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Time deposit and Nigeria's Economic Growth: A disaggregated Money Supply Impact Analysis

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Abstract
This study examined the effect of time deposit on the growth of Nigeria economy using time series data from 1994-2019. Data were sourced from Central Banks of Nigeria Statistical Bulletin real gross domestic product was modeled as the function of Private sector time deposit; State government time deposit and Local government time deposit. Ordinary Least Squares Regression was employed to reveal potential relationships between causes and effects of the independent variables on the dependent variable. The study found that 54.4% of changes in Real Gross Domestic Product can be explained by the independent variables represented as Private Sector Time deposit, State Government Time Deposit and Local Government Time deposit. The overall significance of the model is tested with F-statistic. The F-value is 6.561559 with p-value of 0.001238 implying a rejection of the Null hypothesis and the acceptance of the alternative (H_A) hypothesis that all the explanatory variables collectively have significant influence on real gross Domestic Product. The Durbin Watson statistic (1.879279) is approximately 2 indicating that the model is not characterized by autocorrelation and therefore suitable for the analysis. Error Correction Co-efficient of -0.273634 is properly signed, and significant at 5% level of significance with (0.0001) p-value. The co-efficient showed that the speed of adjustment of the model is approximately 27.36 percent annually due to a deviation from equilibrium. From the findings, the study concludes significant effect of time deposits on Nigeria economic growth. It recommends that more incentives need to be in place to discourage leakages and high volatility of time deposit towards improved growth of the local economy. More credit facilities should be granted from time deposits to boost employment and output.

Keywords: Time Deposits, Economic Growth, Money Supply, Nigeria

INTRODUCTION

Time deposit is one of major source of liquidity of the commercial bank to maintain money supply to the demand of business and household sector. Growing a large body of literatures reveals liquidity crisis as a big challenge in the financial industry. In the literatures, its exogenous nature is more complicated than its endogenous nature. Studies have shown that the growth of current and time deposits as a reliable and effective endogenous solution of liquidity crisis in the financial industry and effect on economic growth. One of its growth, stock, and secured sources is the fixed deposit of the people and the institution. Its schemes with lubricated higher interest rate and different maturity period are instruments of the banks to mobilize small or big idle money hold by the public for long-term productive credit investment mobilization (Davydenko, 2011). The practice of time deposit shows its periodic nature in the financial industry where the depositor can deposit three months period and extend to five years and further more (NRB, 2019). The time variation of this deposit depends on the interest of the public and the schemes of the financial industry, particularly the bank. In the short time deposit, the bank provides lower and fixed interest rate to the depositors meanwhile the bank provides higher and negotiable interest rate to the depositors in the long time deposit.

The role of financial institutions in economic growth has attracted the attention of researchers and policy makers. There is a large body of literature both empirical and theoretical, which have examined this issue. The findings of these studies are not without controversy. While some studies established that financial institutions have been instrumental in accelerating economic growth, others have stated that it has not been very significant. According to Beck, Levine and Loayza (2000) , a long list of scholars posit a causal association between finance and economic growth. With the abysmal performance of the economy, the Nigerian authorities had no other option than to accept and implement the International Monetary Fund and the World Bank sponsored Structural Adjustment Programme (SAP) of 1986 in order to secure funds and developmental aid to turn the country towards a trajectory of sustained growth and development. Despite its implementation shortcomings, the various reforms and policies put in place since 1986 have contributed in no small measure to the turning around of the Nigerian economy. Corroborating this finding, evidence from Central Bank of Nigeria (2018) indicates that market capitalization for 1980s, 1990s and some part of 2000, before global financial crisis were impressive.

The Nigerian stock market capitalization stood at N6.6 billion in 1985, rose to N285.8 billion in 1996 but reduced to N281.9 billion and N262.6 billion in 1997 and 1998 respectively. However, in 1999, it increased again from N300 billion to N13.18 trillion in 2007. But due to global financial crisis of 2007, it reduced to N9.56 trillion and N7.03 trillion in 2008 and 2009 respectively. From an increase to N9.92 trillion in 2010, it has maintained a steady increase to N10.3 trillion in 2021 (CBN, 2023). The impact of money supply on output (income) and employment is of great analytical interest to economists because of the role money supply plays in economic growth of both the emerging and industrialized economies. Over the years, the achievement of macroeconomic objectives in Nigeria has been futile. This might be attributed to lack of proper understanding of the relationship among the micro components of monetary aggregates and

economic growth. This study, therefore, investigates the extent to which time deposit impact on RGDP in Nigeria.

LITERATURE REVIEW

Time Deposit

This is the type of an account where a customer keeps a specific sum of money for an agreed period of time. Like the earlier discussed deposit accounts, it is a liability of the deposit money banks and what the deposit money banks must pay the Depositors at maturity. The account usually has a tenure ranging from 7 days to one year or more. The interest rate is determined by the tenure and the size of deposit. The account carries a definite tenure with specified interest rate which may be fixed. It is an investment account with a fixed interest is fixed at the time of deposit. The depositor usually maintains an account into which the proceeds are credited. Depositors can terminate the deposit before maturity subject to a penalty. At maturity the account holder may decide to withdraw and close the account or roll over. It is the most stable of all the deposits and as such used as a source of fund by some banks for medium and long term credit facilities.

