

Interest Rate Behaviour And Economic Development: Evidence from Non-Oil Resource Intensive Sub-Saharan African Countries

Oluwole F. O¹

Abstract

This study assessed the effect of interest rates on the economic development of 14 non-oil resource-intensive countries in the Sub-Saharan African countries. With a pooled data of 10 years for lending rate, savings deposit rate, real interest rate and domestic credit to private sector, the study examined the effect of interest rate changes on the gross national income per capita using a random effect panel least squares (PLS) regression. Panel Granger causality analysis was also used to ascertain whether interest rate caused changes in economic development or vice-versa. Results of the preferred model (random effect PLS) revealed that the effect of lending rate, though positive on economic development was insignificant. However, savings deposit rate exerted a significant negative effect on economic development. The negative effect of real interest rate and domestic credit to private sector were insignificant. The study concludes by observing that interest rates management has not facilitated sustainable economic development in the selected SSA countries. Rather, the only significant effect was a negative. This was also attested to by the causality test result, which revealed a no-causality situation between interest rate and economic development. The study recommends a systematic reduction in savings deposit rate and a more development-oriented lending rate policy.

Keywords: Interest rate, economic development, non-oil resource intensive

¹ Email: foluso.oluwole@aaau.edu.ng

Introduction

Continental and global events in recent years have made reliable forecast on economic development in Sub-Saharan African (SSA) countries difficult because no significant progress had been made over the years. After the global financial crises in 2009, there were expectations that the economies of African countries would bounce back. However, as recorded by the International Monetary Fund (IMF, 2019), predictions on economic development in the SSA countries have been unfriendly even when expectation of growth is high. The problem did not just start. Omolade and Mukuolu (2018) observed that economic growth in the African continent has not been achieved despite period optimism by policy makers and governments. The World Bank (2022) noted that persistent economic recession, inflation, increasing lending rate, negative capital flows among other factors have contributed to slow development in most SSA countries.

SSA policy makers, especially governments and financial institutions have argued that effective monetary policy framework is indispensable to the growth and development of the region's economy (World Bank, 2022). This is the reason for monetary authorities in the SSA countries continue to formulate monetary policies that target interest rate and money supply controls aimed at promoting domestic capital formation and productivity. Such policies include changing money market rates from time to time. For example, Omolade and Mukuolu (2018) reported that the Central Bank of many African countries (like Nigeria, Kenya, South Africa), from time to time, adjust the monetary policy rate (the rate at which they advance credit to banks) to facilitate sustainable economic development. This goal has though remained unachieved.

Dynamism also contributes to uncertainty in monetary policy. The IMF (2019) reported that volatility in money supply and interest rates can become unhealthy for the economy. This dynamism has continued to heighten monetary policy uncertainty in the SSA countries. The importance of interest rate to economic development in the SSAs cannot be overstretched. It is an important component of the total return of many investments and certain interest rates provide insight into future economic and financial market activity. Several years ago, the IMF (1983) had observed that low rate of interest often encourages domestic small and medium-scale businesses in facilitating employment and stimulating productive activities. On the contrary, rising interest rate drives away small business owners from borrowing for investment. There has also been

argument that rising interest rate can promote monopoly such that only those who can afford high interest rate will continue to produce for all others. Except when borrowers also earn high interest on their savings to equilibrate the high borrowing rate, rising interest rate will be harmful to business. Furthermore, Fund posited that rising interest rate will eventually be transmitted to consumers in rising prices of goods and services.

Olaniyan *et al* (2020) opined that the long-term objective of the deregulation of the interest rate in many developing countries is to promote investment in agricultural and manufacturing sector and establish a positive link between the interest rate and investment that will foster economic growth and development. However, with underdeveloped money and capital markets, the cost of borrowing in many SSA countries has not been favourable over the years. Whether monetary policy in terms of interest rate manipulation has been able to elicit economic development remains a debatable issue in economic literature. Theoretically, lower interest rate is expected to spur investment, productivity and economic development and vice-versa, *ceteris paribus*. However, ample empirical evidence points to the opposite direction.

