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Effect of Inflation on Economic Growth in Sierra Leone

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Introduction- Economic growth is a key policy objective of any government. In addressing the pertinent issues in economic management, experts and economic planners have had to choose between or combine some of the macroeconomic variables. Economic growth, which is measured by Gross Domestic Product (GDP) confers many benefits which include raising the general standard of living of the population as measured by per capita national income, making income distribution easier to achieve, enhance time frame of accomplishing the basic needs of man to a substantial majority of the population. (Barnes, 2017)

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Effect of Inflation on Economic Growth in Sierra Leone

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I. Introduction

Economic growth is a key policy objective of any government. In addressing the pertinent issues in economic management, experts and economic planners have had to choose between or combine some of the macroeconomic variables. Economic growth, which is measured by Gross Domestic Product (GDP) confers many benefits which include raising the general standard of living of the population as measured by per capita national income, making income distribution easier to achieve, enhance time frame of accomplishing the basic needs of man to a substantial majority of the population. (Barnes, 2017)

The word inflation in the market economics of the world threatens both the developing and developed countries economy because of its undesirable effect. Among many variables that can be stated as the determinant of economic growth is inflation (Barro, 2017). Even though some studies suggest that moderate inflation helps in economic growth, the overall weight of evidence so far clearly indicated that inflation is inimical to growth. Inflation and economic growth are the main concern of most countries of the world. Thus, inflation and economic growth have gotten attention since the classical period of time. A large variety of factors can affect the rate of both. For example, investment in market production, infrastructure, education, and preventive health care can all grow an economy in greater amounts than the investment spending. Monetarists believe the most significant factor influencing inflation or deflation is how fast the money supply grows or shrinks. They consider fiscal policy, or government spending and taxation, as ineffective in controlling inflation.

Inflation is now one of the major problems facing the Sierra Leone economy and the reduction of its high pressure is considered one of the most critical macro-economic objectives in Sierra Leone. Sierra Leone started having double digits rates of inflation few years immediately after independence. The country experienced double digit within 2015-1970 and this was as a result of the civil war. The next period of high inflation was within 1974-1979, when the wage freeze was discontinued as recommended by Udoji salary review commission. To the policy makers, inflation endangers economic growth and development because it discourages investment and savings. These factors explain why policy makers put in lots of efforts to reduce inflation and why several researches have been conducted on this issue. The inflation pressure was further provoked by high demand for imports of both intermediate inputs and consumers goods due to over valuation of the naira which made imports relatively cheaper than locally manufactured goods in this case, the impediment to development may be referred to as cost. (Bayo, 2015)

Inflation has been the macroeconomic problem in Sierra Leone that seems to be difficult to manage over the years. It is generally accepted that inflation has a negative effect on medium and long-term growth. Most researches have claimed that inflation and economic growth have a negative relationship which means that that are inversely related (as inflation rises, GDP reduces and vice versa). During the period of inflation, the value of money falls which increases the earnings of business shareholders and others whose income are fixed in money terms but despite these, it also reduced the standard of living of the people whose income are fixed thus increasing their cost of education welfare and culture facilities available. The problem of inflation makes it difficult for the poor masses with fixed income to survive in the economy.

High inflation is known to have many adverse impact, it imposes welfare cost of the society, impedes efficient resources allocation by obscuring the significant role of relative price change, discourages savings and investment by creating uncertainly about further price, inhabit financial development by making intermediate on more costly, hits the poor excessively, because they do not hold financial asset that provide a hedge against inflation and reduces a country international competitiveness by making its exports relatively more expensive, this impacting negatively on the balance of payments and perhaps more importantly reduces long-term economic growth (Dumka, 2018).

The government has been geared towards trying to make inflation rate in Sierra Leone a single digit but all efforts have been to no avail. The government has put all efforts into making the inflation rate a single digit instead of a double digit but alas the inflation rate in 2017 was 16.30. However most previous studies on inflation have focused on the effect it brings about on the economic growth of developed countries, therefore

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this research is going to focus on the effect it has on the economic growth of developing countries with particular focus on Sierra Leone. Over the years we have noticed that the highest rate of inflation was in 2017 with 72.8% which according to Mordi et al (2017) was due to excess money supply, scarce foreign exchange and severe shortages in commodity supply, as well as continual labor and political unrest following the annulment of the June 1993 elections and the lowest was in 2017 with 5.40%.

According to Piano (2017), businesses and house-holds are likely to perform poorly in period of high unpredictable inflation. Even though some studies suggest that moderate inflation helps in economic growth, the general weight of evidence so far clearly indicate that inflation is distress to growth, it is therefore imperious to conduct a research work on the impact of inflation on Sierra Leone economic growth which is the main objective of this research work.

Having a view on the effect of inflation on Sierra Leonean economy and realizing that the problems caused by the effects of the growth of inflation is becoming unbearable to the citizens and the entire economy and it becomes necessary to analyze the effect of inflation on economic growth.

The problem of inflation in Sierra Leone was brought about by the mineral glut in 1980s, which resulted into balance of payment deficits leading to foreign exchange crisis that necessitated various measures of import restrictions. The resultant shortage of goods and services for local consumption spurred the inflation rate to rise from 20% in 1981 to 39.1 % in 1984. With the adoption of the structural adjustment programme (SAP) in September 29, 1986, there was a temporal reduction in fiscal deficit as government removed subsides and reduce her investment in the economy but as structural adjustment programme (SAP) policies gathered momentum, there was a fall in growth rate of gross domestic product (GDP) in 1990 from 8.3%to 1.2% in 1994 with inflation rising from 7.5% in 1990 to 57% in 1994 .In 2017, inflation rate rose to 72.8% due to increased lending rate, the policy of guided deregulation and lagged impact of fiscal indiscipline. Inflation is unfavorable to economic growth but some researches that have been conducted have stated it is sustainable for economic growth if it is stable and maintained at a low rate. The problem of inflation is not new to Sierra Leone because it has been a major problem for the past few years. The relationship between inflation and economic growth has shown that it brings about a positive effect on some countries while some countries experience negative effects. Macroeconomists, policy makers and central monetary authorities of all the nations need to know whether inflation is beneficial to growth or detrimental to growth. We can see the complexity of the relationship between inflation and economic growth from the result of research conducted by different researchers. Theories also have different views on issue of inflation and economic growth. The direction of causal relationship between inflation and economic growth is also debatable. Some have shown bidirectional causality, unidirectional causality and no causality relationship between inflation and economic growth. Although, the relationship between the inflation rate and economic growth has been studied extensively, the exact relationship is not well defined and the empirical results and policy recommendations from the studies vary and sometimes are in conflict. Although many recent studies have insisted that inflation affects economic growth negatively or that inflation promotes growth.

II. Literature Review

a) *Conceptual Review*

i. *Concept of Inflation*

Inflation can be defined as the increase in the general price level of goods and services and it is usually measured by the Consumer Price Index (CPI) which is traditionally used as a proxy to determine the amount of inflation affecting the Sierra Leonean economy and it can be defined as a measure of the average change over time in the prices paid by consumers for a market basket of consumer goods and services. This basket of goods and services includes: Food and Beverages, Housing, Clothing, Transportation, Medical Care, Recreation, Education and Communication and Other Goods and Services (Bayo, 2015).

Inflation can also be defined as a persistent increase in the level of consumer prices or a persistent decline in the purchasing power of money, caused by an increase in available currency and credit beyond the proportion of available goods and services (Webster, 2000). Mises (1952) opined that inflation is an increase in the quantity of money without a corresponding increase in the demand for money, i.e., for cash holdings. Also, Dubon (2013) explained that inflation is a sustained rise in general price level which is in line with the definition of James (2011). However, he added that this phenomenon occurs when the aggregate demand in normal value is greater than the real productive capacity of the economic which is also in line with the definition of Keynes.

