$ represent the covariates bank credit to the private sector; commercial bank deposits; Broad money stock; depth of credit information, lending interest and stock market capitalization

The model is as specified below:

$$GDPGR_t = a_0 + a_1 CPS_t + a_2 CBD_t + a_3 BMS_t + a_4 CINF_t + a_5 SMC_t + a_6 INR_t + U_t \text{.....9}$$

Where: GDPGR is Gross Domestic Product Growth Rate, CPS is Ratio of private sector credit to GDP, CBD is ratio of commercial bank deposits to GDP, BMS is ratio of broad money stock to GDP, CINF is the depth of credit information, INR is the lending interest rate and SMC is the ratio of stock market capitalization to GDP. U is Error term and a subscript'**t**' for time series.

This model being OLS is preferred because it is easy to understand, simple in its computational procedure and parameter estimation. It also possesses the properties of best linear unbiased estimator (BLUE).

The major sources of data to be used in the study was National Accounts Data on the variables obtained from the KNBS Economic Surveys and Statistical Abstracts and International Financial Statistics (IFS) site.

This study makes use of annual data spanning 1990 to 2021 on the following macroeconomic variables: gross domestic product growth rate (GDPGR), credit to private sector (CPS), commercial bank deposits (CBD), broad money stock (BMS), depth of credit information (CINF), lending interest rate (INR) and stock market capitalization (SMC).

The period 1990-2021 was chosen because it will generate a large sample of 32 data points, which are necessary for a normal distribution and provide adequate information on the subject under study. The period is also recent enough to be used for inference on current and future trends.

EMPIRICAL RESULTS

The results for trends on lending interest rate is presented in figure 1.

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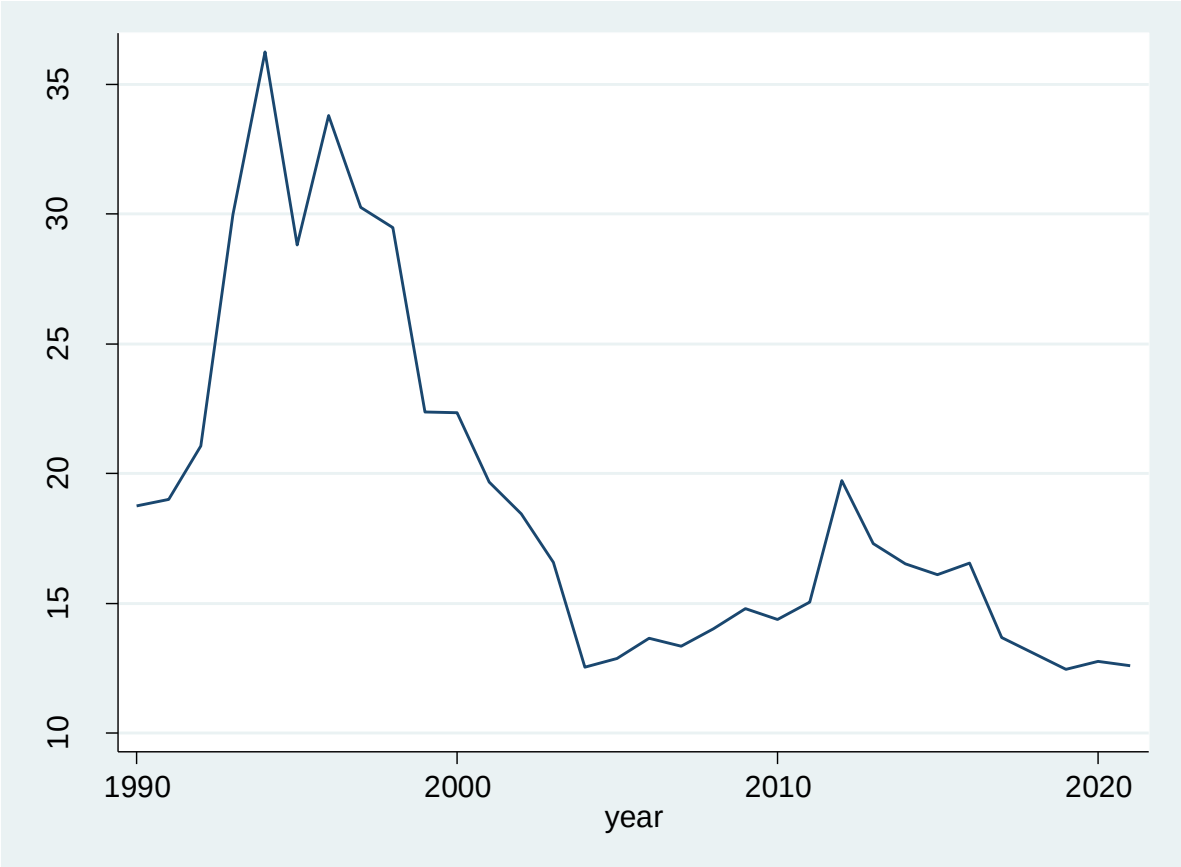

Figure 1: Trends of Lending Interest Rates
Source: Author (2022)

This study found that lending interest rates was averaged 19.00 and standard deviation of 6.80. Figure 4.6 indicates that there has been a decline trending in lending interest rates by banks in Kenya. Lending interest rate or interest rate is the amount charged by lenders for a certain period as a percentage of the amount lent or deposited. The total interest on the amount or the principal sum is determined by the duration of time over which the amount is deposited or lent. Most loans use simple interest.

