

## THE GROWTH IMPACT OF MONEY MARKET IN NIGERIA: AN IMPERATIVE OF FINANCIAL INNOVATION

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### *Abstract*

*The paper examines the impact of the money market on economic growth in Nigeria, using times series data sourced from the CBN statistical bulletin from 1981 to 2016. The study also employs the ordinary least squares (OLS) technique anchored on market segmentation and pure expectation theories and the endogenous growth model to examine the impact of the money market on economic growth in Nigeria. The long run model result of the study revealed that treasury bills (TBs), federal government bonds (FGB), and the human capital investment (HC) have positive and significant impact on economic growth in Nigeria while monetary policy rate (MPR) and commercial paper (CP) have positive but insignificant impact on economic growth in Nigeria. The result of the study further showed that bankers' acceptance (BA) has negative and insignificant impact on economic growth in Nigeria. The study concludes that money market instruments have positive impact on economic growth in Nigeria except bankers' acceptance. The study recommends that the monetary authority should make money market tools (especially the BA) more growth promoting in Nigeria by introducing fresh, innovative and attractive short term financial assets that will meet the various needs of money market participants.*

**Keywords:** Money market, Economic growth, Monetary policy rate, Treasury bills, Commercial Papers.

### **1.0 Introduction**

The innovative role of the money market in economic growth of Nigeria has attracted the attention of some policy makers and researchers in recent times. Mohammed (2009) observed that the presence of money market aids trading in short-term debt instruments to meet transient needs of funds by agencies such as the government, banks and similar institutions. Asogwa and Ezema (2004) noted that money market instruments such as treasury bills and treasury certificates are the only short-term government debt instruments that are marketable and negotiable.

The rise in the number of economic agents who find it difficult to part away with their hard earned savings for a very long time and desire to earn quick and stable returns on their investment in Nigeria is a glaring indication that the nation needs empirical studies that will focus on short term money market

instruments as well as their impact on economic growth. Most studies on the impact of financial market development on economic growth focused more attention on the capital market and placed little emphasis on money market activities (Adegbite and Oke, 2008; Ogwumike and Salisu, 2012; Odeniran and Udejaja, 2010; Olofin and Afangiden, 2008; Akinlo and Akinlo, 2007; Ndebbio, 2004). The main reason for the high premium placed on the former is because the capital market is the market where long term capital is raised by firms and the government for long term investments. However, short term interest rates of the money market reflect the monetary condition of the entire economy and guide the monetary authority on the suitable growth-inducing monetary policies to adopt for the country. Okereke-Onyuike (2005) posits that short term interest rates of the money market hugely influence capital market activities.

More so, all investment rates in the financial markets take their cue from the monetary policy rate. For instance, a rise in monetary policy rate will cause lending rate in the economy to rise and this in turn determines the rate at which banks grant loans to firms and other borrowers. The availability of scanty literature on the money market in Nigeria clearly indicates the existence of a research gap on the impact of the money market as an imperative of financial innovation in Nigeria, which this study attempts to fill. It is against this backdrop that the study examined the growth impact of the money market in Nigeria with a view to understanding her recent financial innovations.

## **2.0 Theoretical review of Literature**

The money market is a wholesale market for low, highly liquid, short term debt instruments. Oghenekaero (2013) maintained that money market is principally instituted for the efficient dissemination of liquid assets in the financial system, provision of capital and the hedging of short term risks. The money-market is met for raising short term funds for investment purpose. Ikpefan and Osabuohien (2012) asserted that the money market is where securities of short term maturities are traded with no central location as businesses are usually transacted on various means such as telephone, fax, telex, and so on.

Instruments traded in the money market include; treasury bills, federal government savings bonds, etc. Treasury bills are short term debt instruments with a maturity period of 91 days issued by the Central Bank on behalf of the Federal government for the purpose of raising temporary (deficit budget) financeto execute short term project. Commercial papers are short term unsecured promisory notes issued by firms through banks or finance houses with a maturity period of between 1 to 180 days. Bankers acceptances are draft accepted by banks which are used to finance trade with a maturity period of 30 days to 180 days (Obademi, 2004). Federal government savings bonds

are debt securities of the Federal government of Nigeria (FGN) issued by the Debt Management Office (DMO) on behalf of the Federal Government for an agreed period of time, usually with a tenor of 2 to 3 years.