While this is enough reason to re-examine the relationship between changes in interest rate and economic development in the SSA countries, a stronger premise on which this study is built is the need to examine such relationship on the basis of the type of resource group these countries belong to. Empirical literature on the effect of interest rate on economic development based on region resources and endowments is, to the best of this researcher's knowledge, rare. Nevertheless, there is no gainsaying in that available resources in countries will exert some degree of influence on its financial system, which to a large extent, will also affect interest rates. The question of whether those who are not well-endowed with such natural resources will not have the same scenario is subject to debate.

In the SSA, there are three main groups into which the countries can be categorized in terms of resources and endowments. They include the oil exporters, other resource intensive countries and non-resource intensive countries. This study focuses on the effect of interest rate changes on economic development in the non-oil resource intensive countries. The countries are Botswana, Burkina Faso, Ghana, Guinea, Liberia, Sierra Leone, Zambia, Namibia, Zimbabwe, Congo DR, Mali, Tanzania and South Africa and Central Africa Republic.

Literature Review

Interest Rate and Economic Development

Patterson and Lygnerud (1999) defined interest rate as the price payable for borrowed money at a given time in percentage similar to how Mutinda (2014) defined it: an amount charged on debtors for using credit at a given time. Moyo and Pierre (2018) stated that interest rate should be viewed as a cost of credit, which is a specific charge or price on credit to borrowers. According to Sanusi (2002), the definition of interest rate implies that it is the main determinant of credit cost in any economy. Hence, high interest rate may discourage prospective borrowers from borrowing for investment purpose because repayment may become difficult when it falls due. This inevitably will translate to falling GDP resulting from lack of investment. Sekuma (2011) submitted that the negative effect of rising interest rate goes beyond increasing the cost of production but also negatively affects consumers' purchasing power and their ability to accumulate fund for investment. However, pro-high interest rate school posits that it can boost the supply of free funds in the money market so that there is higher accessibility to funds by investors who wish to borrow. Olaniyi (2019) and Mariana (2020) shared the same view that distortions in interest rate has a very serious role to play in investment and growth. This has been the major policy focus in almost all countries in the globe particularly the developing economies Ozigbo (2020).

The World Bank (2022) stated that the concern has been on the SSA countries with poor economic conditions in terms of interest rate, growth, paucity and development. High interest rates and debts are making the government of these countries make difficult choices. The IMF (2019) stated that a significant heterogeneity exists in the growth pattern of SSA countries. According to the Fund, "economic activities in the region's three largest economies, Nigeria (an oil exporter), South Africa (a non-oil, resource-intensive country), and Ethiopia (a non-resource-intensive country), illustrates the bifurcated growth paths in the region." The Fund suggested some salient steps that should be taken to build resilience in the SSA sub-continent one of which is to improve monetary policy effectiveness. Others include reduction of public debt exposures, improving resilience of the external sector, repairing of balance sheet of the banking system, building resilience against natural disasters, facilitation of regional and global economic integration, promotion of competitiveness and financial inclusion.

Countries in the SSA are broadly grouped into three (resource endowment, economic development and fragility) by the IMF (2019).

The IMF classified the SSA countries into oil-exporting, non-oil resource intensive and non-resource intensive. These countries are also re-classified into whether they are middle income or low income while a group is defined as those with fragile economic situations. The oil-exporting countries are those where oil export is 30 percent or more of their annual total exports. The second group “other resource-intensive” countries where 25% of their total annual export is made up of non-renewable natural resources. The third, the “non-resource-intensive countries” are those that are neither oil exporters or resource intensive.