The structuralists argue that inflation is crucial for economic growth while the monetarists posit that inflation is harmful to economic growth (Doguwa, 2012). Several empirical studies confirm the existence of either a positive or negative relationship between these two major macroeconomic variables even Mubarik (2015) argue that low and stable inflation promotes economic growth and vice versa. Omoke (2010) lends him support by emphasizing that despite this surplus of studies both for developing and developed countries, the literature on

inflation and economic growth in Sierra Leone is still very scanty. The formulation and implementation of monetary policy by the central bank of Sierra Leone (CBSL) was aimed at maintaining price stability which is consistent with the achievement of sustainable economic growth.

ii. *Concept of Economic Growth*

Economic Growth is expressed as national income, which is defined by Alfred Marshal in his book, Principle of Economics (1890), as the labor and capital of a country acting on its natural resources, producing yearly a certain net aggregate of material and immaterial commodities with all kinds of services, including net income due from foreign investments. Economic growth can be defined as an increase in the capacity of an economy to produce goods and services compared from one period to another (Lefty, 2012). Economic growth can also be defined as the increase in market value of goods and services produced by an economy over a period of time in a country. It is usually measured as percentage increase in real gross domestic product (RGDP) which is gross domestic product (GDP) adjusted for inflation which is defined a measurement of economic output that accounts for the effects of inflation or deflation. It provides a more realistic assessment of growth than nominal GDP. Without real GDP, it could seem like a country is producing more when it's only that prices have gone up.

The positive impact of the long-term growth in an economy is that there will be an increase in national income and the level of employment which will increase the standard of living for the society, generate more tax income for government spending to be used for the further development of the economy which will lead to a reduction in poverty and all this cannot occur without economic development. Important factors that affect economic growth positively are the quality and quantity of available human resources. The quality is dependent on its skills, creative abilities, training and education. Natural resource is also another factor which are the resources that are produced by nature. Then we have capital formation, this refers to all the produced means of further production, such as roads, railways, bridges, canals, dams, factories, seeds, fertilizers, etc. Technological development is also one of the factors and it involves application of scientific methods and production techniques. Finally, we have the social factors which include the customs, traditions, values and beliefs that contribute to the growth of an economy.

b) Theoretical Review

The theoretical review of this study will be based on the relevant theories that relate to both inflation and economic growth. There are various theories but the ones that will be discussed are the endogenous growth theory, the Solow-swan growth theory and the Harrod-Domar growth model.

i. *Endogenous Growth Theory*

Endogenous growth theory which was developed by Paul Romer and Robert Lucas which is also known as New Growth Model placed greater emphasis on the concept of human capital. How workers with greater knowledge, education and training can help to increase rates of technological advancement and it claims that economic growth is primarily the result of endogenous and not external forces. Endogenous growth theory believes that investment in human capital, innovation, and knowledge are significant contributors to economic growth. The theory also focuses on positive externalities and spillover effects of a knowledge-based economy which will lead to economic development. The endogenous growth theory primarily holds that the long run growth rate of an economy depends on policy measures. For example, subsidies for research and development or education increase the growth rate in some endogenous growth models by increasing the incentive for innovation. Endogenous growth theory is the rate of economic growth strongly influenced by human capital and rate of technological innovation. The growth rate depends on the rate of return on capital i.e. if inflation decreases the rate of return, it will reduce capital accumulation which will in turn reduce economic growth

ii. *The Solow-Swan Growth Theory*

The Solow–Swan model was developed independently by Robert Solow and Trevor Swan in 1956 and it was set within the framework of neoclassical economics. Their theory attempts to explain long-run economic growth by looking at capital accumulation, labour or population growth and the technological progress. They considered economic growth as a result of external factors in an economy. The neo-classicalist stated that the level of technological change is determined exogenously i.e. it is independent of all other factors including inflation. The Solow growth theory is based on the assumptions that there are constant returns to scale, diminishing returns to capital, independently determined technological progress and substitutability of labour and capital. He explained that higher savings/investment rates will increase capital accumulation per worker which will in turn lead to more output per worker. The model assumes that technological progress will grow at a constant steady-state, which determines the growth of output. The theory states that economic growth will not take place unless there are technological advances, and that if all nations have access to the same technology, then the standard of living will all become equal. Economic growth comes from adding more capital and labour inputs and also from ideas and new technology. The key assumption of the Solow-Swan model is that capital is subject to diminishing returns in a closed economy. The production function of neoclassical growth theory is

used to measure the growth and equilibrium of an economy and it is expressed as;

Y=F (K, AL)

Where;

Y= Gross Domestic Product (GDP)
K= Share of Capital
L= Labour
A= Technology

The models in this framework can yield diverging results with regard to the inflation-growth relationship, the relationship can either be positive (Tobin Effect), negative (Stockman Model) or no relationship whatsoever (Sidruaski, 2016)

iii. *Harrod- Domar Growth Theory*

The Harrod-Domar economic growth model is a type of neo-classical growth model and it stresses the importance of savings and investment as key determinants of growth. The model helps to explain how growth has occurred and how it may occur again in the future. Growth strategies are the things a government might introduce to replicate the outcome suggested by the model. However, it depends on how efficient the investment is. If savings is too high it can lead to lower growth because people cannot afford to consume. Basically, the model suggests that the economy's rate of growth depends on: The level of national saving and the productivity of capital investment (this is known as the capital-output ratio). Basically, the Harrod-Domar model says: Rate of growth of GDP = Savings ratio / capital output ratio.

c) Empirical Review

Osuala, Osuala and Onyeike (2013) examined the impact of inflation on economic growth using Sierra Leone as a case study within the period of 1970-2011 using the variables Economic growth and Inflation Rate using OLS, ADF, ECM and Granger causality test. The results from the research show that a statistically significant positive relationship exists between inflation and economic growth in Sierra Leone. Hence, the "bad era of double digit inflation rate" could be effectively utilized by the Sierra Leone government to erase the country's debt burden. In other words, instead of spending billions of naira in negotiation for "debt forgiveness", the government should "inflate away her debt".

Idalu (2015) did a research on the impact of inflation on economic growth using Sierra Leone as a case study within the period of 1970-2013 with the variables as economic growth, inflation rate, unemployment rate using VAR, Granger Causality. The findings from this study shows that the short run model conformed to the prior expectation that there is a positive relationship between inflation and economic activities and a negative relationship between unemployment and economic activities, while in the long run the result showed that there is a negative relationship between inflation and economic growth.

Olu and Idih (2015) examined the relationship between inflation and economic growth in Sierra Leone from 1980-2011 with the variables as economic growth, inflation rate, exchange rate, input of labor and input of capital using the OLS. The regression result showed that inflation rate in line with prior expectations had a positive relationship but non-significant with the economic growth rate. This suggested that as the GDP rises inflation also rises, suggesting that there has been no effectiveness in the monetary policies aimed at tackling or controlling inflation rate in Sierra Leone.

Aminu, Manu and Salihu (2013) investigated the impact of unemployment and inflation on economic growth in Sierra Leone from 1986 to 2010 by employing Augmented Dickey-Fuller (ADF) approach, Johansen co integration test and Granger causality test. The results of the stationarity test showed that all the variables were stationary at first difference. The results of the Johansen co integration test indicate long run relationship among economic growth, unemployment and inflation. The results of the Granger causality showed that unemployment and inflation granger cause RGDP in the economy.

Omoke and Ugwuanyi (2010) tested the relationship between money, inflation and output by employing co integration and Granger-causality test analysis. The findings revealed no existence of a co integrating vector in the series used. Money supply was seen to Granger cause both output and inflation. The result suggest that monetary stability can contribute towards price stability in Sierra Leonean economy since the variation in price level is mainly caused by money supply and also conclude that inflation in Sierra Leone is too much extent a monetary phenomenon. They find empirical support in context of the money-price-output hypothesis for Sierra Leonean economy.