Anthony and Randy (2003) submit that investing in treasury bills is a suitable investment option when the capital market is uncertain, because returns on treasury bills are stable and tax exempt. Money market activities take place in the dealing rooms of discount houses and banks. One of the major tools used in controlling the money supply is the open market operations. It involves discount houses submitting bids from authorized dealers, including its needs for OMO instruments to the Central Bank of Nigeria and facilitates the payments and settlement of the transactions (CBN, 2004). Nwosu and Hamman (2008) noted that the money markets are integral part of the financial infrastructure of industrial countries among the largest financial markets in the world. They maintained that the money market in Nigeria is shallow and characterized by inadequate securities, paucity of instruments and that there exist a wide range of lending and deposit rates. The market also lacks breadth, resilience and depth, to effectively discharge its primary functions of financial intermediation. These developments have no doubt affected the growth and development of the Nigerian money market when compared with advanced countries. In Nigeria, the money market is not yet vibrant and well developed. This is so because in the past the money market experienced liquidity problems. Ehigiamusoe (2013) observed that the money market is largely dominated by government instruments such as treasury bills and bonds, with a wide gap of deposit and lending rates coupled with high costs of borrowing.

However, there are several financial innovations in recent times taking place in the Nigerian financial markets which have aided the improvement of the money market activities and are imperatives of innovative and efficient market performance. Ben (1999) posits that financial market provides the arrangement through which households, firms and the government who intends to invest more than they can bid for funds. The FMDQ OTC PLC is an initiative of the Bankers' Committee (which is made up all banks, discounts houses in Nigeria, the Central Bank of Nigeria and the Nigerian Deposit Insurance Corporation) with a 'GOLD' agenda at making the Nigerian financial markets globally competitive, operationally excellent, liquid and diversified. FMDQ has a value proposition of instituting financial market infrastructure to drive transparency, credibility, market oversight, governance, market liquidity, price formation, diversification and high level integrity with a view to protecting investors' interests (FMDQ, 2016).

The value proposition of the FMDQ empowers her to enhance the Nigerian financial market process and thus makes the process quicker, cost competitive

and liquid. For instance, all transactions going on the Nigerian financial markets on various systems will now be made to come under the FMDQ to ensure ease of execution of activities for trading members, ease of dissemination of market information to all stakeholders and integration of the Nigerian money and capital markets bond trading. FMDQ also plans to integrate securities dealers operating under the Nigerian Stock Exchange (NSE) and banks operating in the old interbank market to ensure that securities and dealers in the NSE trade bonds in the same market with banks. FMDQ uses its Daily Quotation List (DQL) as the flagship for financial market transparency.

The Naira-settled OTC Foreign Exchange (FX) Futures product is a key breakthrough in the Nigerian financial markets and a chance to transmute risk into certainty. It is a paradigm shift in the landscape of Nigeria's financial markets. The Naira-settled OTC FX Futures are non-deliverable forward contract of which, the parties involved agree to an exchange rate for a pre-determined date in the future without the compulsion to deliver the underlying US Dollar (notional amount) on the maturity (settlement) date. At maturity, it is assumed that both parties involved would have transacted at the spot foreign exchange (FX) market rate. More so, the party that would have suffered a loss with the spot FX rate will be paid a settlement amount in Naira. This form of compensation will ensure that both parties involved enjoy the rate that had been guaranteed to each other through the OTC FX futures, thereby making it a two-way quotation market possible (FMDQ, 2016). The introduction of the FGN savings bonds on the 7th of March, 2017 (with a tenor of two to three years and a monthly offer for subscription) as a result of market restructuring is a new financial innovation. This new arrangement will help small scale investors such as students and low income earners to buy FGN bonds of ₦10,000 worth from the secondary market or subscribe to the FGN bonds that have much lower minimum subscription requirements of ₦5,000 minimum (FMDQ, 2017).

