

# The Liberalisation of Interest Rate and its Impact on the Nigerian Economy

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## *Abstract*

*The importance of interest rate in demand management is not well established in monetary theory. This is because much attention is not been paid to the impact of high interest rates policy on the real sectors of the economy via cost escalation and the associated impact on prices. However, the objectives of financial liberalization were to enhance efficiency in resource mobilization and allocation, as well as improving the effectiveness of monetary policy as a stabilization tool. Thus, this paper attempts to investigate the impact of interest rate liberalization on the Nigerian economy. The paper adopts the ordinary least square technique of estimation and the ARDL model was employed. The secondary data used were sourced from the National Bureau of statistics (NBS), Central Bank of Nigeria (CBN) and World Development Indicators (WDI). The study covered the periods 1981-2014. The results obtained show that interest rate liberalization impacted negatively on the Nigerian economy because high loan rate have increase the cost of capital which discourages capital and productive investment, raises inflation and encourages capital flight. Meaning that in the long-run, relationship exists between RGDP, CPS and EXR at 10% level while INR and INF are not significant at 10% level. Therefore, a well-developed financial market, improving the payment system, achieving social-political stability, maintaining consistency in macroeconomic policies, among others is recommended. Also, there is the need to encourage private sector-led economic policies by reducing the interest rate to a single digit. Thus, we recommend a guided liberalization policy.*

**Keywords:** Economy, Interest Rate, Liberalization, Nigeria

## **I. Introduction**

The role of interest rate in economic development cannot be overemphasized. In the literature, while some studies revealed that financial liberalization enhances efficiency in resource mobilization and allocation; thereby correcting the supply/demand imbalance in the economy, others are of the view that financial liberalization characterized by high interest rate discouraged investors from sourcing loan from the banks. In general, interest rates are influenced by a number of factors, prominent among them are: savings, investment, inflation, government spending, monetary policy and taxation ( Akerele, 2004).

In 1986, the federal government effected a policy shift by adopting a strategy of financial liberalization. Key elements in the strategy include liberalization of interest rate and exchange rates, promotion of market-based allocation of credit, enhance efficiency and competition in the financial system, among others. In line with this, the central Bank of Nigeria (CBN) increased its minimum re-discount rate to 15% from 10%. Also, the commercial banks minimum liquidity ratio was raised from 25% to 30%. The response of commercial banks has been to raise their lending rates between 17% and 20%, to the discomfiture of borrowers, especially small- scale industries. However, the problem has been that the market-based approach to interest rate management in Nigeria has always been associated with substantial interest rate volatility.

Theoretically, the underlying philosophy for the liberalization of an economy is the believe that factors of production or goods and services are optimally priced and allocated when their prices are freely determined in a competitive environment, hence, stability of growth in output and development( Ojo, 1991; Shaw, 1973). However, there is growing apprehension that interest rate liberalization does not

bring about economic growth in Less Developed Countries (LDC's). This is because small firms may not be able to compete favourably under market mechanism for credit allocation ( Isijola, 2002). A number of authors (Khan, 1989; Hossain, 1995; Hassan, 1992) all argued that because money markets are relatively thin and controlled in developing countries, the interest rate does not really represent the true opportunity cost of holding money. Interest rate will be higher permanently in the economy if its currency depreciates. Fall in interest rate in a given period causes depreciation of the currency in present period to compensate for future appreciation and improves current account through effect on terms of trade. Thus, the objective of this paper is to examine the impact of interest rate liberalization on the Nigerian economy. To achieve this objective, this paper is structured into five sections. A review of related literature will be next after the introduction. This will be followed by methodology, to be followed by results and discussions. Summary and recommendations concludes the paper.

## **II. LITERATURE REVIEW**

### **2.0 Theoretical Literature Review**

The basic theoretical framework of interest rate started with the classical school of thought. However, in the modern theory of interest rate, saving, investment, liquidity preference and the quantity of money are integrated at various levels of income for a synthesis of the loanable funds theory with the liquidity preference theory to construct two curves. That is, the IS curve representing the flow variable of the loanable funds formulation and the LM curve representing the stock variable of liquidity preference formulation. The equilibrium between the IS and the LM curves provides a determinate solution. However, the IS curve as a flow variable is inconsistent with LM curve as stock variable. So, savings will change the stock

of wealth. This inconsistency has been addressed by the logical framework of Romer (2000). Though, the functional defect notice in the embedded IS-LM model by Romer (2000) indicated that when interest rate is used as operation objective, IS cannot handle monetary policy problem. This further suggests that the position of effective problem of fiscal and monetary policy in macroeconomic centred on short run fluctuation which call for replacement with IS-MP model as advised by Romer (2000).