Economic Growth

Economic growth is measured by using data on gross domestic product, which is a measure of the total income earned by the people of a country through their participation in the production process. Economists use many different methods to measure how fast the economy is growing. The most common way to measure the economy is real gross domestic product, or real gross domestic product. Gross domestic product is the total value of everything - goods and services - produced in our economy. The word "real" means that the total has been adjusted to remove the effects of inflation. The second began with the neoclassical (Solow) model, which contained the thinking that growth reflected technical progress and key inputs, (labour & capital). It allowed for diminishing returns, perfect competition but not externalities. In the neoclassical growth process, savings were needed to increase capital stock, capital accumulation had limits to ensure diminishing marginal returns, and capital per unit of labour was limited. It postulates that growth also depended on population growth rate and that growth rate amongst countries was supposed to converge to a steady state in the long run.

Gross Domestic Product (GDP) can be defined as the monetary value of all the finished goods and services produced within a country's borders in a specific period of time. Though GDP is usually calculated on an annual basis, it can be calculated on a quarterly basis as well. GDP includes all private and public consumption, government outlays, investments and exports minus imports that occur within a defined territory (Gunu, 2012). Despite the modifications, the basic problems associated with the neoclassical thinking are that it hardly explains the sources of technical change (Essien & Bawa, 2007). The third is the newer alternative growth theory, which entrances a diverse body of theoretical and empirical work that emerged in the 1980s. This is the endogenous growth theory. This theory distinguished itself from the neoclassical growth model by emphasizing that economic growth was an outcome of an economic system and not the result of forces that impinged

from outside. Its central idea was that the proximate causes of economic growth were the effort to economize, the accumulation of knowledge, and the accumulation of capital. According to this theory, anything that enhances economic efficiency is also good for growth. Thus this theoretical framework indigenized technological process through "learning by doing" or "innovation processes". It also introduced human capital, governance and institutions in the overall growth objectives (Romers, 1994, Essien, 2002).

The Classical Production Function

This theory states that the amount of output (product) would increase at a diminishing rate when combined doses of labor and capital were applied to given piece of land (Maltus & West, 1815). The concept of production functions is the basis for certain theories in the functional distribution of the income. The concept of production function, its development and refinement grew out of economics maybe due to the nature of production function which is very useful in estimating, analyzing and planning for economic growth, development and acceleration of increase in the national production from the given resources. The values of the production coefficients serve as the basis for determining the optimum patterns of the output.

Production functions may be broadly defined as the technological relationships between inputs and outputs. The inputs are what the firm buys such as productive resources and outputs are what the firms sell. Production is defined as producing goods which satisfy some human want. Production is a sequence of technical processes requiring either directly or indirectly the mental and physical skill of craftsman and consists of changing the shape, size and properties of materials and finally converting them into more useful items or articles. Production function expresses a functional relationship between quantities of inputs and outputs. It shows how and to what extent output changes with variations in input during a specified period of time. According (Solow & Swan, 1956).The production function is the name given to the relationship between rates of input of productive services and the rate of output of product. It is the economists' summary of technical knowledge".

Algebraically, it may be expressed in the form of an equation as

$$Q = f(L, M, N, K, T) \quad (1)$$

Where Q stands for the output of a good per unit of time,

L stands for labor, M stands for Management (or Organization), N stands for Land (or natural resources), K stands for capital and T stands for given technology, f stands for the functional relational relationship. Economists prefer a two input production function to avoid spurious result. In this study, we shall take three inputs: Land, Labor and Capital. The production function in this situation shall assume the form Q = f (L, L, K). In the short run, the technical condition of production is so rigid that the various inputs used to produce a given output are in fixed proportions. However, in the short run, it is possible to increase the quantities of one input while keeping the quantities of other inputs constant in order to have more output. This aspect of the production function is known as the Law of variables proportions. The short run production

function in the case of three inputs, Land, Labour and Capital with Land and Capital as fixed and Labour as the variable input can be expressed as Q= f (L, L, K) where L and K refer to the fixed inputs.

In the long run, all inputs are variable. Production can be increased by changing one or more inputs. The firm can change its plants or scale of production. In the long run, it is possible for a firm to change all inputs up or down in accordance with its scale. This production function is known as return to scale. The return to scale is constant when output increases in the same proportion as the increase in the quantities of inputs. The returns to scale are increasing when the increase in output is more than the proportional to the increase in inputs. They are decreasing if the increase in output is less than proportional to the increase in inputs. In conclusion, the production function exhibits technological relationships between physical inputs and outputs. The function of management is to sort out the right type of combination of inputs for the quantity of output the firm desires. The management has to know the prices of the inputs and techniques to be used for producing a specified output within a specified period of time.

The Classical Neutrality Theory of Money

An Austrian economist, Friedrich Hayek (1931) was the first to coin the phrase 'neutrality of money'. Later neoclassical and neo-Keynesian economists adopted the phrase and applied it to their general equilibrium frameworks, giving it its current meaning. The theory states that an increase in money supply does not affect economic output.

Money can only be neutral in the short run but not in the long run as it loses its neutrality as fresh (additional) money is injected into the growing and dynamic economy. A situation of money neutrality is said to exist when the economy is in equilibrium without monetary gaps but in non-neutrality when the economy is in disequilibrium. Based on the early exchange economists' understanding of money as a veil in which it only assisted in the determination of the quantity of goods and services to be traded and their corresponding prices but has no long term role to play. However, in the early colonial era, money may have performed a neutral role due to scarcity of foreign coins for trading purposes and for administration and labour payment only. With the rapid expansion of banks into Africa capable of creating bank credit money, it has long lost its classical characteristic of neutrality. With the existence of inflation in global economies from demand and supply gaps, neutrality can be maintained as hardly in any economy of today where the neutrality theory of money is evident.