Theoretical Framework

Theories on interest rate are basically surrounded by thoughts on what determines the rate chargeable on borrowed funds. The loanable fund theory (LFT) states that interest rate is determined by factors that determine the demand and supply for lendable funds in the market (Hansen, 1951). The LFT posits that loanable fund is inversely related to interest rate, implying that loanable fund and interest rate move in non-convergent, opposite directions. Therefore, when interest rate falls, material cost will reduce, cost of production may fall, investors may invest more, and economic development may be facilitated. The reverse will be the case when interest rate is increasing.

The liquidity preference theory (LPT) posits that the preference to hold liquid money for investment purpose determines the rate of interest. According to Keynes (1936), interest rate has monetary phenomenon such that the total money in circulation considerably influences the determination of interest rate. Rising excess money supply in circulation can be corrected by increase in interest rate but this would also reduce the desire to borrow by investors. The LPT comes to play when interest rate is reduced, and investors now prefer to hold liquid assets or borrow for investment to savings. The LPT proposed that this scenario will promote economic development. An advantage of the LPT theory also presupposes that high interest rate will encourage savings and discourage present consumption (Fisher, 1930).

McKinnon (1973) and Shaw (1973) advocated financial liberalization and absence of repression. To the theorists, regulating interest rate often results into uncompetitive or low and negative real interest rate. Low real interest rate impairs investment and productivity in less developing countries. Uncompetitive or negative interest rates discourages saving and reduces investment. There will be possibility of recession and low rate of return. The authors therefore argued that a deregulated interest rate regime would encourage savings and investment and boost economic growth and development. McKinnon and Shaw both argued that deregulation of interest rates was necessary to solve the problems created by fiscal policy implored in developing countries.

Empirical Literature

The US Bank (2020) posited that rising interest rate can ripple investments and the economy. For example, Central Banks can reduce interest rates when there is obvious economic growth lag to increase access to easy acquisition finance by investors. However, the Central Banks will also want to control inflationary pressures so continuous reduction of interest rate may not be embarked upon always by the banks. Therefore, the Bank argued that since interest rate volatility affects investment and economic development in varied ways, there is no straightjacketed rule about interest rate.

Olaniyan *et al* (2020) studied the effect of interest rate and economic growth in the determination of a firm's investment choice in Nigeria from 1989 to 2019. The study split interest rate and economic development into borrowing, exchange and inflation rates, and GDP. They used of the auto-regressive distributed lag (ARDL) technique to analyze the data. The ARDL bound test revealed a existence of long run co-integration among the study variables. They pointed to a unique long-term relationship between interest rates, external borrowing, exchange rate, and economic development. The finding also showed that no strong evidence exists of relationship between interest rate and investment in Nigeria. The authors recommended that Nigerian government should focus growth-enhancing restructurings and reduce regulations of interest rates.

Moyo and Pierre (2018, cited in Njie & Badjie, 2021) investigated how interest rate reforms affected the economic performance of the South African Development Commission (SADC) from

1990 to 2015. The authors discovered that interest rate reforms positively impacted the economic development of the SADC countries during the period.

Mariana et al (2020) examined the impact of interest rate, exchange rate and European business climate on economic growth in Romania using an ARDL approach with structural breaks. Their findings show that in the short run, the economic growth is negatively influenced by the interest rate, and positively by the exchange rate. This case of Romania shows that increase in the interest rate do not favour economic development of Romania. In this study, we will examine maybe an increase in the interest rate will have a positive influence on the economic development.

There cannot be economic development without sustainable economic growth for at least 5years. Utile *et al* (2018) examined the effect of interest rate on economic growth in Nigeria economy using ex-post facto research design, multiple regression technique was used for the analysis of data. The researchers found that both exchange and inflation rates exerted insignificant negative effect on GDP whereas interest rate had a positive effect.