### **2.1 Concept of Interest rate**

Interest rate was first used as an instrument of Monetary Policy in Nigeria in 1962 following the introduction of money market instruments. The interest rate then was made competitive to ensure repatriation of funds kept abroad. During the period of high government borrowing for example, interest rate was reduced to minimize cost of servicing public debt, as was the case in the 1960's. Interest rate in Nigeria over the years has therefore played a pivotal/dominant role as one of the instruments used by the Federal Government in Managing Monetary Policy. The Structural Adjustment Programme (SAP), which was introduced by the Federal Government of Nigeria in 1986, was a comprehensive economic restructuring programme as it emphasized increased reliance on market forces. The deregulation of interest rates brought in Liquidity glut, high interest rates and volatile inter-bank interest rates which became a permanent feature of the Nigerian economy (Richard, et al, 2012).

### **2.2 Empirical Literature Review**

Adeniran, et al (2014) investigated the impact of interest rate fluctuation on the Nigerian economic growth using the ordinary least square (OLS) technique. The result indicated that interest rate and rate of inflation have negative impact on economic growth but not significant. Eregha (2010) examines

variations in interest rate and investment determination in Nigeria for the period 1970-2002 and using instrumental variable technique. The study revealed that variation in interest rate played a negative and highly significant role in investment determination in Nigeria. Obamuyi (2009) studied the relationship between interest rate and economic growth in Nigeria. The study employed error correction modeling techniques and revealed that lending rate has significant effect on economic growth. Albu (2006) studied trends in the interest rate, investment, GDP growth relationship. The study used two partial models. The study found that the behavior of the national economy system and interest rate-investment relationship converge to those demonstrated in the normal market economy. James, et al (2013) used OLS to identify the existing relationship between variables and concluded that the interest rate impact on economic growth in Nigeria, and a long-term relationship exists between interest rate and economic growth. In their study, Udoka and Roland (2012) used OLS technique to investigate the effect of interest rate fluctuation on the economic growth of Nigeria. The result of the findings revealed that: there existed an inverse relationship between interest rate and economic growth in Nigeria, meaning that increase in interest rate will decrease GDP of the country, thus retarding growth of the real sector.

Hidayat and Suman (2014) studied the effect of inflation, interest rates and government expenditure in Indonesia during the periods 2005-2012. It was found out that the independent variables has about 99% influence on economic growth. The result was however in line with Keynesian theory, which states that government spending spurs economic growth. In a related research, Richard, et al (2012) using multiple regression analysis of the ordinary least square employed to determine the impact of interest rate as well as other macroeconomic variables such as inflation

rate, exchange rate on capital market growth. Findings of the study revealed that interest rates have an adverse effect on capital market growth.

However, the experiences of countries with financial liberalization have been mixed. Some studies have it that in certain countries such as Ghana, Tanzania, Gambia, Burkina Faso, Nigeria and Zimbabwe, financial liberalization resulted in higher growth, increase in savings and investments (Corbo and Rojas, 1991; IMF, 1993 and Carprio et al, 1993). Other studies revealed that there were chronic disasters in certain economies such as Chile, Argentina, Uruguay and Turkey (Diaz-Alejandro, 1985; Atiyas, 1989).

Of all the literatures reviewed, no attention was paid to the impact of interest rate liberalization on the economy. Therefore, the scope of this paper covered the underlying gap.

### **III. Methodology**

This paper adopted the logical framework of Romer (2000) which indicated that when interest rate is used as operation objective, IS cannot handle monetary policy problem. This further suggests that the position of effective problem of fiscal and monetary policy in macroeconomic centred on short run fluctuation which call for replacement with IS-MP model as advised by Romer (2000). However, Romer excluded the influence of interest rate liberalization, credit to private sectors, inflation and exchange rate. Investigating the impact of interest rate liberalization on the Nigerian economy is necessary in view of the importance of interest rate on the economy. This is the major strength of this paper.