Ahmed and Mortaza (2015) examined the nexus between inflation and economic growth in Bangladesh for the period 1980-2015 by employing co integration test and error correction model. The study employed consumer price index (CPI) and gross domestic product (GDP) in the investigation. The results revealed that long run relationship exists between inflation and economic growth. Similarly, the results showed that inflation has negative relationship with economic growth in Bangladesh for the period studied.

III. Methodology

This research highlighted the method through which the data was collected, techniques used for the analysis of the data. and the reserch design for easy interpretation, as well as method employed for data presentation and analysis techniques. It also specified

apriori expectation in relation to the stated hypothesis, estimated and evaluated the model in the making of sound statistical inference to the model. This study employed quantitative secondary data and analysed this data with the software E-views 9.0 to generate an appropriate result to the research work.

a) Model Specification

The model used in the study which had earlier been reviewed are specified below:

GDP = f {INFR, INTR, EXCHR}

Where;

GDP= Gross Domestic Product at constant prices
INFR= Inflation Rate
INTR = Interest Rate
EXCHR = Exchange Rate

However, this study modified the scholars' work by using Annual Growth Rate as dependent variable rather than just GDP at constant price to measure economic growth. In that regard, the model used is specified thus:

GR = f {INFR, REER, RIR} .....[i]
INFR = f {REER, RIR} ..... [ii]

Where;

GR= Annual Growth Rate
INFR= Inflation Rate
RIR = Real Interest Rate
REER = Real Effective Exchange Rate

Where model {i} was used to achieve objective 1 and model {ii} was used to achieve objective 2.

i. *Justification of Variables in the Model*

GR (Annual Growth Rate): This can be defined as the change in the value of a measurement over the period of a year. It is also a useful tool in identifying the trends of investment.

INFR (Inflation Rate): This is an increase in the general level of prices which is generally measured by consumer price index.

REER (Real Effective Exchange Rate): This is the weighted average of a country's currency in relation to the index or basket of other major currencies, adjusted for the effects of inflation. This is an important measure when assessing the trade capability of a country's currency and current import/export situation.

RIR (Real Interest Rate): This is an interest rate that has been adjusted to remove the effects of inflation to reflect the real cost of funds to the borrower and the real yield to an investor.

μ (Random Error Term): This is the stochastic variable that is included in a model to account for variables that affect the dependent variables but has been excluded in the model. The random error has its probabilistic properties such as:

$$Y = f(x) \quad \text{.....(3.1)}$$

$$GR = f(INFR, REER, RIR) \quad \text{.....(3.2)}$$

$$INFR = f(REER, RIR)$$

The model can be written explicitly as:

$$\Delta GR = \beta_0 + \beta_1 GR_{t-1} + \beta_2 INFR_t + \beta_3 INFR_{t-1} + \beta_4 REER_t + \beta_5 REER_{t-1} + \beta_6 RIR_t + \beta_7 RIR_{t-1} + \mu_t \quad (3.3)$$

$$\Delta INFR = \beta_0 + \beta_1 INFR_{t-1} + \beta_2 REER_t + \beta_3 REER_{t-1} + \beta_4 RIR_t + \beta_5 RIR_{t-1} + ECM_{t-1} \quad \text{.....(3.4)}$$

Where: t is the Time series; $\beta_0$is the intercept; β_1 *to* $\beta_7$are the parameters to be estimated.

The Heteroscedasticity will be reduced by converting the explicitm model which are the data from rates and absolute terms into the log-log form.

$$\text{GR} = \hat{\beta}_0 + \hat{\beta}_1 INFR + \hat{\beta}_2 REXR + \hat{\beta}_3 RINR + \mu_t \quad \text{.....} \quad (3.4)$$

b) Ethical Consideration

Compliance with the relevant principles of acknowledging various authors used in the work to avoid plagiarism was ensured. Dishonest conduct includes manipulation of design and methods, retention or manipulation of data. The researcher avoided any form of dishonesty by using data as obtained by the research instrument.

IV. Results and Discussion

This research focused on the estimation of the effect of Inflation on the Economic growth of Sierra Leone using the models specified in the previous research. Therefore, the analysis was broken down into two models which was estimated differently in order to determine their effects distinctively. This research commenced with the data presentation, a discussion of the descriptive statistics and trend analysis of the variables involved in the model and consequently proceeded to pre-test the data for unit roots using the Augmented Dickey-Fuller and Phillip Perron tests. Upon determining the order of unit root test, this study proceeded to use Auto regressive distributions lag (ARDL) to determine the short run and long run co-

integrating relationship of the explanatory variables on the dependent variable. This research concluded with the post estimation tests.

a) Descriptive Statistics

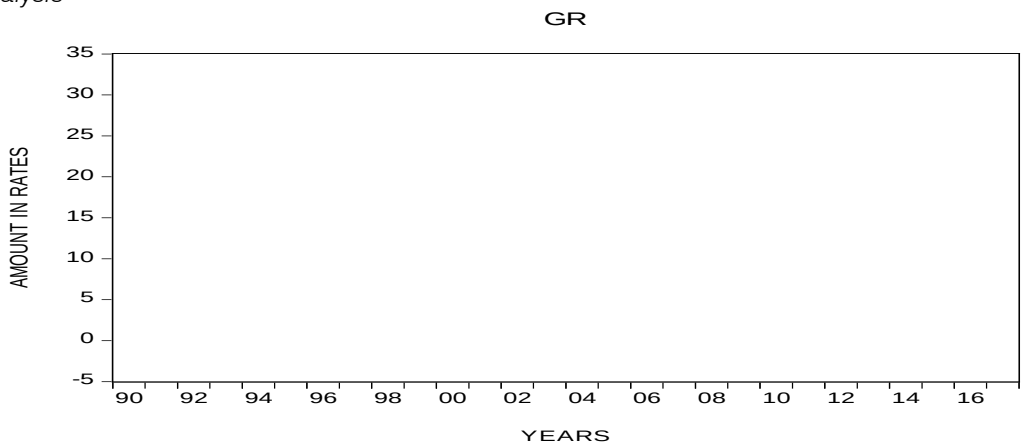
The summary of the descriptive statistics of the variables is presented in table below. The median for the Annual growth rate, Inflation rate, Real effective exchange rate and Real interest rate are 4.345171, 12.54679, 95.52759, 5.879259 respectively and this shows this is the average value of the variables over the period of years covered. The large difference between the minimum and maximum values of the series gave the result that there is a significant variation in the trends of the variable over the period of consideration. Also, the results based on the statistical distribution of the series shows that all the series are positively skewed except real interest rate which implies that there are disturbances in the variable. However, Annual growth rate has the longest tail. The value of kurtosis indicates the flatness of the distribution of the values on a variable over time. The values of the kurtosis fall in the range of less than 3, greater than 3 or equal to 3 depending on the flatness of the values of the variable over time. Variants of the kurtosis are platykurtic ($k < 3$), mesokurtic ($k = 3$) and leptokurtic ($k > 3$). The kurtosis value as shown in the descriptive statistics for Growth Rate, Inflation rate, Real Effective Exchange Rate and Real Interest Rate are 14.21331, 5.654853, 5.558344 and 4.277908 respectively and this indicates that the variables are leptokurtic indicating that the variables have a normal distribution. The Jacque-Bera statistics is a goodness of fit to check whether the sample data have the skewness and kurtosis matching a normal distribution.