Furthermore, interest earned on the FGN savings bonds is calculated per annum but paid quarterly into the bank account of the investor concerned. Investors earn interest on Federal government bonds until maturity of the bonds when the initial payments will be refunded to the investors. Interest income earned on Federal government bonds are also tax exempt like treasury bills (FMDQ, 2017). Akinsokeji, Abidemi and Joel (2016) maintain that federal government bonds are stable and less risky in Nigeria. Human capital investment which is the collective skills, knowledge and other intangible assets of individuals, organisation or the society that can be used to create economic value for the individuals or organisations and their employees. Adelowokan (2012) observes that human capital investment is a measure of

economic value that employees provide and it has a long run growth impact in Nigeria.

### **2.1 Empirical review of Literature**

The presence of the money market empowers exchange of short-term debt instruments to meet the transient monetary needs of financial backers. Moreover, Asogwu and Ezema (2004) maintained that money market instruments (treasury bills and treasury certificates) are the lone short-term government debt instruments that are attractive and negotiable. However, examining the effect of the global financial meltdown on the Nigerian money market in two separate time periods, 2000-2005 and 2006-2009, Ajao and Festus (2011) found that during the non-crises era (2000-2005) all the explanatory variables (treasury bills (TBs), bankers' acceptances (BAs), certificate of deposits (CDs), bank lending rate (BLR), commercial papers (CPs), and inflation rate (INF)) met the a-priori expectations; but during the crises era (2006-2009) only the coefficient of inflation retains its a-priori expectation or sign. They submitted that economic activities were unfavourably affected by the global financial meltdown as seen in the adverse effect on financial deepening, and that this had a corresponding effect on the money market which ultimately destabilized its indicators. In view of this, Ehigiamusoe (2013) concluded that the money market doesn't prod economic growth when contrasted with the capital market based on findings from past empirical studies on the growth impact of the money market in Nigeria. To corroborate these findings, Ehigiamusoe (2016) examined the problems of money market development in Nigeria. The result suggests that the Nigerian money market is significant but negatively related to economic growth. Moreover, it was observed that the Nigerian money market is not yet virile enough to produce the needed growth that will push the economy to significant development. However, findings from Iwedi and Igbaniho (2015) depicted that there is a positive significant short-run and long-run relationship between money market operations and economic growth in Nigeria. The study results further showed that causality flows from economic growth which was used as proxy for GDP. In light of empirical analysis, the study reasoned that money market operations delivers short term growth propensities and can help to guarantee long run notable and consistent growth in Nigeria. While, most recently, Ogbuji, Adegbite and Oke (2018) found that the money market has positive impact on economic growth in Nigeria. The investigation further uncovered that a bi-directional causality exists between the money market and economic growth in Nigeria.

### **3.0 Research Methodology**

The study adopts the endogenous growth model of Romer (1994) in examining the growth impact of money market in Nigeria. The model incorporates the vital role of savings and investment in the economy and also

holds that improvement in productivity is directly linked to innovation and investment in human capital. The endogenous growth model assumes that the long-run rate of economic growth is primarily determined by endogenous variables that are internal to the economy such as investment, innovation and human capital rather than exogenous factors where technological and scientific process are independent of economic forces (Mankiw *et al*, 1992). Romer (1994) posits that the diminishing returns in capital can be checked as a result of investment or technological spill over. In line with the objective of the study, the study specifies a functional relationship for economic growth with some money market indicators as:

$$GDP = f(MPR, TB, CP, BA, FGB, HC) \quad (1)$$

Following the assumptions underlying the endogenous growth model, the study regressed real gross domestic product per capita on monetary policy rate, treasury bills, commercial papers, bankers' acceptances, federal government bonds and human capital investment. Since human capital investment is also very important in the endogenous growth theory, we proxy it with government education expenditure in equation (1). Thus, to conduct the estimation and following Mankiw *et al.* (1992) equation (1) is specified in an estimable form as:

$$GDP_t = \varphi_t + \beta_1 MPR_t + \beta_2 TB_t + \beta_3 CP_t + \beta_4 BA_t + \beta_5 FGB_t + \beta_6 HC_t + \varepsilon_t \quad (2)$$