In further refinement of the Fisherian version of monetary theory, some economists concluded that money can affect monetary or nominal variables like money wages, nominal interest rates, nominal output but not real variables like the level of real output and employment. Friedman, M. and Schwartz **(**1963) in an attempt to distinguish the short run and long run effects of money on output believed that a decrease in money stock in the short run initially reduces the level of output which later have impact on prices without any real effect on output. They went further to say that in the long run, money is neutral while in the short run changes in money stock can and do have significant impact on real output.

Classical school believed that every monetary standard served only as a medium of exchange and had no influence whatsoever on economic aggregates such as income, consumption, savings and employment. They never foresaw gold standard (the preferred payment medium due to its high intrinsic value and easiness of carriage) could cause possible increase in prices capable of distorting macroeconomic variables. They argued that gold mines were drying up while economic output was increasing and as such there were no chances of supplying excess gold which could increase prices and affect economic output. They never envisaged 'paper currency standard' and bank credit system which are inflation-prone capable of raising prices beyond their comprehension. However, Keynes finally countered the Neutrality concept of the classical school. He asserted that money was an integral part of the economic process and influences real economic aggregates. The theory of inflation, an anti-thesis of the neutrality theory of money concept has finally put paid to the relevance of the theory for today's macroeconomic analysis. According to the classical economists, changes in the nominal money supply would leave the equilibrium value of the real variable unchanged. The relevance of this theory to the study is that at equilibrium, money stock equals total output and in line with the model equation:

RGDP = f(COB, DD SD, TD, FCD) (2)

and at this point money is neutral. A number of approaches have attempted to define money and the compositions of a country's money stock. Three approaches have been distinguished, namely, the Traditional approach, the Chicago approach, the Gurley and Shaw approach.

Neo-classical Growth Model

This model asserted that an economy's growth rate is dependent on two factors: the level of saving and productivity of capital or the capital per output ratio (Banam, 2010). According to (Solow & Swan, 1956) economic growth is the result of three factors – labour, capital, and technology. The Solow-Swan model attempts to explain long-run economic growth by looking at capital accumulation, labour or population growth and increase in productivity commonly referred to as technological progress. The growth theory explains long-run economic growth by looking at productivity, capital accumulation, population growth and technological progress (Solow & Swan, 1956).

Though the main work on neo-classical growth theory model was done by Robert and Trevor in 1956 and was extended and expanded by Solow who adds labour as a factor of production and making capital labour ratios flexible unlike in the Harrod-Dommar model where they are fixed. According to Mankiw (2003), the Solow growth model shows how an increase in capital and labour force and advancement in technology can influence entire economic growth and development. The model specification is that output is a function of capital and labour that is

V=f (K, L) (3)

Where V = output, K = capital and L = Labour.

Some of the assumptions of the models are:

i. All savings in the economy are channeled to investment opportunities and augmentation of physical capital stock (Ibi, Basil & Ojong, 2019)
ii. Depreciation of capital rate is assumed to be zero.
iii. No technical progress.
iv. Population growth rate assumed to be fixed.

The summary of the Solow growth model shows that an increase in output is dependent on a higher rate of savings via higher stock of capital (Mankiw, 2003). The model indicates that a long run increase in labour will reduce the level of output if there is no improvement in technological progress that will enhance the efficiency of labour. The theory therefore concludes that the long run equilibrium growth rate depends on two exogenous variables: the rate of population growth and rate of technological change (Froyen, 2007). He went further to posit that the theory provides little reference to the importance of finance in economic growth other than making reference to savings which does not affect the growth at long run. This theory has bearing to the study because financial development comes in form of technical innovations into the financial system that spurs growth of the system and enhances services to the economy and agricultural sector in particular. Thus the theory posits that financial development leads to agricultural output growth.

Traditional Approach

Under this theory, money supply is defined as a medium of exchange which consists of currency in the hands of the public plus demand deposits in commercial banks (Keith & Peter, 2003). To them what constitute the money stock of any country would be those mediums that facilitate readily the exchange mechanism and command general acceptability. It is also called narrow money (M1). Hence, M1=C+DD, where C is currency outside the bank, DD is demand deposit.

The Chicago School

The Chicago economists led by Professor Milton Friedman adopted a broader definition of money and symbolized as M2 and they define money supply as a temporary store of value. Their argument is that since in the economy, money income and spending flow streams are not completely harmonized in time so as to make transaction, money should be temporarily stored as a general purchasing power (Keith & Peter, 2003). Thus, money not only functions as a medium of exchange, but also as a temporary store of purchasing power. By implication, the total money stock must not be restricted to M1 but must include any other asset that command liquidity or near to currency. Money stock or M2=M1+Savings deposits + Time deposit.

Gurley and Shaw Approach

Introducing another dimension to the definition of money and money supply, Professor John G. Gurley and Edwards Shaw defined currency (C) and demand deposits (DD) as claims against financial intermediaries (central bank and commercial banks. According to these economists, there exists a fairly large spectrum of financial assets which are close substitutes for money and symbolized as M3. Therefore, they define. money supply as M2 plus the deposits of all other

non-bank financial institutions like savings banks, building societies, loan associations and others expressed as M3 = C + DD + SD + TD + DNBFI (3)

(Keith Band and Peter Howells, 2003)

Empirical Review

Odimgbe, Sampson and Ogueze (2024) examined the effect of saving deposit on the growth of Nigeria economy using time series data from 1994-2019. Data were sourced from Central Banks of Nigeria Statistical Bulletin real gross domestic product was modeled as the function of Private sector savings deposit; State government savings deposit and Local government savings deposit. This study employed the Autoregressive Distributed Lag (ARDL) bounds test approach. Findings of the study established that saving deposit explained 98.08 percent variation in Nigeria real gross domestic product. The Error Correction was found to be 66.02% speed of adjustment per annum the errors of the model corrected each period. The result of long-run ARDL estimation proved that PSSD, SGDD and LGDD showed a positive and significant relationship to Real Gross Domestic Product in Nigeria. Pairwise Granger Causality revealed no evidence of causality between exogenous variables and RGDP. From the findings we conclude that Private Sector Savings Deposit, State Government Savings Deposit and Local Government Savings Deposit yielded positive and significant relationship with RGDP. We recommend that more incentives need to be in place to discourage leakages and high volatility of foreign savings deposit towards improved growth of the local economy.