Table 4. 2: Descriptive Statistics

	GR	INFR	REER	RIR
Mean	5.218349	18.68734	107.0648	2.263398
Median	4.345171	12.54679	95.52759	5.879259
Maximum	33.73578	72.83550	269.2031	25.28227
Minimum	-1.616869	5.382224	48.96753	-43.57266
Std. Dev.	6.527226	17.42595	52.17844	17.29455
Skewness	3.073019	1.962213	1.736876	-1.225439
Kurtosis	14.21331	5.654853	5.558344	4.277908
Jarque-Bera	190.7640	26.19092	21.71408	8.913161
Probability	0.000000	0.000002	0.000019	0.011602
Sum	146.1138	523.2456	2997.815	63.37513
Sum Sq. Dev.	1150.326	8198.922	73509.91	8075.739
Observations	28	28	28	28

Source: Author's computation using E-views 9.0 (2019)

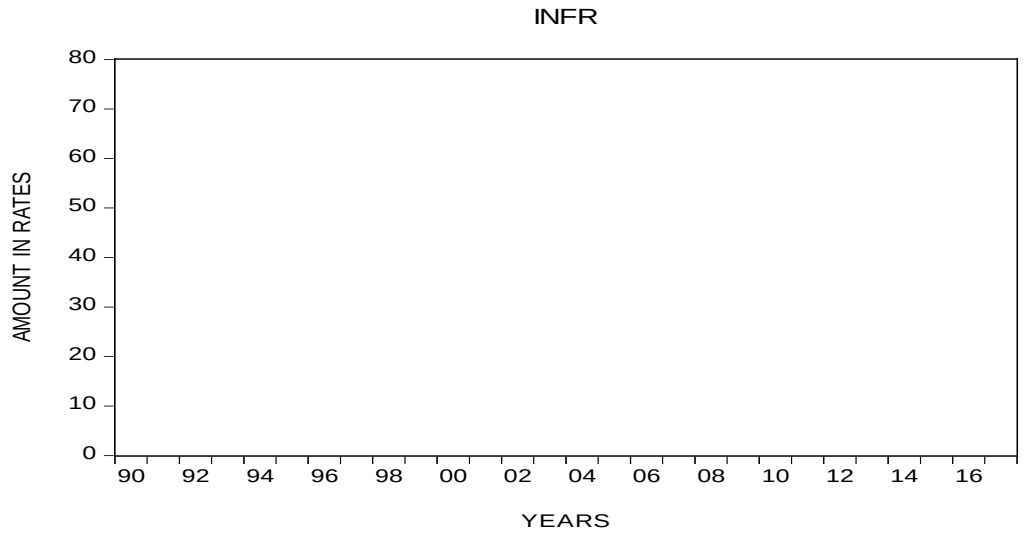
ii. *Trend Analysis*



Source: Author's computation using E-views 9.0 (2019)

Figure 4.1: Trend of Annual Growth Rate from 1990 -2017

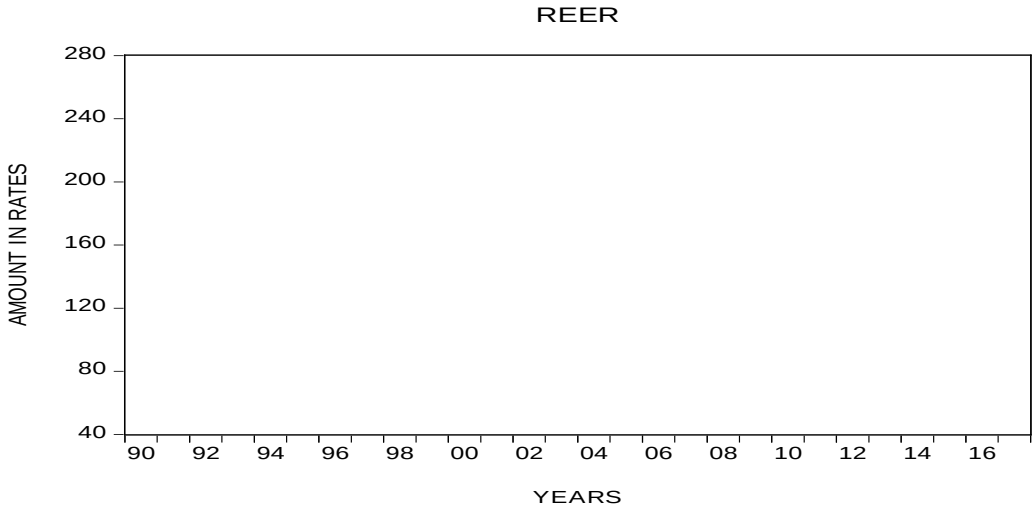
Figure 4.1 represents the trend of the Annual Growth Rate of Sierra Leone. There were major fluctuations in the growth rate in Sierra Leone. In 2013 and 2004 we had 10% and 33% respectively which were the highest growth rates within the period covered then it drastically fell in 2015 to 3.44% and we continued to experience positive fluctuations until 2016 where we had -1.86% which was a result of the economic recession that was observed during that period of time.



Source: Author's computation using E-views 9.0 (2019)

Figure 4.2: Trend of Inflation Rate from 1990 -2017

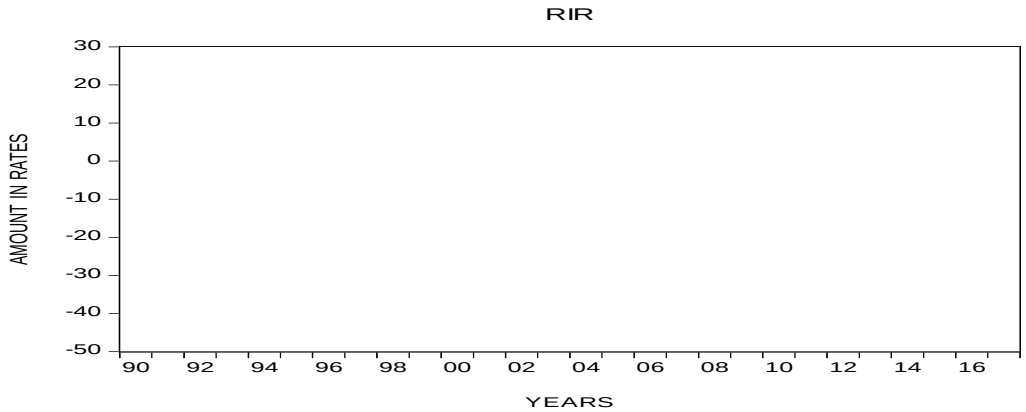
Figure 4.2 represents the trend of the Inflation rate of Sierra Leone. There were major fluctuations in the inflation rate of Sierra Leone. From 1990, inflation rate started at 7.36% then it rose to 57% in 1993 and was at its peak in 2017 at 72.8%. and was then was followed by a drastic fall in 1998 than it maintained minor fluctuations from 2000 up to 2017 which was its lowest value at 5% and we experienced fluctuations within 2014 - 2016 which was a result of the economic recession that was observed during that period of time.