Unit root results

Table 1: Stationarity Using Philip and Perron

	ADF test statistic		Critical values			Conclusion
Variable	**T**	**P**	**1%**	**5%**	**10%**	
GDP	2.030	0.9987	-3.709	-2.983	-2.623	Nonstationary
CPS	-1.839	0.3613	-3.709	-2.983	-2.623	Nonstationary
CBD	-1.752	0.4047	-3.709	-2.983	-2.623	Nonstationary
BMS	-3.418	0.0103	-3.709	-2.983	-2.623	Stationary
CINFO	-4.466	0.0002	-3.709	-2.983	-2.623	Stationary
LINT	-1.343	0.6091	-3.709	-2.983	-2.623	Nonstationary
SMC	-2.750	0.0658	-3.709	-2.983	-2.623	Nonstationary
First difference						
Variable	**T**	**P**	**1%**	**5%**	**10%**	
GDP	-.3147	0.0233	-3.716	-2.986	-2.624	Stationary

CPS	-5.660	0.0000	-3.716	-2.986	-2.624	Stationary
CBD	-3.526	0.0073	-3.716	-2.986	-2.624	Stationary
BMS	-6.202	0.0000	-3.716	-2.986	-2.624	Stationary
CINFO	-8.310	0.0000	-3.716	-2.986	-2.624	Stationary
LINT	-5.517	0.0000	-3.716	-2.986	-2.624	Stationary
SMC	-6.522	0.0000	-3.716	-2.986	-2.624	Stationary

Note: the Mackinnon critical values at levels **1%**=-3.709, **5%**=-2.983 and **10%**= -2.623
Mackinnon critical values at first difference **1%**=-3.716, **5%**=-2.986 and **10%**= -2.624
Source: Author (2022)

The results in table 1 indicated that both broad money stock and depth of credit information were stationary at levels while the rest had unit root. Upon first difference, all the variables were stationary.

Co-integration Results
According to Cameron and Trivedi (2005), there are two approaches normally used in determination of Johansen cointegration; trace statistic and maximum eigenvalues

Table 2: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.924767	220.8402	125.6154	0.0000
At most 1 *	0.777278	143.2251	95.75366	0.0000
At most 2 *	0.738539	98.17024	69.81889	0.0001
At most 3 *	0.600799	57.92619	47.85613	0.0043
At most 4 *	0.513791	30.37748	29.79707	0.0428
At most 5	0.220603	8.744008	15.49471	0.3896
At most 6	0.041353	1.266962	3.841466	0.2603

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.924767	77.61510	46.23142	0.0000
At most 1 *	0.777278	45.05489	40.07757	0.0127
At most 2 *	0.738539	40.24405	33.87687	0.0076
At most 3	0.600799	27.54871	27.58434	0.0505
At most 4 *	0.513791	21.63348	21.13162	0.0425
At most 5	0.220603	7.477046	14.26460	0.4344
At most 6	0.041353	1.266962	3.841466	0.2603

Max-eigenvalue test indicates 3 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Author (2022)

Based on Johansen's maximum likelihood procedure, cointegration test results presented in Table 2 indicates there is at most 4 cointegrating relationship as suggested by trace statistic (*) and maximum eigenvalues among the variables. This confirms long run relationship among the variables and prompts estimation of VEC model (the restricted VAR).

Vector Error Correction Model
The results for the short run and long relationship are presented in this section.

Short Run Relationship
The results for the short run relationship is depicted in table 3.