Odimgbe, Sampson and Ogueze (2024) examined the effect of demand deposit on the growth of Nigeria economy using time series data from 1994-2019. Data were sourced from Central Banks of Nigeria Statistical Bulletin real gross domestic product was modeled as the function of Private sector demand deposit; State government demand deposit and Local government demand deposit. Ordinary Least Squares Regression was employed to reveal potential relationships between causes and effects of the independent variables on the dependent variable. The study found that 99% of changes in Real Gross Domestic Product can be explained by the independent variables. The overall significance of the model was proven by the F-statistic of 421.3616 with a p-value of 0.0000. The Durbin Watson statistic (1.718526) was within the acceptance threshold indicates that the dataset does not exhibit autocorrelation characteristic and were suitable for analysis. Findings further revealed that 68% per correction speed from the ECM period (1 year). With a p-value of 0.0.0000 for LNPSDD, the Null hypothesis of no significant relationship between LNPSDD and LNRGDP was rejected while those of LNSGDD and LNLGDD with p-values of 0.7083 and 0.7730 respectively are accepted as their p-values are higher than the Alpha value of 0.05. From the findings, the study concludes significant effect of demand deposits on Nigeria economic growth. It recommends that that government should encourage aggressive mobilization of demand deposits by financial institutions which if effectively channeled towards credit creation will increase financial sector contribution to gross domestic product

Yeshiwas (2021) researched on the impact of broad money supply on Real GDP of Ethiopia. The data used for this study was a time series, (2002-2017), analyzed using Vector Autoregressive model and causality test to check the short causality between broad money supply and Real GDP growth. The result of both tests revealed that broad money supply has positive significant effect on real GDP and statistically significant. Ibi et al., (2019) researched on the effect of selected macroeconomic variables on money supply in Nigeria. Cointegration test, Granger causality test and Error correction mechanism (ECM) were employed in the estimation of the relevant equations. The short-run and the long-run estimates revealed that income (GDP), credit to the private sector (CPS), net foreign asset (NFA), government expenditure (GEXP), consumer price index (CPI), interest rate (IR) and exchange rate (EXCH), all have both short-run have significant effect on money supply. Furthermore, the results of the granger causality test showed that money supply is endogenously determined in Nigeria; thereby supporting the post-Keynesian postulation that money supply is endogenous. This indicates that macroeconomic variables had greater influence in determining the rate of money growth in Nigeria.

Gnawali (2019) examined the effects of money supply on the economic growth of Nepal over the period 1975 to 2016, using co-integration, Vector Error Correction Model (VECM) and Causality test to conclude. The study showed that money supply is positively significant to economic growth and foreign assistant is negatively significant to the economic growth of Nepal and the study suggests to increase the money supply for achieving higher and rapid economic growth.

Ufoeze, Odimgbe, Ezeabasili and Alajekwu (2018) investigated the effect of monetary policy on economic growth in Nigeria. The natural log of the GDP was used as the dependent variables against the explanatory monetary policy variables: monetary policy rate, money supply, exchange rate, lending rate and investment. The time series data is the market-controlled period covering 1986 to 2016. The study adopted an Ordinary Least Squared technique and also conducted the unit root and co-integration tests. The study showed that long run relationship exists among the variables. In addition, the core finding of this study showed that monetary policy rate, interest rate, and investment have insignificant positive effect on economic growth in Nigeria. Money supply however has significant positive effect on growth in Nigeria. Exchange rate has significant negative effect on GDP in Nigeria. Money supply and investment granger cause economic growth, while economic growth causes interest rate in Nigeria.

Adediyan (2018) conducted a research on the determinants of money supply in Nigeria covering 1980 to 2019, adopting the Autoregressive Distributed Lag (ARDL) approach. Data used for the study were collected from the 2019 CBN Annual Statistical Bulletin. The independent variables were reserve ratio, monetary base, liquidity ratio, currency deposit ratio interest rate while the dependent variable was proxied as broad money supply. The study found that financial liberalization is an important factor in determining money supply in Nigeria, in addition to currency ratio, required reserve ratio and high-powered money.

Ominyi and Inalegwu (2017) adopted the Vector Error Correction Model (VECM) in ascertaining the relationship between gross domestic product (GDP) and private savings (SAV) including other

relevant exogenous variables in the model. The results showed a positive relationship between GDP and Savings such that a percent change in Savings would result in an 8.29% change in GDP.

Adeniji, Timilehin and Gamaliel (2017) investigated the long and short run relationships between broad money supply and real aggregate output (GDP) in Nigeria from 1981 to 2015. The study employed an unrestricted version of Mixed Data Sampling (U-MIDAS) and Autoregressive Distributed Lag (ARDL) techniques. The results of U-MIDAS test affirmed existence of a long and short-run relationship between yearly real GDP and quarterly broad money supply at different season while the ARDL result affirmed that money supply impacted significantly on real GDP in the long run only. Furthermore the study revealed disequilibrium correction terms from the two analytical approaches showing evidence that there is a tendency for growth targeting in Nigeria which is one of the major objectives of Nigeria economy though at a slower rate.