Source: Author's computation using E-views 9.0 (2019)

Figure 4.3: Trend of Real Effective Exchange Rate from 1990 -2017

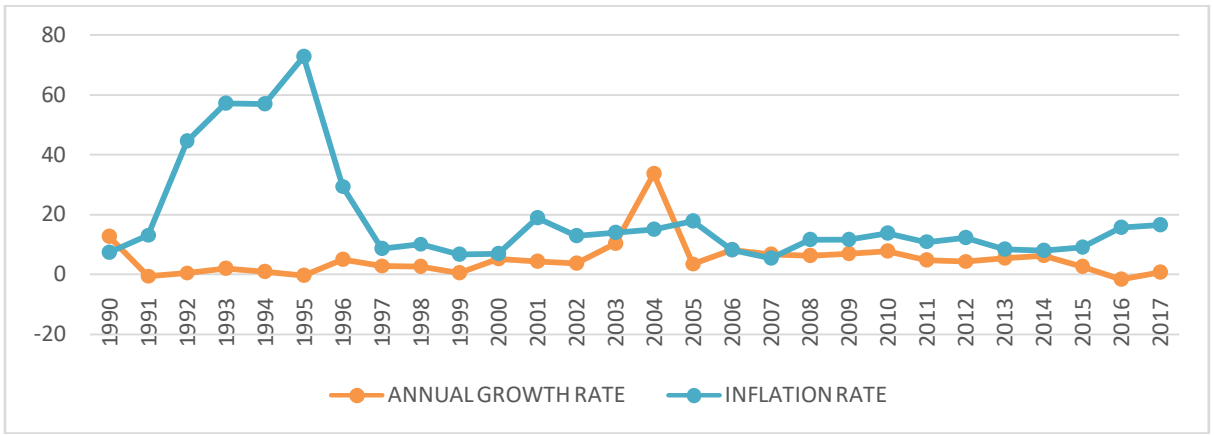
Figure 4.3 represents the trend of Real Exchange Rate. The trend reveals that over the years the naira has depreciated and struggled to appreciate. In 1998 it skyrocketed to 269.203% which was the highest value within the years covered and then it dropped drastically in 1999 to 68.26% and this might be as a result of civilian government assessing power in Sierra Leone. After that Real Effective Exchange Rate has since then struggled on a steady movement at a decreasing rate. The fluctuations in 2014-2017 could be as a result of the devaluation in naira that occurred at that time. The exchange rate is trying to find its way upwards but has not made any substantial progress.



Source: Author's computation using E-views 9.0 (2019)

Figure 4.4: Trend of Real Interest Rate from 1990 -2017

From 1990, it rose in 1992, fell in 2017 and climbed up again in 1998. From 2000 it fell and climbed up again in 2002 and fell again in 2013. The variable real interest rate did not have any major rise again with substantial increase after that. It maintained minor fluctuations from 2004 up to 2018 when it had a drastic fall in 2018 then another rise in 2010 and continued to slightly move upward. After 2012 there was a decline and the real interest rate has continued to fluctuate on that low level. The fluctuation in values can be attributed to various changes in the monetary policies over time.



Where: GR=INFR

Source: Authors computation using Microsoft Excel Work package 2016

Figure 4.5: Trend of the Annual growth rate and Inflation rate from 1990-2017

Figure 4.5 represents the trend of Annual Growth Rate and Inflation Rate. In 1990, Annual Growth Rate and Inflation Rate had 12% and 7% respectively. In 2017 when inflation was at its peak which was 72%, Sierra Leone experienced a negative growth rate which was -0.3%. In 2000, both variables were on the same level which was 5%, in 2015 we also experienced high inflation rate at 17% and a 3% growth rate. During the period of recession which was between 2014-2016 we had 15% as the average inflation rate while growth rate has negative values. It can be seen that during the period of high inflation, Sierra Leone experienced low growth rate and vice versa

b) Data Analysis

Empirical analysis was done with the use of Econometric Views 9.0 (E-Views) analytical software which was used to estimate the model and the following results were reflected in the subsequent sections.

i. *Unit Root / Stationary Test Results*

This section explained the application of the unit root test which was carried out on the variables to determine their stationarity levels. Two tests were implemented here which were the Augmented Dickey Fuller (ADF) test and the Phillip Perron test to provide reliability and credibility on the data before further carrying out subsequent tests. This test was based on two statement of hypothesis which are the null and alternative hypothesis. The null hypothesis stated that the variable is not stationary while the alternative hypothesis postulated that the variable is stationary. The decision rule upon on which difference was selected is based upon the decision criteria which states that if the absolute test statistic is greater than the absolute critical value then reject the null hypothesis and accept the alternative hypothesis while if the absolute test statistic is lesser than the absolute critical value then accept the null hypothesis and reject the alternative hypothesis.

Table 4.3: Results of the Augmented Dickey Fuller Test

Series	5% Critical value	ADF (prob.)	ADF Test Statistics	Equation Specification	Order of Integration
GR	-2.976263	0.0026	-4.265394	INTERCEPT	I(0)
INFR	-2.981038	0.0032	-4.195171	INTERCEPT	I(1)
REER	-2.981038	0.0007	-4.840307	INTERCEPT	I(1)
RIR	-2.976263	0.002	-5.233210	INTERCEPT	I(0)

Source: Author's computation using E-views 9.0 (2019)

In the table above, we can see the results whereby the variables, growth rate, Inflation rate and real interest rate in the previous year were all stationary at levels because their respective absolute test statistic was greater than their 5% critical values at constant at intercept which made the rejection of the null hypothesis but to accept the alternative hypothesis. To promote the reliability of the results, the probability was also tested and each of the variables respective probabilities were lower than the 5% level of significance but the variable, inflation rate and real effective exchange rate were not stationary at levels but at first difference. The results of the variables being stationary at first difference made it inappropriate for the usage of the Ordinary Least Square (O.L.S) method.

The second stationarity test used was the Phillip Perron Test which its decision upon on which difference should be selected is based upon the decision criteria which states that if the absolute test statistic is greater than the absolute critical value then reject the null hypothesis and accept the alternative hypothesis while if the absolute test statistic is lesser than the absolute critical value then accept the null hypothesis and reject the alternative hypothesis.

Table 4.4: Results of the Phillip Perron Test

Series	5% Critical value	Phillip Perron (prob.)	Phillip Perron Test Statistics	Equation Specification	Order of Integration
GR	-2.976263	0 .0025	-4.281466	INTERCEPT	I(0)
INFR	-2.981038	0.0035	-4.160126	INTERCEPT	I(1)
REER	-2.981038	0.0007	-4.839997	INTERCEPT	I(1)
RIR	-2.976263	0.0002	-5.239671	INTERCEPT	I(0)

Source: Author's computation using E-views 9.0 (2019)

In the table above, we can see the results whereby the variables, growth rate, Inflation rate and real interest rate in the previous year were all stationary at levels because their respective absolute test statistic was greater than their 5% critical values at constant at intercept which made the rejection of the null hypothesis but to accept the alternative hypothesis. To promote the reliability of the results, the probability was also tested and each of the variables respective probabilities were lower than the 5% level of significance but the variables, inflation rate and real effective exchange rate was not stationary at levels but at first difference. The results of the variables being stationary at first difference made it inappropriate for the usage of the Ordinary Least Square (O.L.S) method, therefore the tests to be carried out will be achieved with the aid of the Auto Regressive Distribution Lag (ARDL). Therefore, the optimal lag length had to be determined and was shown in the next section.

For disaggregation purpose, the estimation was grouped into Model A and B, where Model A was used to determine the result of objective 1 and Model B was used to determine the major determinants of inflation in Sierra Leone which is objective 2. It is pertinent to note that Autoregressive Distributed Lag (ARDL) method and Error Correction Model (ECM) was applied to both models.

ii. *Optimal Lag Length Selection*

A lag length with the lowest value of any of the criteria will be considered as the optimum lag length and thus be selected.

Model A- [GR = INFR + REER + RIR]

Model B - {INFR = REER + RIR}

Table 4.5: Results of the Lag Length Criteria for Model A

Lag	LogL	LR	FPE	AIC	SC	HQ
1	-421.2668	NA	4.81e+09*	33.63591*	34.41012*	33.85886*
2	-409.5096	16.27921	7.17e+09	33.96228	35.51071	34.40817

Source: Author's computation using E-views 9.0 (2019)

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

The results in table above portrays different lag length criterions and the respective lag length chosen. Schwarz information criterion, Akaike Information criterion, The Final Prediction error, and Hannan-Quinn information criterion selected the lag length 1. The implication of the lag length selected at 1 explains how the outcomes of the previous year has an effect on the current year. In this research, the lag length selected was 1.