Where  $GDP$  is the real gross domestic product per capita and it is a proxy for economic growth,  $MPR$  is the monetary policy rate,  $TB$  is the treasury bills rate, and  $CP$  is commercial papers. Moreover,  $BA$  is bankers acceptances,  $FGB$  is federal government bonds,  $HC$  is human capital investment and used as a proxy for government expenditure on education,  $\varepsilon$  is the error term,  $\varphi$  is the intercept term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ , and  $\beta_6$  are the coefficients of all the explanatory variables in the model. Following the a priori expectations of the variables used in the study, all the variables are expected to be rightly signed. Human capital investment is used as a control variable in the growth model formulated. In other to estimate equation (2), the study employs the ordinary least squares (OLS) technique. The study also makes use of secondary data which are sourced from the Central Bank Statistical Bulletins (CBN, 2017). Data for the study covers a period of 1981 to 2016.

### 3. Empirical Results

In this section of the study, the descriptive statistics of the variables is first presented and next is the correlation matrix to help analyse and determine the possibility of multicollinearity among the variables used in the study. Next to this is the unit root test by Augmented Dickey-Fuller (ADF), the test for long-run relationship using the Johansen cointegration test, and then the empirical result from the Ordinary Least Squares. The section is rounded up with the Heteroscedasticity test to determine if the OLS estimated model is spurious or not.

#### 4.1 Pre-estimation Tests

**Table 1:** Descriptive Statistics of Variables

Variables	Descriptive	Measurement Unit	Mean	Std. Dev.	Max.	Min.
<i>GDP</i>	Real GDP per capita	₦ Million	175,035.2	323.0	369,119.6	181,230.1
<i>TB</i>	Treasury Bills	₦ Million	690.25	911.76	3,066.4	5.7800
<i>CP</i>	Commercial Papers	₦ Million	77.606	170.40	822.70	0.07
<i>MPR</i>	Monetary Policy Rate	Percentage	10.02	1.391	13.00	6.00
<i>FGB</i>	Federal Government Bonds	₦ million	1,119.2	1,893.4	7326.40	72.56
<i>HC</i>	Human Capital Investment	₦ Billion	31,757.00	181.52	69,024.00	13,779.00
<i>BA</i>	Bankers' Acceptances	₦ million	21.75	24.99	81.83	0.01

*Source:* Authors' Computation (2018)

In Table 1, we show the descriptive statistics of all variables used in the study. As presented in Table 1, the mean of real GDP per-capita, treasury bills, commercial papers, and monetary policy rate in Nigeria between 1981 and 2016 is ₦ 175,035.2 million, ₦690.25 million, ₦77.606 million, and 10.02% respectively. Also, the mean of federal government bonds, human capital investment and bankers' acceptances in Nigeria is ₦1,119.2million, ₦ 31,757billion, ₦21.75million respectively between 1981 and 2016. Furthermore, for the maximum values, real GDP per-capita, treasury bills, commercial papers, and monetary policy rate in Nigeria between 1981 and 2016 is ₦369,119.6 million, ₦3,066.4 million, ₦822.7 million, and 13% respectively. Also, the maximum value of federal government bonds, human capital investment and bankers' acceptances in Nigeria is ₦7326.40 million, ₦ 69,024billion, and ₦81.83 million respectively between 1981 and 2016. Regarding their minimum values, real GDP per-capita, treasury bills, commercial papers, and monetary policy rate in Nigeria between 1981 and 2016 is ₦181,230million, ₦5.78 million, ₦0.07 million, and 6% respectively. Also, the minimum value of federal government bonds, human capital investment and bankers' acceptances in Nigeria is ₦72.56 million, ₦ 13,779 billion, and ₦ 0.01 million respectively over the study period.