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Table 3: Short Run Relationship

Equation	parameters	RMSE	R-sq	Chi2	P >chi2	
	9	0.133	0.4243	15.474	0.0787	
	Coef.	**Std.Err**	**z**	**p**	**[95% CI]**	
Ce1	0.041	0.004	10.00	0.000	0.039	0.122
LGDP	0.116	0.257	0.45	0.653	-0.389	0.620
CPS	-0.002	0.020	-0.11	0.910	-0.041	0.036
CBD	0.001	0.011	0.12	0.901	-0.021	0.024
BMS	-0.010	0.021	-0.47	0.640	-0.052	0.032
CINF	0.031	0.044	0.70	0.485	-0.055	0.116
INR	0.0002	0.009	0.02	0.984	-0.017	0.017
SMC	0.004	0.005	0.72	0.469	-0.006	0.014
Constant	0.053	0.036	1.45	0.146	-0.018	0.123

Source: Author (2022)

According to results presented in Table 3, the coefficient value of ce1 was -0.041 and significant at 0.000. This confirms that a co-integrating relationship between the study variable during the study period, and Hussain (2009) argued that this implies that there was an error correction that gradually corrects the endogenous variables to a long run relationship through series of partial short run adjustments. It further indicated that indicating that any form of short-term fluctuations between the credit to private sector, commercial bank deposits, broad money stock, depth of credit information, lending interest rates and stock market capitalization gave rise to a stable and a long run economic growth. Therefore, this presence of long run relationship and partial adjustments prompt the use of Vector Error Correction Model (VECM) to test the hypotheses of the study. VECM also referred to as restricted VAR (it is restricted because of the lags selection due to presence of cointegration) is part of VAR where there is cointegration (Greene, 2008). The magnitude of the error term (0.0412) coefficient indicates the speed of adjustment with which the variables converge overtime and its reciprocal (1/0.0412=24.27) shows it takes approximate 24 years these partial adjustments take to come back to equilibrium (Lutkepohl, 2005; Hamilton, 1994; Floyd, 2005 and Tsay, 2010).

Long Run Relationship

The results for the long run relationship is presented in table 4.

Table 4: Long Run Relationship

Source	SS	Df	MS	No. of Obs	= 32
Model	20.145	6	3.357	F(6,25)	= 18.16
Residual	4.623	25	0.185	P >F	= 0.000
Total	24.768	31	0.799	R-sq	= 0.8133
				Adj R-sq	= 0.7605
				RMSE	= 0.4300

Johansen Normalization Restriction Imposed

Ce1	Coef.	Std. Err	z	P >z	[95% CI]	
LGDP	1	.	.	.	.	.
CPS	0.4437	0.0394	11.27	0.000	0.3666	0.5209
CBD	-0.3678	0.0240	-15.30	0.000	-4150	-0.3207
BMS	-0.3583	0.0405	-8.86	0.000	-0.4376	-0.2790
CINF	-1.7152	0.0992	-17.29	0.000	-1.9097	-1.5207
INR	-0.0626	0.0101	-6.19	0.000	-0.0824	-0.0428
SMC	-0.1477	0.0094	-15.75	0.000	-0.1661	-0.1293
Constant	24.7634	.	.	.	.	.

Source: Author (2022)

Results presented by Table 4 are for the long run relationship. It shows that credit to private sector ($\beta = 0.4437, p = 0.000$) positively and significantly affected economic growth. However,

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commercial bank deposits ($\beta = -0.3678, p = 0.000$), broad money stock ($\beta = -0.3583, p = 0.000$), depth of credit information ($\beta = -1.7152, p = 0.000$), lending interest rates ($\beta = -0.0626, p = 0.000$)and stock market capitalization ($\beta = -0.1477, p = 0.000$) gave a negative and significant effects on economic growth in the long run in Kenya over the study period. The root means square error (RMSE) is small (0.4300) and significance of probability > F=0.000 meaning the model was fit for the data used. RMSE serves to aggregate the magnitudes of the standard errors in predictions for various times into a single measure of predictive power. RMSE is a measure of accuracy in comparing the forecasting errors of different models for a dataset and not between datasets. The value for R square is 0.8133 meaning that the variation of credit to private sector, commercial bank deposits, broad money stock, depth of credit information, lending interest rates and stock market capitalization explained 81.33 percent effects on the economic growth in Kenya.

The relationship between financial deepening and the economic growth can be illustrated by one cointegrating relationship as shown below.

$$ECO = 24.7634 + 0.4437_{CPS} - 0.3678_{CBD} - 0.3583_{BMS} - 1.7152_{CINF} - 0.0626_{LINTRT} - 0.1477_{SMC}$$

Where ECO-economic growth, CPS-credit to private sector, CBD-commercial bank deposits, BMS-broad money stock, CINF-depth of credit information, L-INTRT-lending interest rates and SMC-stock market capitalization.

IV. INTERPRETATION AND CONCLUSION

The hypothesis that lending interest rate is not statistically significant variable in determining the economic growth in Kenya failed to be accepted by the study. The regression results showed that lending interest rate is negative and statistically significant on Kenya's economic growth (-0.0626; P=0.000<0.05). The implication here is that an increase of lending interest rate by one percent will cause a reduction of economic growth by 1.0235 percent.

The central bank of Kenya should instill sound fiscal and monetary policies for regulating lending interest rate in curbing the level of inflation and money supply in the economy, so as to generate economic growth.

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