In this study, time series data of selected macroeconomic variables will be used to examine the impact of interest rate liberalization for 1981-2014 periods. The secondary data used were sourced from the National Bureau of statistics (NBS),

Central Bank of Nigeria (CBN) and World Development Indicators (WDI). The prime lending rate of commercial banks is the main focus because commercial banks have been identified as the main vehicle of monetary policy implementation in Nigeria. Also, the OLS technique of estimation will be employed. The OLS is chosen because it yields the most efficient parameter estimates based on its BLUE properties (Koutsoyannis, 1977; Gujarati, 2004). Therefore, this study hypothesizes that the Nigerian economy will depend on interest rate, credit to private sector, inflation and exchange rate. Following Romer (2000), we specified our model as follow:

$$RGDP_t = f(INR_t, CPS_t, EXR_t, INF_t, U_t) \dots \dots \dots (1)$$

Where;

RGDP= Real Gross Domestic Product,

INR= Interest rate,

CPS= Credit to Private Sector as proxy for domestic investment,

EXR= Exchange rate,

INF=Inflation, and

U= error term

The model is formulated based on reviewed empirical and theoretical studies.

Equation (1) is expressed in a log linear function. The reasons for this include;

- To allow the researcher to interpret the coefficient of the dependent variable directly as elasticity in relation to the explanatory variables (Upender, 2003)

- To minimize the problem of heteroscedasticity and multicollinearity (Gafar, 1988; Doroodia, 1994; Adenikinju and Busari, 2009), and
- To bring the numerical values of the different variables to a common base. On the strength of the foregoing, equation (1) is expressed thus:

$$\text{Log RGDP} = \beta_0 + \beta_1 \log \text{INR} + \beta_2 \log \text{INF} + \beta_3 \log \text{EXR} + \beta_4 \log \text{CPS} + \mu \dots \dots \dots (2)$$

On *a priori* expectations, interest rate liberalization and inflation are expected to have negative impact on the economy while exchange rate and credit to the private sector are expected to have positive impact. Therefore,  $\beta_1, \beta_2 < 0$  while,  $\beta_3, \beta_4 > 0$

Also, all the data will be subjected to a unit root test to ascertain the order of integration using Augmented Dickey-Fuller (ADF) (1981) and Phillips-Perron's (PP) (1988) tests. This is because time series data are non-stationary (Gujarati, 2006).

The Augmented Dickey-Fuller (ADF) test is:

$$\Delta y_t = \alpha + \gamma y_{t-1} + \sum_1^n a_1 \Delta y_{t-1} + \varepsilon_t \dots \dots \dots (3)$$

In equation 3, lagged first difference terms of the dependent variables are added in order to assure no autocorrelation contained in the residuals. Also, this study will employed Auto Regressive Distributed Lag (ARDL) in order to establish the short-run and long-run relationship among our variables. The ARDL specification in respect of this study is as below:

$$\Delta \text{IRGDP}_t = \alpha_0 + \sum_{i=1}^n \alpha_{1i} \Delta \text{INR}_{t-i} + \sum_{i=1}^n \alpha_{2i} \Delta \text{INF}_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta \text{EXR}_{t-i} + \sum_{i=1}^n \alpha_{4i} \Delta \text{CPS}_{t-i} + \beta_1 \text{INR}_{t-1} + \beta_2 \text{INF}_{t-1} + \beta_3 \text{EXR}_{t-1} + \beta_4 \text{CPS}_{t-1} + \varepsilon_{1-t} \dots \dots \dots (4)$$

Where;

$\Delta$  represents the first difference operator,

$l$  represents log-transformation,

$\varepsilon_{1-t}$  is the residual,

$\alpha_0$  is the drift component,  
 $\alpha_1, \alpha_4$  denote the short-run coefficient, while the  
 $\beta$ 's symbolise the long-run coefficient.