**Table 2: Correlation Matrix of Regressors**

	<i>GDP</i>	<i>TB</i>	<i>CP</i>	<i>BA</i>	<i>MPR</i>	<i>FGB</i>	<i>HC</i>
<i>GDP</i>	1.00						
<i>TB</i>	0.462	1.00					
<i>CP</i>	0.274	0.184	1.00				
<i>BA</i>	0.481	-0.438	0.281	1.00			
<i>MPR</i>	0.271	-0.118	0.382	0.331	1.00		
<i>FGB</i>	-0.083	0.097	0.084	-0.432	0.385	1.00	
<i>HC</i>	0.237	-0.072	0.421	0.319	-0.401	0.061	1.00

*Source: Authors' Computation (2018)*

In Table 2, we present the correlation matrix for all the variables employed in the study. In the result presented to multicollinearity among the regressors, a cursory look at the Table suggests that the level of association among the variables is very low across the series. Therefore, we can proceed with the estimation since the variables are not collinear.

**Table 3: Unit Root Tests using the ADF**

Variable	ADF Tau Statistics		Status
	5% Significant	1% Significant	
<i>TBS</i>	-7.2841 (8) [-3.9471]	-7.2841 (9) [-4.1123]	<i>I(1)</i>
<i>CP</i>	-6.7232 (9) [-3.0532]	-6.7232 (7) [-3.8193]	<i>I(1)</i>
<i>BA</i>	-6.9264 (9) [-3.1163]	-6.9264 (9) [-4.2632]	<i>I(1)</i>
<i>GDP</i>	-5.0937(9) [-2.0146]	-5.0937(9) [-3.1732]	<i>I(1)</i>
<i>MPR</i>	-7.1743 (9) [-2.1843]	-7.1743 (8) [-4.6215]	<i>I(1)</i>
<i>FGB</i>	-4.7513(7) [-1.3352]	-4.7513(7) [-2.7362]	<i>I(1)</i>
<i>HC</i>	-5.0003 (9) [-3.5013]	-5.0003 (9) [-3.9134]	<i>I(1)</i>

*Source: Authors' Computation (2018)*

*Note: Mackinnon critical values are shown in parenthesis. The lagged lengths shown in brackets are selected using the minimum Schwarz Information criteria.*

Table 3 presents the result of the unit root test. The test, which uses the Augmented Dickey-Fuller (ADF) test shows that the all the variables i.e. treasury bills, commercial papers, bankers' acceptances, the real GDP per-capita, monetary policy rate, federal government bonds, and human capital investment are not stationary at levels. However, when the employed variables are first differenced, the result confirms that all the variables are stationary.



Thus, we reject the null hypothesis of no stationarity at first difference and conclude that the variables are stationary.

**Table 4: Johansen Cointegration (Trace Test)**

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value (0.05)	Prob.**
<i>None</i> *	0.6817	98.7283	84.6128	0.0045
<i>At most 1</i>	0.6091	63.8742	71.6283	0.0852
<i>At most 2</i>	0.4690	47.4648	60.9725	0.0947
<i>At most 3</i>	0.3798	44.0429	37.0703	0.1166
<i>At most 4</i>	0.2975	27.7591	19.8759	0.1965
<i>At most 5</i>	0.2099	22.4339	11.5516	0.2333
<i>At most 6</i>	0.0542	15.3337	8.1041	0.2613

*Source: Authors' Computation (2018)*

*Trace test indicates 3 cointegrating eqn(s) at the 0.05 level \* denotes rejection of the hypothesis at the 0.05 level \*\*MacKinnon-Haug-Michelis (1999) p-values*

Table 4 presents the result of the Johansen cointegration trace statistic test. The result shows that there is only one cointegrating equation in the series. This means that series cointegrate at 5% level of significance. We can therefore reject the null hypothesis of no co-integration at 5% significance level and conclude that there is long-run relationship between treasury bills, commercial papers, bankers' acceptances, the real GDP per-capita, monetary policy rate, federal government bonds, and human capital investment in Nigeria between 1981 and 2016.