Literature Gap

From the empirical studies, some major gaps in literature were observed. A model gap was observed as previous studies concentrated on aggregate broad money supply like Adeniji, at el., 2017; Khobai & Dingela, 2017; Chude & Chude, 2016). In this research, disaggregated broad money supply components are employed. A disaggregation of money supply components into micro components are likely to capture the cyclical factors that drive the economy and their dynamics and paint a better picture of the relationship between money supply and the economy in the long run.

Some of the reviewed studies were carried out in other countries outside Nigeria as seen in (Tuyishime , Memba, & Mbera, 2015; Pitoňáková, 2016); Aslam, 2011). As the countries studied operate under different legal and economic environments, this constitutes a location gap.

There exists conflicts and in some cases inconclusiveness in research findings due to methodologies, estimation tools, variables and other analytical tools used. Some of the studies found positive relationship between money supply and economic growth (Ogunmuyiwa, & Ekone, 2010); Chinwuba, Akhor & Akwaden, 2015); Ifionu, & Akinpelumi, 2015). However, some other studies found negative impact of money supply on economic growth (Suleiman, 2010); Amassona, Nwosa, & Olaiya, 2011; Ehigiamosoe, 2013). Also, some of the reviewed studies used inappropriate estimation tools while some failed to evidently carry out diagnostic tests to ascertain the integrity of the data in line with the Classical Regression Linear Model Assumptions as observed in (Suleiman, 2010, Michael, & Ebibai, 2014; Adefeso, & Mobolaji, 2010).) providing gap in estimation tools. This study focused on time deposits and Nigeria economic growth.

METHODOLOGY

This study adopted *ex-post facto* design to determine the impact of broad money supply on the Nigerian economy. *Ex-post facto* design is a systematic empirical inquiry in which the investigator has no direct control over the values of the variables applied for the study. The preference for this design is influenced by the nature of the data to be processed which for this study is time series. Time series secondary dataset covering the period, 1994 to 2019, was obtained from CBN

Statistical Bulletin (various issues). The following data were sourced: Time deposit is the independent variables while the dependent variable is the Real Gross Domestic Product (RGDP).

Model Specification

Irving Fisher's Quantity Theory of Money is adopted for this study. According to the theory, MV = PT, where M represents money stock, V as velocity of money, P as price level while T represents volume of transactions. It expresses the relationship existing between money, price and output. While MV represents total spending, PT represents what is purchased. Hence, the model of this study consists of the dependent variable, RGDP, and the independent variables consisting of broad money supply components.

Functionally the relationship between RGDP and TD is stated as follows:

RGDP =f(TD)

RGDP = f(PSTD, SGTD, LGTD)

Where PSTD = Private sector time deposit; SGTD = State government time deposit; LGTD = Local government time deposit

The econometric model is presented thus:

$RGDP = d_0 + d_1PSTD + d_2SGTD + d_3LGTD + U_t$

The model in the log linear form can be expressed as:

$LnRGDP = do + d_1lnPSTD + d_2lnSGTD + d_3LGTD + ut$ …… (4)s

d_O is the intercept, d_1-d_3 are coefficients of the independent variables and U is the error term representing the unobserved factors which influence the dependent variables. The *a priori* expectations are d_1-d_3>0

Econometric techniques were employed in the analysis of the time series data with the aid of E-views10 software statistical package.

The analytical tools to be employed include the following:

Descriptive Statistics

Descriptive statistics are introductory statements which describe, summarize and arrange the time series data in a manner that it could be easily understood at a glance. Quantitative measures such as the mode, mean, median, maximum, minimum, standard deviation, skewness, kurtosis, Jarque Bera statistics and probability, sum and sum square deviation and number of observations are applied in the descriptive statistics.

Stationarity Test

The ADF technique tests the null variables of the model for non stationarity or for the presence of unit root.

Ho: The time series is non-stationary (i.e there is unit root).

Decision Rule

T-ADF $_{(absolute\ value)}$>t-ADF $_{(critical\ value)}$: Reject H_o

Note that each variable based on its own ADF test value, if the variable was stationary at level, then it was integrated of order zero i.e 1(0). Note that the appropriate degree of freedom was used. If the variables were stationary at level, it means that even in the short run they move together. The unit root problem earlier mentioned can be explained using the model:

$Y_i = Y_{t-1} + \mu_1$…….(a)

Where Y_t is the variable in question; μ_1 is stochastic error term.

Equation (a) is termed first order regression because we regress the value Y at time "t" on its value at time (t-l). If the coefficient of Yt-l is equal to l, then we have a unit root problem (non-stationary situation). This means that if the regression

$Y_t = L\ Y_{t-l} + \mu_1$…….(b)

is solved and L (lag time) is found to be equal to l then the variables Y_t has a unit root (random work in time s cxeries econometrics).

If a time series has a unit root, the first difference of such time series are usually stationary. Therefore to solve the problem, take the first difference of the time series. The first difference operation is shown in the following model.

$\Delta Y_i = (L-l)\ Y_{t-l} + \mu_t$……...(c)

$\_\_Y_{t-l} + \mu_t$……..... (d) .

(Note: = l-l=0; Where L = l; $\hat{\Delta}Yt = Yt - Y_{t-l}$)

Integrated of order 1 or1 (1)

If the original (random walk) series is differenced once and the differenced series becomes stationary, the original series is said to be integrated of order 1(1).

Integrated of Order 2 or 1(2)

If the original series is differenced twice before it becomes stationary (i.e. the first difference of the first difference), then the original series is integrated or order 2 or 1 (2). Therefore if a time series has to be differenced Q times before becoming stationary it said to be integrated of order Q or 1(q).