The ARDL bounds testing approach is mainly based on the joint Wald-test (F-statistic) with asymptotic distribution under the null hypothesis of no co integration among the variables. That is,

$$\begin{aligned} H_0: \beta_1 &\neq \beta_2 \neq \beta_3 \neq \beta_4 \\ H_1: \beta_1 &= \beta_2 = \beta_3 = \beta_4 \quad \text{for } i=1, 2, 3, 4 \end{aligned}$$

#### **IV. Results and Discussions**

We begin with unit root test to ascertain the order of integration since time data are non stationary. The result of the unit root test using Augmented Dickey-Fuller (ADF) and Phillips-Perron are presented in the table below.

**Table 4.1: Results of Unit Root Test**

Variables	Augmented Dickey-Fuller		Order of Integration	Phillips-Perron		Order of Integration
	Test Statistic	Critical Value		Test Statistic	Critical Value	
CPS	-	-4.273277	<i>I(1)</i>	-4.391788**	-4.273277	<i>I(1)</i>
EXR	4.386080**	-4.273277	<i>I(1)</i>	-5.321770**	-4.273277	<i>I(1)</i>
	-					
	5.327770**					
INF	-3.702294*	-3.557759	<i>I(0)</i>	-9.741709**	-4.273277	<i>I(1)</i>
INR	-	-4.273277	<i>I(1)</i>	-6.518896**	-4.273277	<i>I(1)</i>
RGDP	6.440189**	-4.273277	<i>I(1)</i>	-8.655914**	-4.273277	<i>I(1)</i>
	--					
	8.166785**					

Note: \*\* and \* denotes level of significance at 1% and 5 % respectively

Source: Author's computation using E-views 9

Note: \*\* and \* denotes level of significance at 1% and 5 % respectively

**Source:** Author's computation using E-views 9

Therefore, given the unit root result in the table 4. 1 above, the appropriate methodology for this analysis will be the Bound Testing co integration Approach by Pesaran et al. (2001). Bound Testing co integration approach allows for co integration analysis between or among level stationary and difference stationary series. This methodology is chosen against the Johansen co integration approach by Johansen (1988) and Johansen and Juselius (1990) which is only suitable for co integration analysis between or among the series integrated of the same order, that is, all  $I(1)$ 's. Bound Testing co integration approach follows an Auto-Regressive Distributed Lag (ARDL) specification, with the dependent variable expressed as a function of its own lag(s) and lag(s) of other variables in the model. The short run relationship is defined by the lag(s) of differenced series while the long run relationship is defined by the lag(s) of level series.

From the ARDL results, three variables are co integrated. Whereas RGDP, INF and CPS are co integrated at 1% level. Both INR and EXR are not co integrated. There is no short-run relationship among our variables of interest, particularly the interest rate which is the main focus of this study. However, only CPS and INF maintained a priori expectation. A 1% increase in interest rate and exchange rate reduces RGDP by ₦88 billion and ₦ 41 billion respectively.

In the long-run, relationship exists between RGDP, CPS and EXR at 10% level while INR and INF are not significant at 10% level. All the variables are correctly signed. A 1% increase in interest rate, for instance, decreases RGDP by ₦ 117 billion. See appendix 1. This means that interest liberalization impacted negatively on the Nigerian economy during the period under study. This is because high loan rate have increase the cost of capital which discourages capital and productive investment, raises inflation and encourages capital flight. Accessing of funds for investment is still a challenge with lending rate being very high compared to deposit rate in the economy. The end result is that for almost four decades of policy somersault especially in interest rate and exchange rate management, the Nigerian economy has not benefited immensely from the processes. Theoretically, it is expected that as real deposit rates rises, the volume of deposit will increase and the real loan rate (i.e. interest rate) will decline in order to clear the deposit (Fry, 1982). Hence, the findings of Adam (1998; Obadan and Odusola (1999) supported the view that lending rates in Nigeria have been perceived as negative, thus discouraging investors from sourcing loans from the banks. Other constraints are weak economic structures, underdeveloped capital market, inadequate infrastructures, etc. However, disequilibrium from shock in the previous year converged quickly back to long-run equilibrium in the current year with an adjustment speed of approximately 78%. This means that the speed of adjustment is high.