Table 4.6: Results of the Lag Length Criteria for Model B

Lag	LogL	LR	FPE	AIC	SC	HQ
1	-336.9709	NA	72755243*	26.61315*	27.04864*	26.73855*
2	-328.1927	13.50496	75675843	26.63021	27.50120	26.88102

Source: Author's computation using E-views 9.0 (2019)

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

The results in table above portrays different lag length criterions and the respective lag length chosen. Schwarz information criterion, Akaike Information criterion, The Final Prediction error, and Hannan-Quinn information criterion selected the lag length 1. The implication of the lag length selected at 1 explains how the outcomes of the previous year has an effect on the current year. In this research, the lag length selected was 1.

iii. *Auto Regressive Distributed Lag (ARDL)*

This test is suitable when the variables or series have different order of integration that is, if all variables are stationary at levels I (0) and first difference I (1). The Autoregressive Distributed Lag test was proposed by Pearson, Shin and Smith (2010).

Model A- [GR = INFR + REER + RIR]
Model B - {INFR = REER + RIR}

iv. *Bounds Co-Integration Test*

This test is conducted in order to determine if there is a long run relationship among the variable.

H_0: There is no long run relationship among the variables

H_1: There is a long run relationship among the variables

Table 4.7: Bounds Co integration Test Result for Model A

Test Statistic	Value	k
F-statistic	4.851091	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Author's computation using E-views 9.0 (2019)

From the table above, the bounds co-integration test was employed to test for co-integration among variables or series. The F-statistic which is 4.851091 is greater than lower and upper bound of the 5% level of significance of the critical value bounds and at all level of significance. Therefore, we reject the null hypothesis and accept the alternative hypothesis that there is co-integration among the variables.

Table 4.8: Bounds Co integration Test Result for Model B

Test Statistic	Value	K
F-statistic	2.157762	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Source: Author's computation using E-views 9.0 (2019)

From the table above, the bounds co-integration test is employed to test for co-integration among variables or series. The F-statistic which is 2.157762 is lesser than lower and upper bound of the 5% level of significance of the critical value bounds and at all level of significance. The results indicated no co integration, as it was inconclusive at the 5 per cent level, with the calculated F-statistics falling between the lower and upper critical values. Therefore, we accept the null hypothesis and reject the alternative hypothesis that there is no co-integration among the variables which results to following the process of Error Correction Model (ECM) which will analyze the short run relationship.

v. *Short Run and Long Run Model Estimation for Model A*

Table 4.9: Short Run Auto Regressive Distributed Lag (ARDL) for Model A

Variables	Coefficient	t- Statistics	Prob.
INFR	-0.609630	-3.382502	0.0277
REER	-0.259311	-4.282523	0.0128
RIR	0.021872	0.283197	0.7911
C	51.27620	4.135758	0.0144
CointEq(-1)	-2.023150	-4.000816	0.0161

Source: Author's computation using E-views 9.0(2019)

The estimated short run model

GR= 51.27620 -0.609630 INFR - 0.259311 REER + 0.021872RIR

Inflation rate has a negative coefficient of -0.609630, Real effective exchange rate has a negative coefficient of - 0.259311 which was in conformity with Thayaparan (2014) and Ezeanyeji and Ejefobihi (2015), Real interest rate has a positive coefficient of 0.021872 and the intercept has a positive coefficient of 51.27620 which is the value of annual growth rate when the independent variables are zero (0).

Inflation Rate is significant in the short run. Real Effective Exchange Rate is significant in the short run. Real Interest Rate is not significant in the short run which was in conformity with Kasidi and Mwakanemela (2013) and Prasanna and Gopakumar (2010).

For Inflation Rate, a one percent increase in inflation rate will lead to about 0.609630% decrease in Annual growth rate, also, and this is currently evident in Sierra Leone presently. For Real Effective Exchange Rate, a one percent increase real effective exchange rate will lead to about - 0.259311% decrease in Annual growth rate. For Real Interest Rate, a one percent increase in real interest rate will lead to about 0.021872% increase in Annual growth rate.

Table 4.10: Long Run Auto Regressive Distributed Lag (ARDL) for Model A

Variable	Coefficient	t-Statistic	Prob.
LOGCPI	-0.009515	-0.113590	0.9150
REER	-0.182170	-6.255907	0.0033
RIR	0.025517	0.187193	0.8606
C	25.344742	8.712669	0.0010
	R-squared	0.940225	
	Adjusted R-squared	0.656292	
	F-statistics	3.311432	
	Prob.(F-statistic)	0.127010	
	Durbin-Watson stat	2.565689	

Source: Author's computation using E-views 9.0 (2019)

The estimated long run model is:

GR = 25.344742 -0.009515 INFR -0.182170 REER + 0.025517 RIR

Inflation rate has a negative coefficient of-0.009515, Real effective exchange rate has a negative coefficient of -0.182170 which was in conformity with Thayaparan (2014) and Ezeanyeji and Ejefobihi (2015), Real interest rate has a positive coefficient of 0.025517 and the intercept has a positive coefficient of 25.344742 which is the value of annual growth rate when the independent variables are zero (0).

Inflation Rate is insignificant in the long run. Real Effective Exchange Rate is significant in the long run. Real Interest Rate is not significant in the long run which was in conformity with Kasidi, and Mwakanemela (2013), Prasanna and Gopakumar (2010) and Chude and Chude (2015)

For Inflation Rate, a one percent increase in inflation rate will lead to about 0.009515 % decrease in Annual growth rate, also, and this is currently evident in Sierra Leone presently. For Real Effective Exchange Rate, a one percent increase real effective exchange rate will lead to about 0.182170% decrease in Annual growth rate. For Real Interest Rate, a one percent increase in real interest rate will lead to about 0.025517% increase in Annual growth rate

vi. *Error Correction Model for Model B*

The Error Correction Model (ECM) is done to integrate the multivariate time series with details in the appendix. The error correction model is performed to determine the short run implications of the variables. The ECM involves using the lagged residual to correct for short run deviations from equilibrium. The lagged residual in the error correction model therefore plays the role of error correction in the model and for it to adequately play this role, its coefficient is meant to be negatively signed and statistically significant. The negative sign shows the convergence of the variables towards equilibrium while the positive sign shows the divergence of the variables from equilibrium. The absolute value of the co-efficient of the lagged residual represents the speed of adjustment and indicates how quickly equilibrium is restored in the system in the event of temporary deviations or displacements. With the ECM, the long run empirical relationship which was lost in the process of differencing to secure stationarity is gotten. However, note that the ECM is being used because model B did not pass the bounds test.

Table 4.11: Result of the Parsimonious error correction model for model B

Variable	Coefficient	t-Statistic	Prob.
C	17.60462	2.576283	0.0172
REER	0.022539	0.399221	0.6936
RIR	-0.414942	-2.357183	0.0277
ECM(-1)	0.664623	2.201697	0.0389

Source: Researcher's computations using E-views 9.0 (2019)

The short run model can be estimated from the parsimonious error correction model and it is written as;
INFR = 17.60462 + 0.022539REER - 0.414942RIR

The table above represents short run dynamics of the model.