Muhammad *et al* (2017) examined the impact of interest rate on economic development in 20 Asian countries within the period of 2006-2015. The targeted population of the research is 48 countries while the sample of 20 companies was selected using convenience sampling technique. The independent variable used in the research is interest rate and dependent variables are Gross Domestic Product, Foreign Direct Investment and Inflation. The research used selected pre-estimation tests and regression analysis to analyze the data and found that interest rate has a negative significant impact on GDP and Inflation while have negative insignificant impact on Foreign Direct Investment.

Theoretically, it is generally assumed that interest rate affects economic development, although empirical literature has not reached a consensus on the nature of the relationship between them. More than this, existing literature on interest rate – economic development nexus in terms of countries' regional, economic and development groups and resource endowments have not been well-addressed in literature particularly in the SSA. Majority of studies relating to this nexus have dealt with interest rate and economic growth rather than economic development.

Methodology

We pooled a panel data of fourteen (14) sub-Saharan African countries that belong non-oil resource intensive nations. They include Botswana, Burkina Faso, Ghana, Guinea, Liberia, Sierra Leone, Zambia, Namibia, Zimbabwe, Congo DR, Mali, Tanzania and South Africa and Central Africa Republic. Niger is excluded because of the absence of requisite data on examined variables. Panel data were sourced from the World Bank Global Database for the period 2000 – 2020 on national income index (per capita), lending and deposit rates, real interest rate and domestic credits to the private sector. Paucity of data, which was a major challenge to the study, determined the period chosen (2000 – 2020). The study model expresses the relationship between interest rate variables and economic development of the non-oil resource intensive countries In the SSAs.

It is stated as:

$$ECD = f(INT) \dots\dots\dots (1)$$

Where ECD = economic development, and

INT = interest rate

ECD is measured by the gross national income per capita (GNIPC) while INT is decomposed to include lending rate (LDR), Savings deposit rate (SDR), real interest rate (RINT – nominal interest rate less inflation rate) and domestic credit to private sector (DCP, which is expected to be influenced by interest rate).

The model for the present research is thus expanded to incorporate these defined variables.

$$GNIPC = \alpha_{it} + \beta_1 LDR_{it} + \beta_2 SDR_{it} + \beta_3 RINT_{it} + \beta_4 DCP_{it} \epsilon_{it} \dots\dots\dots(2)$$

Where α = intercept and $\beta_1 \dots \beta_4$ are regression coefficients.

Equation (ii) is expressed in logarithm form neutralize possible adverse effect of differences in unit of measurement.

$$\ln GNIPC_{it} = \alpha_{it} + \beta_1 \ln LDR_{it} + \beta_2 \ln SDR_{it} + \beta_3 \ln RINT_{it} + \beta_4 \ln DCP_{it} \epsilon_{it} \dots (3)$$

Pre-Estimation Diagnosis

To determine the appropriate estimation techniques, all the study variables are tested for ascertain their statistical properties and degree of correlations.

Estimation of Effect of Interest rate Changes on Economic Development

We used Panel Least Squares (PLS) technique to find how interest rates affect economic development in the non-oil resource intensive SSA countries between 2000 and 2020. We also used the panel causality test to ascertain whether previous changes in each of the variables caused greater changes in other variables more than previous changes in the other variables caused in themselves. A general Granger causality model for this study is expressed in terms of interest rates and economic development thus:

$$Q_t = \sum_{i=1}^k a_i P_{t-i} + \sum_{j=1}^k b_j Q_{t-j} + u_{1t} \quad \dots \dots \dots \quad (iv)$$

$$P_t = \sum_{i=1}^k c_i Q_{t-i} + \sum_{j=1}^k d_j P_{t-j} + u_{2t} \quad \dots \dots \dots \quad (v)$$

Where Q and P refer to economic development and interest rate (price of credit) respectively.

a_i and d_i are coefficients of changes in P and Q caused by changes in Q and P respectively. A null hypothesis cannot be rejected if the probability (p) of F- Statistics is >0.05 and vice versa.