Other diagnostic tests include CUSUM stability test, Jacque-Bera test, serial correlation and heteroscedasticity. The Jacque-Bera test shows that there is no problem of residuals. See appendix 2. Likewise, the model passed the stability test where the cumulative sum of recursive residuals (CUSUM) graphical illustration shows that the plot of the residual did not cross the 5% critical lines of parameter stability. This, in essence, implied stability of the long-run parameters over the period 1981 to 2013 in Nigeria. But the CUSUM square shows that the coefficients of residuals are unstable between 2010 and 2011. This is because enrolment into post-primary school remains stagnant. See appendix 3 and 4. Also, there is no problem of serial correlation using Breusch-Godfrey Serial Correlation LM Test. The test for heteroscedasticity indicated that there is no problem of heteroscedasticity at 10% level of significance. See appendix 5 and 6.

## **V. Summary, Recommendations and conclusion**

In this study, an attempt was made to investigate the impact of interest rate liberalization on the Nigerian economy. The study covered the periods 1981-2014 and the time series data were sourced from CBN, NBS and WDI. The OLS technique was employed and the result show that interest rate liberalization impacted negatively on the economy because high loan rate have increase the cost of capital which discourages capital and productive investment, raises inflation and encourages capital flight.

In the light of adverse effects of interest rate liberalization on the economy, this paper recognizes the fact that a well developed financial market remains a pre-requisite for the use of interest rate as a major monetary instrument. Promotion of equity markets, raising of corporate savings and encouraging the inflow of foreign capital are needed as complements to interest rate liberalization. The financial market will be efficient only if government controls prices in the market such as interest rates and transaction fees. The high interest rate will lead to excess liquidity which may result into unnecessary credit expansion. Therefore, the wide spread between deposit and lending rates should be controlled and actively managed. Increase in interest rate may lead to increase in inflation, high cost of funds, increase in domestic debts, weaker exchange rate, rising unemployment rate in Nigeria. There is the need for strong capital account policy to regulate short-term capital flow and exchange rate volatility. The Nigerian government should re-examine and improve on the incentives structure by making investment available in labor intensive projects in area of agriculture, manufacturing, small scale enterprises and easy access to loan. So, government should encourage private sector-led economic policies by reducing the interest rate to a single digit. The current economic reforms are desirable and should be sustained. Government should also formulate and implement financial policies that enhance investment-friendly rate of interest and take into consideration those other factors, like corruption, which negatively affect investment in the country, in order to maintain sustainable economic growth.

Complementary policies such as industrial incentives to cushion the effects of interest rate liberalization on industrial operations and investment returns are desirable. Efficient and well functioning payment systems will improve the transmissions of monetary policy, financial sector stability and transactions velocity of money. In order to deal with the problem of weak economic structure, the banks should seriously encourage the establishment of small and medium enterprises that will enhance linkages between agriculture and the rest of the economy.

In conclusion, it requires an enabling economic environment, consistent macroeconomic policies and socio-political stability to effectively manage the Nigerian economy. Lastly, we recommend a guided liberalization.

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### Appendix 1

ARDL Cointegrating And Long Run Form  
 Dependent Variable: RGDP  
 Selected Model: ARDL(1, 1, 0, 1, 0)  
 Date: 07/25/16 Time: 15:00  
 Sample: 1981 2014  
 Included observations: 33

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#### Cointegrating Form

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPS)	0.029092	0.041121	0.707480	0.4858
D(INF)	-0.711552	2.003938	-0.355077	0.7255
D(EXR)	-4.070639	2.318219	-1.755934	0.0913
D(INR)	-8.846635	7.557431	-1.170588	0.2528

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CointEq(-1)	-0.750082	0.152731	-4.911129	0.0000
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Cointeq = RGDP - (0.1716\*CPS -0.9486\*INF + 2.3204\*EXR -11.7942\*INR  
+ 505.0617 )

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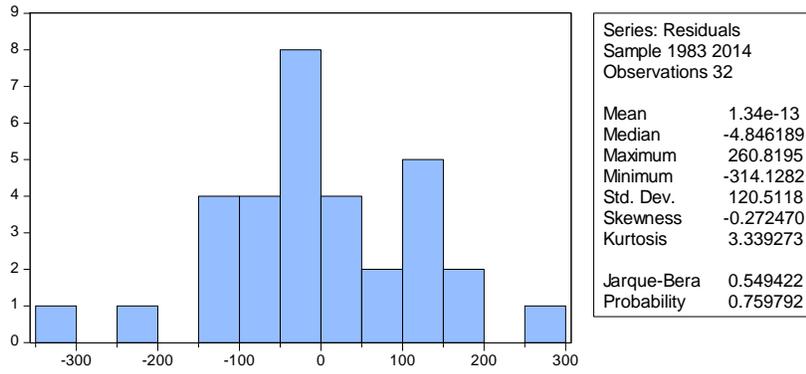
#### Long Run Coefficients