**Table 5: Johansen Cointegration (Maximum Eigenvalue Test)**

Hypothesis No. of CE(s)	Eigen value	Max-Eigen Statistic	Critical Value (0.05)	Prob.**
<i>None</i> *	0.6817	79.2079	75.3504	0.0023
<i>At most 1</i>	0.6091	60.3834	70.2986	0.0814
<i>At most 2</i>	0.4690	50.4690	64.4517	0.1708
<i>At most 3</i>	0.3798	31.7223	53.3409	0.2174
<i>At most 4</i>	0.2975	25.7286	30.9917	0.2909
<i>At most 5</i>	0.2099	18.2289	22.6285	0.3559
<i>At most 6</i>	0.0542	11.6327	10.0918	0.4067

*Source: Authors' Computation (2018)*

*Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level \* denotes rejection of the hypothesis at the 0.05 level \*\*MacKinnon-Haug-Michelis (1999) p-values*

Table 5 presents the result of the Johansen cointegration maximum Eigen statistic test. The result shows that there is only one cointegrating equation in the series. This means that series cointegrate at 5% level of significance. We can therefore reject the null hypothesis of no co-integration at 5% significance level and conclude that there is long-run relationship between treasury bills,

commercial papers, bankers' acceptances, the real GDP per-capita, monetary policy rate, federal government bonds, and human capital investment in Nigeria between 1981 and 2016. Since both results confirm that there is long-run adjustment between the variables, we can then proceed to estimate the long run model using the ordinary least squares framework.

**Table 6: Result of the Long Run Model**

<i>Dependent Variable: GDP</i>		<i>Included observations: 45 after adjustments</i>		
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
<i>C</i>	8.3278	0.1425	58.430	0.0001
<i>TBS</i>	0.1440	0.0377	3.8200	0.0006
<i>CP</i>	0.0221	0.0116	1.8980	0.0674
<i>BA</i>	-0.0057	0.0198	-0.2879	0.7754
<i>MPR</i>	0.0542	0.0454	1.1940	0.2419
<i>FGB</i>	0.1715	0.0244	7.0370	0.0001
<i>HC</i>	1.5801	0.2612	5.9943	0.0000
<i>R-squared</i>	0.9785	<i>F-statistic</i> 499.07		
<i>Adj. R-squared</i>	0.9749	<i>Prob(F-statistic)</i> 0.0006		
<i>Log likelihood</i>	-40.982	<i>Durbin-Watson stat</i> 1.6905		

*Source: Authors' Computation (2018)*

In Table 6, we present the empirical result of this study. As presented in Table 6, treasury bills have a positive and significant impact on the real GDP in Nigeria. Results confirm that when all the explanatory variables are kept constant, 1% increases in treasury bills cause the real GDP to increase by about 14.4%. This means that as the volume of treasury bills in the money market rise, the Nigerian economy also experiences increases in output growth. Also, commercial papers and monetary policy rate positively but insignificantly impacts the real GDP over the study period. The result show that 1% increase in commercial papers and monetary policy rate cause the real GDP to rise by 2.2% and 5.4% respectively while holding constant all the other explanatory variables. The intuition is that monetary policy provides the needed impetus to boost economic growth in Nigeria, though not significant. Therefore, other policies might be needed to interact with monetary policy to enable it to significantly impact on economic growth in the country. Moreover, the result suggests that federal government bonds positive and significant impact on economic growth while bankers' acceptances have a negative and insignificant impact on economic growth over the study period. In the result, 1% increase in federal government bonds causes the real GDP to rise by about 17.1% while holding other independent variables constant.

However, 1% increases in bankers' acceptances causes the real GDP to fall by about 0.5% when all the other explanatory variables are held constant. The economic intuition is that increases in federal government bonds make more funds available to the federal government to spend on the economy. As the

government is able to raise more funds from the money market, such funds are used to finance economic activities of the government, thereby stimulating the overall economic transactions. This informs the reason why the federal government of Nigeria, for instance, runs to the money and capital market to raise funds to finance its projects whenever there is a short fall in government revenue. This also provides some justification for government to use domestic borrowing to finance its deficits rather than sourcing foreign debts.

Finally, human capital investment, which was used as a control variable due to the endogenous growth model employed, has a positive and significant impact on the real GDP. The result of the human capital investment is in-tune with the proposition of the endogenous growth model that human capital investment is very crucial in determining economic growth. Regarding the fitness of the estimated model, about 97.8% of variation in the real GDP per capita is jointly accounted for by treasury bills, commercial papers, bankers' acceptances, monetary policy rate, federal government bonds, and human capital investment. Again, when the effect of insignificant regressors were removed, the adjusted R-squared value of 0.974 suggests that about 97.4% of the variation in the dependent variable is jointly accounted for by all the explanatory variables, thereby making the model a good fit. Also, the probability of the F-statistic, which stood at 0.006 implies that the regressors are linearly related to the dependent variable as it is significant at 1%, while the Durbin Watson statistic of 1.69 confirms that there is no serial correlation in the estimated model. This suggests that the model is well behaved.