In theory, interest rate is expected to negatively affect economic development. However, with efficient management, monetary authorities are expected to manipulate interest rates to facilitate economic growth and development.

Results and Discussion

We analyzed a pooled/panel data of fourteen non-oil resource intensive sub-Saharan African countries with the panel least squares technique. First, we established the statistical properties of all the variables and the correlations among them and thereafter, we determined that the variables are stationarity. We then proceeded to find the effect of interest rates on the economic development of the selected countries using the panel least squares.

Preliminary Diagnosis

This section contains the descriptive statistics of the variables and the correlations among them. It also contains the test of stationarity to ensure that the variables are stationary.

Descriptive Statistics

Table 1 contains the extracts of descriptive statistics that are directly relevant to our study.

Table 1

Descriptive Statistics

	GNIPC	LDR	RINT	SDR	DCP
Skewness	0.994425	2.351096	-4.325848	1.488797	6.440155
Kurtosis	2.504070	2.80437	12.61631	3.395941	42.86816
Jarque-Bera	129.76041	588.0494	6743.177	269.0409	26563.20
Probability	0.2316610	0.070721	0.552200	0.065210	0.2335700
Observations	170	170	170	170	170

Source: Authors' Computation (2022)

From Table 1, GNIPC, LDR, SDR and DCP skewed positively to the right of the mean while RINT skewed to the left with values 0.994425, 2.351096, 1.488797, 6.440156 and -4.325848 respectively. GNIPC, LDR, and SDR have kurtosis values approximately 3, implying that the variables are close to the mean with coefficient 2.504070, 2.80437 and 3.395941 respectively. RINT and DCP are leptokurtic with values 12.616331 and 42.86816 respectively. The Jarque-Bera statistics and probabilities revealed that while GNIPC, LDR and SDR are normally distributed with probabilities 0.2316610, 0,070721 and 0.065210 respectively. RINT and DCP are not normally distributed given their probability of 0.00000. There are 170 observations in all.

Correlations Coefficients

Table 2 reveals the degree of co-movement between the dependent variable (GNIPC) and other independent variables (LDR, RINT, SDR and DCP)

Table 2*Correlation Matrix*

	GNIPC	LDR	RINT	SDR	DCP
GNIPC	1.000000				
LDR	-0.329126	1.000000			
RINT	-0.109563	0.301804	1.000000		
SDR	-0.303293	0.594618	0.326061	1.000000	
DCP	-0.056464	0.184587	-0.611992	-0.073910	1.000000

Source: Author's Computation

All the independent variables move in the opposite direction with the GNIPC. LDR, RINT, SDR and DCP have degree of correlations of -0.329216 (-33%); -0.109563 (-11%); -0.303293 (-30%) and -0.056464 (-0.6%) respectively. However, while the negative correlations between GNIPC and LDR and SDR are fairly low, that of RINT is very low but that of DCP is extremely low. These negative correlations for LDR, LDR and RINT are theoretically expected while that of DCP runs contrary to expectation.

Primary Panel Least Square Regression Results

We pooled a dataset of 14 countries in SSA (non-oil resource intensive countries) and used a panel least squares to estimate the effects of changes in interest rates on economic development of the countries. A panel data consists of a combination of Time series and cross-sectional data. The data for our research is that of 14 countries and 5 different variables for each of the countries. Table 4 contains the summary of pooled/panel least squares results.