We shall test the stationarity of our data using the ADF test.

Regression Analysis

The Classical Linear Regression Model (CLRM) which represents the foundational model for most higher and vigorous econometric analyses form the most fundamental technique of data analyses for this work. The rule of thumb is to use OLS when the result of stationarity test is in the order1(0) or 1(1), while ARDL should be employed if it is a case of mixed order but not in the order 1(2). This study adopted both OLS and ARDL testing techniques based on the result of the unit root test.

Ordinary Least Square (OLS): Least Squares Regression can be employed to make models of real systems and to reveal potential relationships between causes and effects. The major aims of mathematical modelling lies in explanation and prediction which are sometimes contradictory. By means of OLS modelling, one can explain the causes and effects or predict the effects with the causes. The structural problems of a model can be reflected by residuals, that is, a series of residuals without autocorrelation. The residual series free of autocorrelation satisfies a normal distribution. Regression analysis was employed in the analysis of the model of this study in order to establish the reliability and robustness of the parameter estimates in explaining the performance of the baseline variables in causing changes in Real GDP in the period studied.

(ii) Autoregressive Distributed Lag (ARDL) Approach
This study employed the Autoregressive Distributed Lag (ARDL) bounds test approach proposed by Usoro (2018) based on unrestricted error correction model. Compared to other co-integration procedures such as Usoro (2018) the bounds test approach appears to have gained popularity in recent times for a number of reasons.

Diagnostic/Reliability Checks

This is an important stage in the analysis of the study because it validates the parameter estimating outcomes achieved by the estimated model such as residual autocorrlation and normality among others. Some of these tests are briefly discussed as follows:

(i) Jarque-Bera Normality Test: The residual normality test was used in the study. It is the multivariate extension of the Jarque-Bera normality test. Jarque-Bera test is conducted inorder to establish if the sample data is perfectly symmetrically around the mean. A distribution of the time series data or the error (residual) in regression symmetrically around the mean is an evidence of normality of data. In other words. The sample data come from normal distribution and qualifies for linear regression model analysis.

Normality test usually combines both skewness and kurtosis of the sample data to see if the combination matches a normal distribution with aa skew equal to zero (0) and kurtosis equal to three (3). If the sample data possesses these two properties, it will be concluded that the data came from normal distribution and therefore valid for linear regression analysis. If Jarque-Bera = 1 or higher (JB>1), the null hypothesis (Ho) of normality of data or normal distribution of data is rejected. If JB =0, the data is concluded to be perfectly and normally distributed around the mean and qualifies for

linear regression analysis. The data is assumed to have passed the normality test. The normality of data can also be determined from the probability value (p-v), if the computed or the actual p-v <0.05 (that is less than the Alpha significant value of 0.05 or equal to it) then, it is a strong evidence that the Null hypothesis of normality of data was invalid and should be rejected. If p-value >0.05 then the alternative hypothesis then has to be accepted. The p-value rejects or accepts the Null hypothesis of normality of data. The smaller the p-value is from the Alpha significant value of 0.05, the stronger the evidence that Null hypothesis of normality of data should be rejected.

(ii) Breusol Godfrey Serial Correlation LM Test: The Langrange Multiplier (LM) test was used in this study since it is a multivariate test statistic for residual serial correlation up to the specified lag order. [53] argued that the lag order for this test should be the same as that of the corresponding VAR. The test statistic for the chosen lag order (m) is computed by running an auxiliary regression of the residuals (m) on the original right-hand explanatory variables and the lagged residuals (ECM). [63] presents the formula of the LM statistic and provides details on this test. The LM statistic tests the null hypothesis of no serial correlation against an alternative of autocorrelated residuals.

(iii) White heteroskedasticity Test: This test, proposed by Halbert White(1980), is a statistical test used to establish the differing variances of the error term in a time series data set. Heteroskedasticity arises most often with cross-sectional data mainly due to the presence of outlier in the data. Outlier in heteroskedasticity means that there are observations that are either small or large with respect to the other observations in the sample. Heteroskedasticity is also caused due to omission of variables of the error terms differ across observations. Simply, heteroskedasticity occurs when the variance for all observations in a data set are not the same. Conversely, when the variance for all observations is equal, it is known as homoskedasticity.

(iv) Heteroskedasticity is unequal variance of the data along the regression line. If regression analysis is run having data that shows heteroskedasticity, it can ruin the results (at the very least, it will give biased coefficients). The standard errors may be misleading and biased. If the standard errors of the stimates are biased, then the t-stistic or f-statistic or LM static cannot be used for drawing inferences. OLS, even if standard errors could be correctly measured, is no longer efficient. OLS will not give the estimator with the smallest variance (that is, the estimators). To correct the consequences of misleading and incorrect standard errors, there is need to use ordinary least squares regression using robust standard errors. Regressing with robust standard errors corrects for misleading and incorrect standard errors. Correcting for heteroskedasticity may likely lead to higher R^2. A more formal way of identifying heteroskedasticity is by conducting a Bruesch-Pagan test, where we estimate a variance function that depends on the independent variable(s) and test the null hypothesis that heteroskedasticity is not present against the alternative hypothesis that heteroskedasticity is present.

(v) Residuals (Cusum and Cusumsq) Stability Tests: CUSUM and CUSUM of Square tests for parameter stability were first introduced into the Statistics and Econometrics literature by Brown, Durbin and Evans in 1975. Cummulative Sum (CUSUM) and Cummulative Sum of Square (CUSUMSQ) are techniques for testing the constancy of regression relationships over time. CUSUM and the CUSUMSQ tests are tests which are applied to assess parameter stability.