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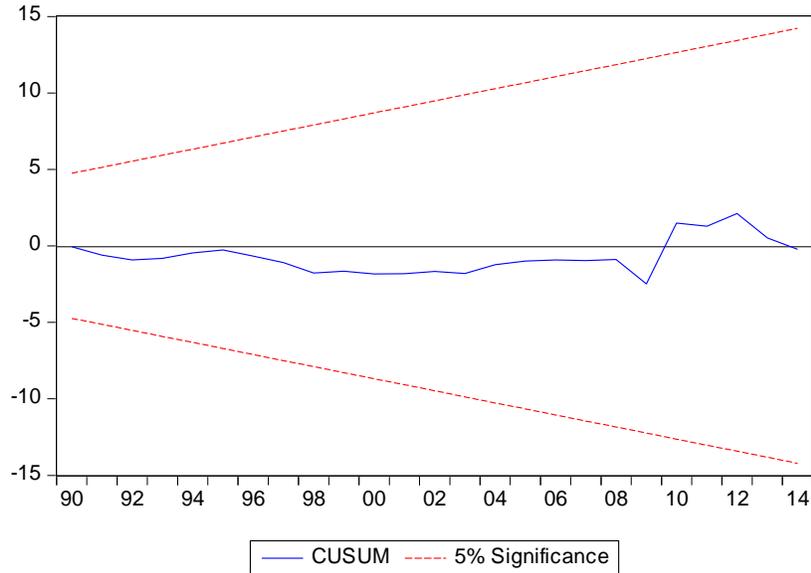
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPS	0.171615	0.013549	12.666333	0.0000
INF	-0.948633	2.654462	-0.357373	0.7238
EXR	2.320412	1.174370	1.975878	0.0593
INR	-11.794225	9.698063	-1.216142	0.2353
C	505.061676	151.879555	3.325409	0.0027

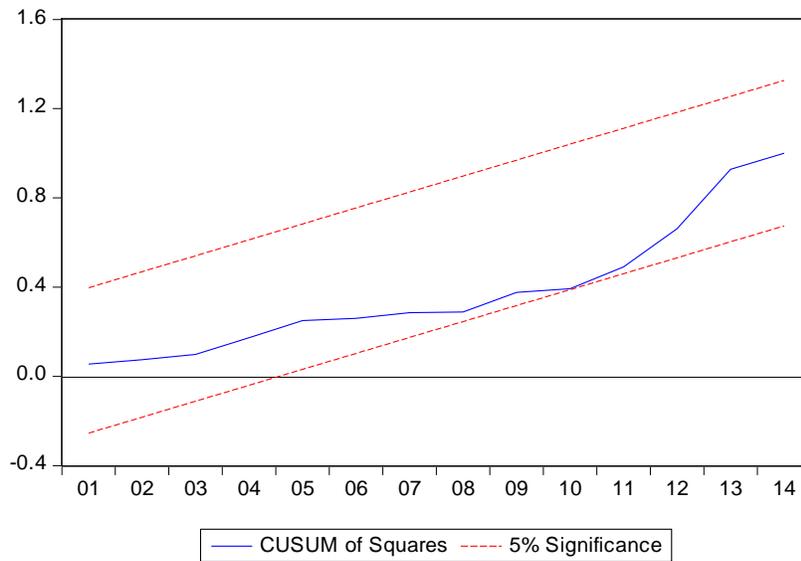
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## Appendix 2



## Appendix 3 and 4





### Appendix 5

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.889649	Prob. F(2,21)	0.4257
Obs*R-squared	2.499529	Prob. Chi-Square(2)	0.2866

### Appendix 6

Heteroskedasticity Test: ARCH

F-statistic	2.750552	Prob. F(2,27)	0.0818
Obs*R-squared	5.077769	Prob. Chi-Square(2)	0.0790