From the result, real effective exchange rate has a positive insignificant relationship with annual growth rate in Sierra Leone while real interest rate has a negative significant relationship with annual growth rate in Sierra Leone. The result above shows that the coefficient of the error correction coefficient is positive and is also statistically significant at 5% level. Thus, the result shows that it will diverge towards equilibrium within the system, if there is any deviation from it in the short run. Its coefficient, which measures the speed of adjustment to equilibrium in the event of displacement from it, indicates that about 66% of the disequilibrium in the system is offset by the short run adjustment annually to enable it maintain long run equilibrium. The constant value remains positive. The rule of thumb is that the error correction term (ECM) must reflects a negative value and be statistically significant. The ECM value implies that 66% error in the model would be corrected if there is a deviation in the variables or in the long run.

vii. *Adjusted Coefficient of Determination*

Model A

The R^2 is the square of the correlation coefficient. R^2 is for simple regression, while the Adjusted R^2 is for multiple regression. From the regression result, the Adjusted R^2 is 0.656292. It reveals that 65.6292% of the variation in the dependent variable, annual growth rate is explained by the independent variables (inflation rate, real exchange rate and real interest rate), while 34.3708% is not explained in the model.

Model B

The R^2 is the square of the correlation coefficient. R^2 is for simple regression, while the Adjusted R^2 is for multiple regression. From the regression result, the Adjusted R^2 is 0.335012. It reveals that 33.5012% of the variation in the dependent variable, inflation rate is explained by the independent variables (real exchange rate and real interest rate), while 66.4988% is not explained in the model.

viii. *t-test or t-statistic*

The t-test is used to check for the significance of each variable. The hypotheses are stated below:

H_0: the variable is not significant
H_1: the variable is significant.

The decision rule is that if the probability value of the t-statistic is lesser than 0.05 level of significance, reject the null hypothesis and accept the alternative hypothesis that explains significance of the variable.

Table 4.12: t-test for Model A

Variables	Short run t- Statistic	Short run Prob.(t-statistic)	Long run t- Statistic	Long run Prob.(t-statistic)
INFR	-3.382502	0.0277	-0.113590	0.9150
REER	-4.282523	0.0128	-6.255907	0.0033
RIR	0.283197	0.7911	0.187193	0.8606

Source: Author's computation using E-views 9.0 (2019)

From the result above, we can deduce the following:

Inflation Rate has a t-statistics of -3.382502 and the probability value is 0.0277 in the short run. This is significant because the probability value is lesser than 0.05 level of significance. In the long run, the variable is not significant because its probability value is greater than 0.05.

Real Exchange Rate has generated a t-statistic of -4.282523 and a probability value of 0.0128 in the short run showing that it is significant at 0.05 level of significance because the probability value is lesser than 0.05. Also, it is significant in the long run because Real Effective Exchange Rate has a t-statistic of -6.255907 and a probability value of 0.0033 which is lesser than 0.05 level of significance.

Real interest rate has a t-statistic of 0.283197 and a probability value of 0.7911 in the short run. The value is not significant at 0.05 level of significance because its probability value is greater than 0.05. However, it is also not significant in the long run because the probability value is greater than 0.05 level of significance.

Table 4.13: t-test for Model B

Variables	Short run t- Statistic	Short run Prob.(t-statistic)
REER	0.399221	0.6936
RIR	-2.357183	0.0277

Source: Author's computation using E-views 9.0 (2019)

From the result above, we can deduce the following:

Real Exchange Rate has generated a t-statistic of 0.399221 and a probability value of 0.6936 in the short run showing that it is insignificant at 0.05 level of significance because the probability value is greater than 0.05.

Real interest rate has a t-statistic of -2.357183 and a probability value of 0.0277 in the short run. The value is significant at 0.05 level of significance because its probability value is lesser than 0.05.

The F-statistics measures the overall statistical significance of the variables. It is used to check for the joint significance of the model.

H_0: There is no statistical significance
H_1: There is statistical significance

The decision rule is that if the probability value of the F-statistics is lesser that 0.05 level of significance, reject the null hypothesis and accept the alternate hypothesis which states that there is statistical significance when testing the parameters in the model simultaneously.

xi. *F-test or F-statistic*

Table 4.14: F-test for Model A and B

Model	F-statistic	Prob. (F-stat)
1	3.311432	0.127010
2	5.198215	0.007251

Source: Author's computation using E-views 9.0 (2019)

The value of the F-statistic as shown in table below is 3.311432 with the probability of F-statistic as 0.127010, this indicates that the model is insignificant because it is greater than 5% level of significance.

Therefore, the independent variables do not jointly explain the changes in the annual growth rate.

The value of the F-statistic as shown in table below is 5.198215 with the probability of F-statistic as 0.007251, this indicates that the model is significant because it is lesser than 5% level of significance. Therefore, the independent variables jointly explain the changes in the annual growth rate.

c) Post-Estimation Tests

i. *Breusch-Godfrey Serial Correlation LM Test*

This test was aimed at ascertaining if the errors are correlated. In order to achieve this, the Breusch-Godfrey Serial correlation LM test will be employed. The null hypothesis stated absence of serial correlation but the alternative hypothesis states the presence of serial correlation. The decision rule is that if the probability of the F-statistic is greater than 0.05 level of significance, do not reject the null hypothesis and accept the alternate hypothesis if the probability of the F-statistic is lesser than 0.05 level of significance.

Model A- [GR = INFR + REER + RIR]
Model B - {INFR = REER + RIR}

Table 4.15: Results of Breusch-Godfrey Serial Correlation LM Test Result for Model A

F-statistic	0.532298	Prob. F (2,2)	0.6526
Obs*R-squared	8.337254	Prob. Chi-Square (2)	0.0155

Source: Authors computation using E-views 9.0 (2019)

From the result above, the probability of the F-statistic is 0.6526 which is greater than 0.05 level of significance. Therefore, we accept the null hypothesis that states that there is no serial correlation in the model.

Table 4.16: Results of Breusch-Godfrey Serial Correlation LM Test Result for Model B

F-statistic	1.883812	Prob. F(2,20)	0.1780
Obs*R-squared	4.121499	Prob. Chi-Square(2)	0.1274

Source: Authors computation using E-views 9.0 (2019)

From the result above, the probability of the F-statistic is 0.1780 which is greater than 0.05 level of significance. Therefore, we accept the null hypothesis that states that there is no serial correlation in the model.

ii. *Durbin Watson Model*

This test was performed to determine the level of auto-correlation.

Table 4.17: Results of the Durbin Watson Test Results for Model A

D*	D-UPPER	D-LOWER	DECISION
2.565689	1.747	1.104	Absence of autocorrelation

Source: Authors computation using E-views 9.0 (2019)

From the statistical tables, we obtained that d_L= 1.104, d_u=1.747 and d^*=2.565689 respectively. Therefore, $d_u < d^* < 4-d_L$, that is, 1.747 < 2.565689 < 2.896 we therefore accept the null hypothesis and conclude that there is no presence of autocorrelation in the model.

Table 4.18: Results of the Durbin Watson Test Results for Model B

D*	D-UPPER	D-LOWER	DECISION
1.405569	1.650	1.181	Absence of autocorrelation

Source: Authors computation using E-views 9.0 (2019)

From the statistical tables, we obtained that d_L= 1.181, d_u=1.650 and d^*=1.405569 respectively. Therefore, $0< d^* < (4 - d_U)$, that is, 0< 1.405569 < 2.350, we therefore accept the null hypothesis and conclude that there is no presence of autocorrelation in the model.

iii. *Heteroscedasticity Test*

The Breusch-Pagan-Godfrey heteroscedasticity test is used to test for heteroscedasticity and it is centered on the variance of the error term. This test helps to ascertain whether the variance of the error term is constant.

The hypotheses are stated below:

H_0: Homoscedasticity (there is constant variance in the error term)

H_1: Heteroscedasticity (there is no constant variance in the error term)

The decision rule is that if the probability of the F-statistic is greater than 0.05 level of significance, do not reject the null hypothesis of homoscedasticity and accept the alternate hypothesis if the probability of the F-statistic is lesser than 0.05 level of significance.