Co-integration Test (Johansen's test)

Thus co-integration of two (or more) time series suggests that there is a long- run or equilibrium relationship between them. There is a difference between test for unit root and test for co-integration. The former is performed on univariate (i. e single) time series, while the deals with relationships among a group of variables where (unconditionally) each has a unit root. A number of methods exist for testing co-integration. In this study, we shall use the Johansen's method. If variables are co-integrated, it means that in the long-run the series will move closely together and their short-run disturbances or difference between then will be constant. The Johansen's co-integration test developed in 1995 shall be applied in this study where relevant or the ARDL Bound test in the case of mixed order stationarity.

Causality Test

Granger causality test is a statistical hypothesis for determining whether one time series is useful for forecasting another. Although correlation regression analysis deals with dependence of one variable on the other, it does not necessarily imply causation in the real sense. A statistical correlation relationship in itself cannot logically imply causation. Correlation means there is relationship or pattern between the values of the two variables under study in which they can change together while causation means that one event causes another event to occur. According to Pitoňáková (2016) a variable say *y* is said to granger cause another variable say *x* if past and present values of *y* help to predict *x*. The traditional Granger Causality (based on a bi-variate relationship) recognizes the following types:

Unidirectional Causality: This is a case where X granger-causes Y or Y granger-causes X but not the reverse in each case. This means the causality either runs from X to Y (X→Y) or from Y to X (Y→X) but without the reverse occurring in each case.

Feedback (Bilateral) Causality: In this case the causality runs on both sides but on the condition that the coefficients of the set (variables) are statistically and significantly different from zero in both cases, that is, (X↔Y) and (X↔Y). This is the case where the coefficients of the set (X and Y) are statistically insignificant in both regressions. In this case, neither X granger-cause Y nor Y granger-cause X. Y and X represents the dependent and independent variables respectively. In order to complement this study, a causality test was conducted to establish the direction of causality between money supply variables and real GDP.

The Error Correction Model (ECM)

This test is conducted to ascertain the short run effect of the explanatory variables on the dependent variable.

Pitoňáková (2016) in the study of the path to economic growth, established that the long-run path of economic growth is paved with instabilities caused by economic shocks. The short run shocks create error along the growth trajectory, which have to be corrected. The correction of the errors will take some periods (years). ECM is designed to establish the magnitude of the error created by economic shocks and also determine how long it will take to clear the error on the long run growth path to enable the variables converge once more at an equilibrium point for the economy to continue the long run movement. Therefore the purpose of the ECM test is to calculate the speed of the periodic adjustment of the variables of the model in the match towards long run equilibrium and to determine the number of period (year) it would take the model to achieve long run equilibrium.

Overparameterized Error Correction Model (OPECM)

The overparameterized error correction model was constructed after the existence of long-run relationship between the variables has been established. This is to ascertain that there are no overbloated and insignificant variables with wrong signs which could mislead the model interpretation.

The Parsimonious Error Correction Model (PECM)

The Parsimoniuos Error Correction Model was constructed where the overparameterized ECM was found to be unsuitable for calculating ECM coefficients probably because of overbloated and insignificant variables with wrong signs. The Parsimonious model is a refined model capable of producing the right ECM coefficients and rejecting overbloated and significant variables with wrong signs.

RESULTS AND DISCUSSION

Table 1: Data of the Descriptive Statistics

	LNRGDP	LNPSTD	LNSGTD	LNLGTD	LNFCD
Mean	10.62796	6.667074	2.746487	0.006137	5.879374
Median	10.70191	7.222176	3.077628	0.019610	6.495441
Maximum	11.18988	9.149673	7.245898	3.277522	9.052652
Minimum	9.902437	3.223266	-0.494296	-2.207275	0.530628
Std. Dev.	0.477069	1.882400	1.802718	1.421615	2.616888
Skewness	-0.268258	-0.466737	-0.019005	0.119960	-0.522385
Kurtosis	1.494538	1.850346	3.008693	2.379527	1.958997
Jarque-Bera	2.979976	2.558591	0.001774	0.516307	2.537768
Probability	0.225375	0.278233	0.999114	0.772476	0.281145
Sum	297.5829	186.6781	76.90163	0.171848	164.6225
Sum Sq. Dev.	6.145063	95.67260	87.74439	54.56670	184.8988
Observations	28	28	28	28	28

Source: Author's Eviews10 Output

The descriptive statistics shows that most of the variables exhibited positive mean and positive median which is an indication that the dataset may come from normal distribution. The mean and

median of the dataset are near equal confirming the normal distribution of the time series. The maximum value of RGDP in the time series in log form was 11.19units with minimum value of 9.90units. Also, the maximum and minimum values for the other variables were captured. While the skewness captures how variables lean to one side, the kurtosis shows the peakness of distribution. The skewness close to zero and kurtosis also close to 3 except LNLGSD validate the assumption that the dataset came from normal distribution. Jarque-Bera statistic (JB) with most variables showing P. values greater than Alpha value of 0.05 implies a rejection of the Null hypothesis and acceptance of the normal distribution of the time series.

Unit Root Test

Table 2: Summary of ADF Unit Root Test

Variable		t-statistic	Critical value	Prob.	Order of Integration
LNRGDP	Level	-1.514410	-2.976263	0.5112	1(1)
	1st Diff	-6.018807	-2.986225	0.0000	
LNPSTD	Level	-1.438451	-2.976263	0.5486	1(1)
	1st Diff	-6.045597	-2.981038	0.0000	
LNSGTD	Level	-1.981183	-2.976263	0.2928	1(1)
	1st Diff	-7.677770	-2.981038	0.0000	
LNLGTD	Level	-2.692846	-2.976263	0.0883	1(1)
	1st Diff	-6.757751	-2.981038	0.0000	

Source: E-views10 output

The results of the unit root test above reveal that all the variables are stationary at 1st difference.