Table 4

Extracts from the Pooled/Panel LS Regression Results

Dependent Variable = GNIPC				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
<i>C</i>	8591.794	909.6770	9.444884	0.0000
<i>LDR</i>	-110.6586	53.34677	-2.074327	0.0396
<i>SDR</i>	-261.4134	139.5791	-1.872869	0.0629
<i>RINT</i>	-3.496209	44.29494	-0.078930	0.9372
<i>DCP</i>	-8.894461	27.34949	-0.325215	0.7454
<i>R-Squared</i>				0.127019
<i>Adjusted R-Squared</i>				0.105856
<i>F-Statistic</i>				6.001908
<i>Prob(F-statistic)</i>				0.000156

Source: Author's Computation

Table 4 shows that with PLS, all the dependent variables negatively affected economic development. However, only the effect of LDR is statistically significant given their coefficients and probabilities of t-Statistic (-110.6586, -261.4134, -3.496209 and -8.894461 and probabilities 0.0396, 0.0629, 0.9372 and 0.7454 for LDR, SDR, RINT and DCP respectively. The negative effect of these variables agrees with theoretical expectation. However, only about 13% ($R^2 = 0.127019$) of the behaviour of economic development is explained by interest rate. The remaining 87% is explained by other variables not included in the model. Notwithstanding the research model statistically reliable given the significance of the probability of F-statistic (0.000156).

A limiting feature of panel least squares is that it assumes that all observed individual entities (countries) in a panel are characteristically homogeneous with no cognizance of individual country's different and specific characteristics. This necessitates that a more examination is carried out to ascertain whether individual's differences affect the results generated by the PLS. This is done by carrying out the fixed and random effect tests to determine the more appropriate results upon which inferences will be based.

Analysis of Fixed Effect and Random Effect Models

The fixed effect model allows for heterogeneity among the fourteen countries by allowing each country to have its own intercept value. This implies that although the intercept may differ across countries, the intercept does not change over time (time-invariant). However, the random effect model assumes that all the countries have the same mean value for the intercept. This means that the heterogeneity is random and not fixed and included in the error term. Table 5 summarizes the results of fixed and random effect tests

Table 5*Summary of Fixed Effects and Random Effects Models' Results*

Fixed Effects Model					Random Effects Model				
Dependent Variable = GNIPC					Dependent Variable = GNIPC				
Variable	Coeff.	Std. Err.	t-Statistic	Prob.	Variable	Coeff.	Std. Err.	t-Statistic	Prob.
<i>C</i>	6589.956	253.325	26.014	0.000	<i>C</i>	5970.437	1498.157	3.985	0.000
<i>LDR</i>	40.121	25.826	1.554	0.122	<i>LDR</i>	37.758	25.655	1.472	0.143
<i>SDR</i>	-283.101	54.739	-5.172	0.000	<i>SDR</i>	-279.532	54.467	-5.132	0.000
<i>RINT</i>	-10.024	12.599	-0.796	0.428	<i>RINT</i>	-10.065	12.580	-0.800	0.425
<i>DCP</i>	-10.003	7.099	-1.409	0.161	<i>DCP</i>	-9.889	7.095	-1.394	0.165
<i>R-Squared</i>			0.949257		<i>R-Squared</i>			0.246	
<i>Adjusted R-Squared</i>			0.944674		<i>Adjusted R-Squared</i>			0.228	
<i>F-Statistic</i>			207.1153		<i>F-Statistic</i>			13.445	
<i>Prob(F-statistic)</i>			0.000000		<i>Prob(F-statistic)</i>			0.000	

Source: Author's Computation

Table 5 presents the coefficients and probabilities (among others) of the effect of interest rate variables and economic development for both fixed and random effects models are the fixed effects and the random effects regression estimates. The decision to prefer any of these two is taken after conducting the Hausman test of model selection. This test is guided by a null hypothesis that the preferred model is random while the alternative hypothesis posits that the fixed effect model should be preferred. The test statistic developed by Hausman has an asymptotic chi-square distribution. Having estimated the models above, we shall have to decide which model is good to accept. If the probability value of the Chi-Square Statistics is statistically significant, we shall use fixed effects model, otherwise, the random effects model is appropriate. The results of the Hausman test is presented in Table 6.