#### 4.2 Residual Diagnostics Test

We use this test to determine the efficiency of the estimated model. Hence, we present the Breusch-Godfrey Heteroscedasticity test for this purpose.

**Table 7: Breusch-Pagan-Godfrey Heteroscedasticity Test**

Observation included: 37	Dependent Variable: RESID <sup>2</sup>		H <sub>0</sub> : No ARCH effect
F-statistic	2.629621	Prob. F(6,29)	0.4518
Obs* R-squared	5.018329	Prob. Chi-Squared (6)	0.2737
Scaled explained SS	2.836002	Prob. Chi-Squared (6)	0.4106

*Source: Authors' Computation (2018)*

According to Gujarati and Porter (2009), Autoregressive Conditional Heteroskedasticity (ARCH) may have an autoregressive structure, in that heteroskedasticity may be observed over different periods, hence it is needful to conduct the test for this study.

H<sub>0</sub>: There is no ARCH effect

H<sub>1</sub>: There is ARCH effect

From the table above, both the Probability Chi-Squared values of observed R-squared and that of explained sum of squares are 0.2737 and 0.4106 respectively. Since these statistics are both greater than 5% levels of significance, we confirm that they are not significant. Hence, we accept the null hypothesis that of no ARCH effect in the model. The study therefore concludes that there is no heteroscedasticity problem in the model and that the variance of the residual term is homoscedastic.

## **5.0 Discussion of Findings and conclusion**

The study revealed that all the money market indicators used conformed to a priori expectations except bankers' acceptances. The study found that treasury bills and federal government bonds positively and significantly influenced economic growth in Nigeria. The finding of the study is consistent with the empirical studies of Iwedi and Igbani (2015) who found that treasury bills and commercial papers positively impact economic growth in Nigeria. The study also found that monetary policy rate also has positive but insignificant impact on economic growth in Nigeria. The result of the study also corroborates the findings of Ogbuji, Adegbite and Oke (2018) and Akujobi (2010) whose empirical study revealed that monetary policy rate positively impact economic growth in Nigeria. Although the study showed that federal government bonds had positive and significant impact on economic growth in Nigeria, the empirical work of Ogboi, Njogo and Nwankwo revealed that government bonds had positive but insignificant impact on growth in Nigeria. However, bankers' acceptances had negative and insignificant impact on economic growth in Nigeria over the study period covered. This is attributed to the high rate of default among banks' customers and borrowers whose drafts were accepted and their businesses financed by banks from depositors' funds, as evidenced in the high volume of non-performing loans of most banks in Nigeria which in turn leads to banks' distress. The result of the study is also confirms the findings of Iwedi and Igbani (2015) whose study empirically showed that bankers' acceptances have negative and insignificant impact on economic growth in Nigeria.

The study is also in conformity with the empirical work of Andrew and Deborah (2015) who found that commercial papers have positive impact on economic growth in Nigeria. The findings of the study is in conformity with the study of Adelowokan (2012) and Gods' time and Uchechi (2014) whose studies showed that human capital investment has positive impact on economic growth in Nigeria.

Nevertheless, the result of the study is contrary to the empirical revelations of Eze (2017) who found that bankers' acceptances have positive and significant impact on economic growth in Nigeria while treasury bills have negative and insignificant impact on economic growth in Nigeria. The policy implication of the findings of the study is that the money market is germane in spurring

economic growth in Nigeria but the government has not given it the much needed attention to make it spur more growth in Nigeria, despite the recent financial innovation in the Nigerian financial markets. Hence, the government should formulate policies that will help to reform the money market, revive the bankers' acceptance instrument and introduce more new innovative money market instruments that will meet the needs of various classes of investors and further boost economic growth in the country.

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