Model A- [GR = INFR + REER + RIR]
Model B - {INFR = REER + RIR}

Table 4.19: Result of Heteroscedasticity Test for model A

F-statistic	2.568074	Prob. F(19,4)	0.1864
Obs*R-squared	22.18159	Prob. Chi-Square(19)	0.2753
Scaled explained SS	0.552429	Prob. Chi-Square(19)	1.0000

Source: Author's computation using E-views 9.0(2019)

The probability of the chi-square as shown in the table above is 0.2753. Therefore, given that the prob. chi-square is greater than 5% level of significance, there is no heteroscedasticity in the model.

Table 4.20: Result of Heteroscedasticity Test for model B

F-statistic	1.024053	Prob. F(3,22)	0.4011
Obs*R-squared	3.185850	Prob. Chi-Square(3)	0.3638
Scaled explained SS	2.981733	Prob. Chi-Square(3)	0.3945

Source: Author's computation using E-views 9.0(2019)

The probability of the chi-square as shown in the table above is 0.3638. Therefore, given that the prob. chi-square is greater than 5% level of significance, there is no heteroscedasticity in the model.

iv. *Normality Test*

The test for normality was carried out using the Jarque-Bera Normality Test.

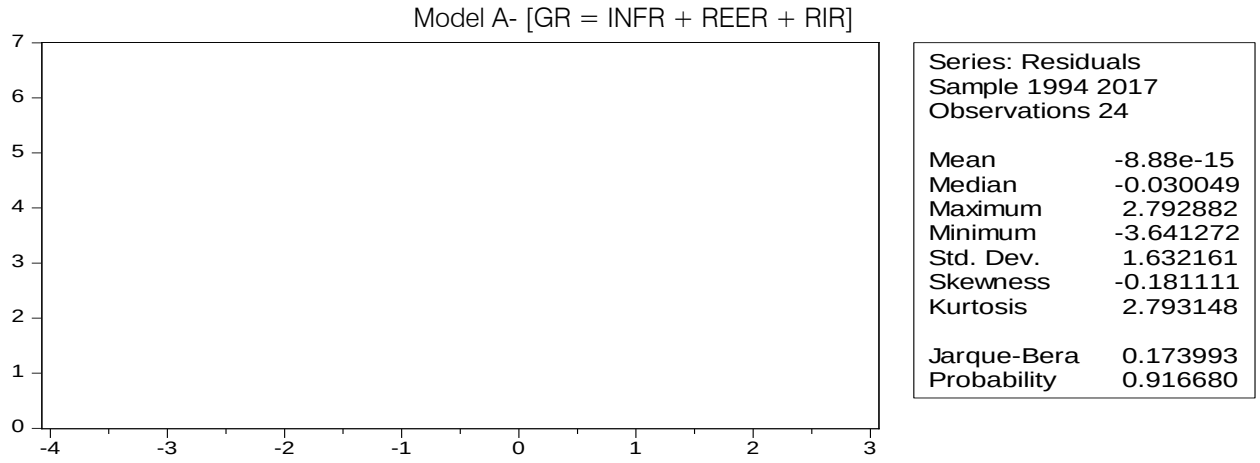


Figure 4.6: Normality Histogram for Model A

This test was carried out to check if there is a normal distribution among variables. The null hypothesis which says there is normality will be accepted because the probability value (0.916680) is higher than the critical value of 0.05. The test also confirmed that the variables are not statistically significant because the probability value is higher than the critical value. The variables are negatively skewed which means that the distribution has a long tail to the left.

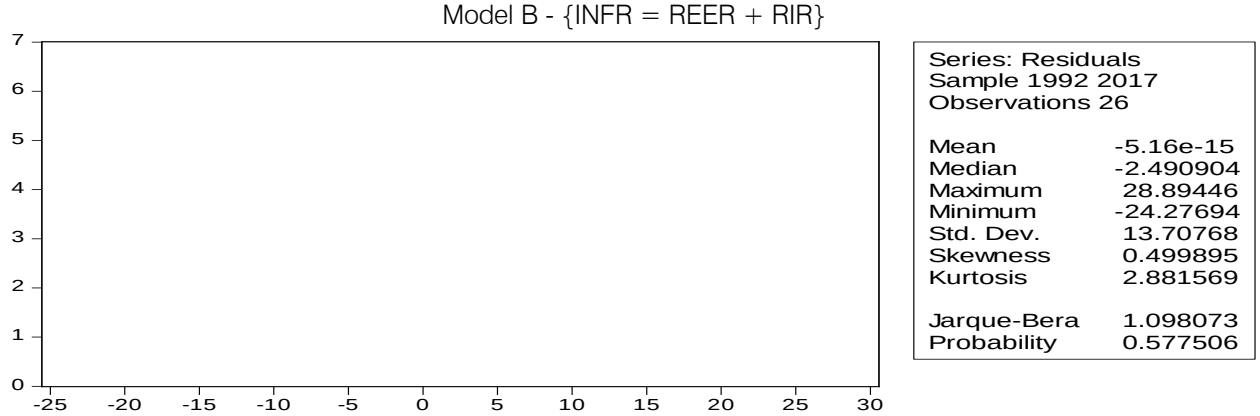


Figure 4.7: Normality Histogram for Model B

This test was carried out to check if there is a normal distribution among variables. The null hypothesis which says there is normality will be accepted because the probability value (0.577506) is higher than the critical value of 0.05. The test also confirmed that the variables are not statistically significant because the probability value is higher than the critical value. The variables are negatively skewed which means that the distribution has a long tail to the left.

The Ramsey reset test is used to test for linearity in a model. The Ramsey Reset test jointly explains whether the coefficient in the predicted squared or predicted cubed as the case may be equals to zero. The decision criteria for linearity is to accept the null hypothesis when the probability of the F-statistics is greater than 0.05 and accept alternative hypothesis when the probability is less than 0.05.

Model A- [GR = INFR + REER + RIR]

Model B - {INFR = REER + RIR}

v. *Linearity Test*

Table 4.21: Result of Ramsey RESET test for Model A

	Value	Df	Probability
t-statistic	3.130800	3	0.0520
F-statistic	9.801909	(1, 3)	0.0520

Source: Author's computation using E-views 9.0(2019)

Therefore, given that the probability of the F-statistics as shown in the table above is 0.0520, we do not accept the alternative hypothesis, that is, there is linearity in the model.

Table 4.22: Result of Ramsey RESET test for Model B

	Value	Df	Probability
t-statistic	4.678710	21	0.0001
F-statistic	21.89033	(1, 21)	0.0001

Source: Author's computation using E-views 9.0(2019)

Therefore, given that the probability of the F-statistics as shown in the table above is 0.0001, we accept the alternative hypothesis, that is, there is no linearity in the model.

V. Conclusion

Inflation has been a constant problem to developing countries since time immemorial as its constant increase reduces the chances of proper allocation of resources, skilful exchange of knowledge, better health care services, better job opportunities, better standard of living, per capita income and technology among countries and boosting of the economy, therefore this research paper sought to examine the relationship between inflation and economic growth in Sierra Leone from the period 1981 to 2017. After proper research and analysis were done on this study, it brought to my knowledge the fact that inflation still has a significant effect on the economic growth of Sierra Leone. Also, the major determinants of inflation in Sierra Leone are interest rate and exchange rate.

Based on the empirical research analysis and evaluation carried out in the previous research, this study has proposed the following economic recommendations below to enhance the economic growth of Sierra Leone;

1. Government should make tight fiscal and monetary policies to reduce the inflation rate of the country and have the most advantageous interest rate, and so as to increase the gross domestic product of the country and thereby attract more foreign investors to the country.
2. Government should increase the degree openness of the economy and this can be viable and thereby increase the percentage of foreign investors.
3. Government should provide infrastructural facilities to create an enabling environment to attract foreign investors.

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