Table 6*Summary of Hausman Test Result*

Test Summary	Chi-square statistic	Chi-square d.f.	Prob.
Cross-section random	2.209867	4	0.6972

Source: Author's Computation

Looking at the Chi-square values of the cross-section random in Table 4, the probability values of the Chi-square statistics is 0.6972 which is greater than the 0.05 level of significance, therefore the null hypothesis of preferring random effect model cannot be rejected. We therefore base our analysis on the random effect model results.

From the random effect model in Table 5, Lending rate (LDR) has a statistically insignificant positive effect on economic development (GNIPC); unit increase in LDR will bring about an insignificant increase of 37.748 increase in GNIPC ($p = 0.1430 > 0.05$). Savings deposit rate (SDR) has a significantly negative effect on GNIPC; A unit increase in the rate will bring a significant decline of 279.532 in GNIPC ($p = 0.0000 < 0.05$). Real interest rate (RINT) and domestic credit to private sector (DCP) have insignificant negative effect on GNIPC with coefficients (and probabilities) -10.06648 (0.4248) and -9.888767 (0.1653), respectively. These results are at variance with the results obtained in the OLS pooled regression as revealed in Table 4 where it was shown that the negative effect of LDR on GNIPC is significant. The coefficient of determination R^2 of 0.245823 (25% approx.) implies that about 25% of the behaviour in economic development is explained by interest rates while the remaining 75% is explained by other variables outside the study model. The F-Statistic and its probability (13.44541 and 0.00000) show that the research model is statistically significant and reliable.

Panel Causality Test Results

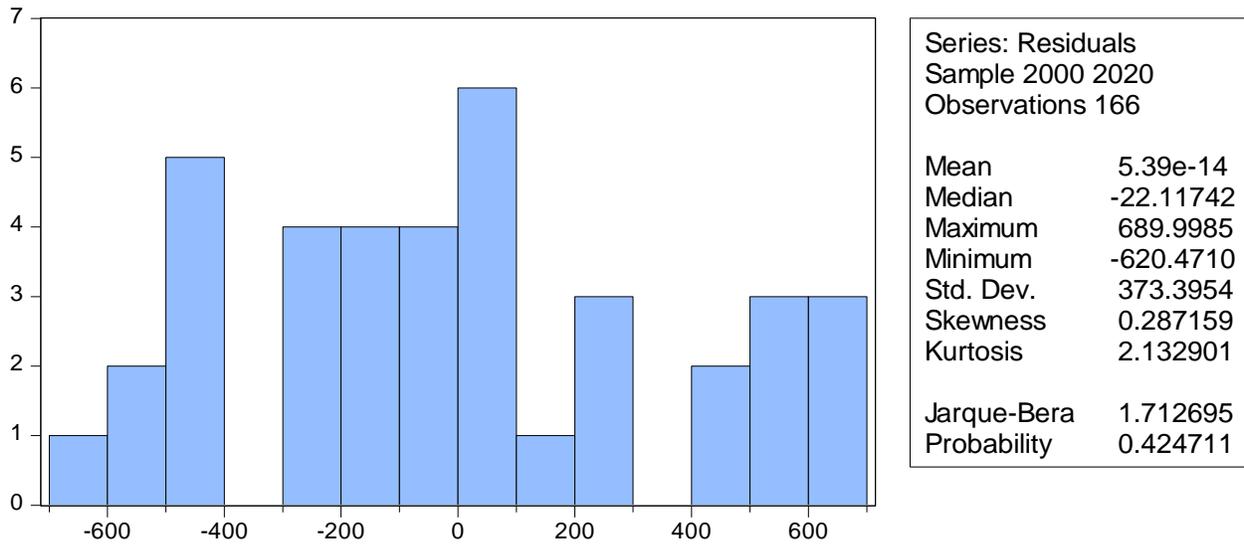
The panel causality test results reveal that interest rate variables and domestic credit to private sector did not in any way Granger cause economic development. For a variable to Granger cause another, the probability of F-Statistic should be less than the level of significance (LOS). In essence, none of the interest rate variables (LDR, SDR, RINT) and DCP have probability lower than the 0.05. The null hypothesis that there is no causal relationship between interest rate and economic development in the non-oil resource intensive countries in SSA cannot be rejected. This also supports the relatively low correlations between the two variables and the insignificance nature of the effect of 3 out of the four variables on economic development.

Post Estimation Test

We tested for the residual normality of the residual of our model with the Jarque-Bera (JB) residual normality test. The result is presented in Figure 1. Given the JB statistic and its corresponding probability (1.712695 and 0.424711 which is less than the 0.05 significance level respectively), the residuals are normally distributed.

Figure 1

Residual Normality Test



Source: Author's Computation

Discussion of Findings

This study assessed how changes in interest rates affected the economic development of 14 non-oil resource intensive countries in Sub-Saharan Africa. Using the random effect panel least squares model, results of the study showed that out of the four-interest rate-related variables, only savings deposit rate had a significant negative effect on the economic development of the countries defined as the gross national income per capital index (GINI index). This corroborates the finding of Muhammed *et al* (2017). The four variables whose effects on economic development were assessed include lending rate, savings deposit rate, real interest rate and domestic credit to the private sector. Lending rate exerted a positive effect on economic development though the effect is statistically insignificant. This agrees with Utile *et al* (2018). The effect of real interest rate and domestic credit is negative but statistically insignificant in support of findings by Olaniyan *et al*

(2020) and Mariana *et al* (2020). Although a negative interest rate is expected to negatively affect economic development theoretically, a well-managed interest rate system is necessary for sustainable economic development. This is one of the goals of monetary policy. Savings deposit rate's negative effect is instructive as increasing deposit rate attracts savings deposit and reduces available fund for investment. Hence, the higher the interest rate on savings, the greater the possibility of investors saving their money rather than investing in medium and long-term investment, which may also contain some risk elements. The findings from this study confirms that the effect of interest rates on the economic development of countries considered have not been favorable. If anything at all, it has been more of impairing rather than fostering economic development. Furthermore, to infer that changes in interest rates only explained about 25% of changes in economic development means that the latter is yet to have the desired effect on the latter. This is also deductible from the no causal relationship found in our analysis.

Conclusion and Recommendations

This study was conducted to assess the effect of interest rate dynamic on the economic development of 14 non-oil resource intensive Sub-Saharan African countries from 2000 to 2020. Specifically, the study investigated how lending rate, savings deposit rate, real interest rate and domestic credit to private sector businesses impacted the gross national income per capita (GINI index) for the selected years. We pooled the individual countries data from the World Bank Economic Database and the World Bank Global Financial Indicators and used panel least squares to analyze the panel data.

The initial panel least squares result was subjected to fixed and random effect tests and the Hausman test of model appropriateness. The random effect model was preferred as the basis for inference. Results of the random effect model revealed that though lending rate positively affected economic development in the selected SSA countries, the effect was not significant enough to be adjudged as promoting economic development. However, savings deposit rate had a negative and significant effect on economic development while real interest rate and domestic credit had an insignificant effect on economic development.

On the strength of the significant negative effect of savings deposit, this study concludes that interest rate impairs economic development in the non-oil resource intensive Sub-Saharan African countries in the past 20 years. It is also concluded that interest rate did not have causal link with economic development during the period and that goal-oriented interest rate management had not facilitated economic development as intended by monetary policy authorities of the selected countries.

This researcher hereby advocates a systematic reduction in savings deposit rate and a more development-oriented lending rate policy. A systematic and gradual reduction in savings deposit rate can encourage investors to re-direct their funds to other more productive investment opportunities, especially in countries with other exportable resources and product apart from oil. Added to these is the need to reduce inflation pressures on that also negatively affects lending rate. This research is affected by lack of sufficient data from all the listed countries. There is no doubt that this paucity of data might also have affected the findings recorded in the study.

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