Normality and Reliability tests for Model IV

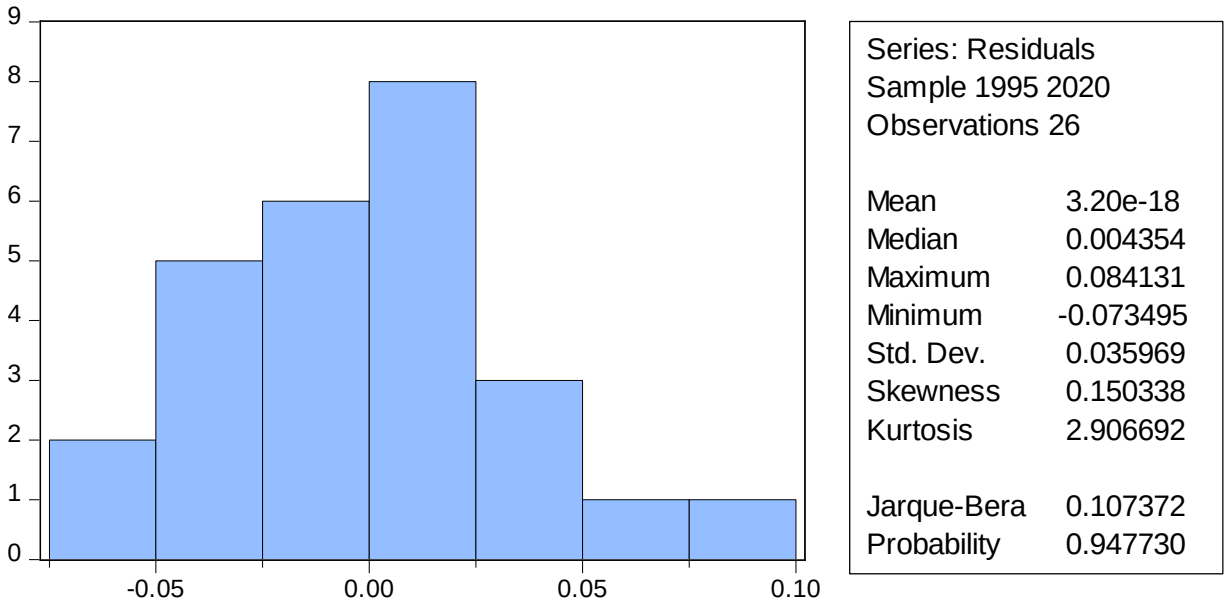

Figure 1: Jarque-Bera Normality Test for Model IV

Source: E-views10 output

In order to further ascertain that the data for the study were good enough for analysis, the dataset was investigated for normality, that is, if dataset were normally distributed at the mean. The Jarque-Bera Normality test which requires that for a series to be normally distributed, the histogram should be bell-shaped. The skewness and the kurtosis should be 0 and 3 respectively or close to them. The result of the test is presented in Figure 1. From the figure it can be seen that the data distribution follows a near bell-shaped form as required. The skewness of 0.150338 and the kurtosis of 2.906692 are close to their critical values of 0.0000 and 3.0 respectively indicating normal distribution to an extent. Furthermore, the JB statistic and p-value of 0.107372 and 0.95, respectively, suggests that the residuals of the model are normally distributed.

Table 3: Results of Correlation, Heteroskedasticity, and Ramsey Reset Tests

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	8.069379	Prob. F(2,19)	0.6029
Obs*R-squared	11.94145	Prob. Chi-Square(2)	0.6026
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.317238	Prob. F(4,21)	0.8632
Obs*R-squared	13.481557	Prob. Chi-Square(4)	0.8299
Scaled explained SS	0.921427	Prob. Chi-Square(4)	0.9215
Ramsey RESET Test			
Equation: UNTITLED			
Specification: D(LNRGDP-2) C D(LNPSTD-2) D(LNSGTD-2) D(LNLGTD-2) ECM(1)			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	0.442871	20	0.6626
F-statistic	0.196134	(1, 20)	0.6626
Likelihood ratio	0.253732	1	0.6145
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	0.000314	1	0.000314
Restricted SSR	0.032345	21	0.001540
Unrestricted SSR	0.032031	20	0.001602
LR test summary:			
	Value		
Restricted LogL	50.06972		
Unrestricted LogL	50.19659		

Source: E-views10 output

Breusch-Godfrey Correlation and Breusch-Pagan-Godfrey Heteroskedasticity results showed F-statistics of 8.069379 and 2.317238; and p-values of 0.6029 and 0.8632, respectively implying. Similarly, the Ramsey Reset result showed p-value of 0.6656 implying that there is no misspecification error in

Analysis of Co-integration Test for Model

Having established the stationarity of the individual variables, it is also important to establish the cointegration characteristics of the linear combination of the variables in order to establish the existence of a long-run or equilibrium relationship between the dependent variable and the independent variables (that is, whether they are co-integrated). We, therefore, tested for co-integration to establish long-run stationarity or stable relationship using the Johansen Co-integration test. The unit root tests results show all variables to be integrated at 1st order 1(1) and qualified for the use of Johansen Co-integration test and the result is shown on Table 4. below

Table 4: Johansen Co-integration Test Result for Model IV

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.553957	55.87300	54.07904	0.0343
At most 1	0.423180	34.88219	35.19275	0.0540
At most 2 *	0.380979	20.57635	20.26184	0.0453
At most 3	0.267859	8.106346	9.164546	0.0791

Trace 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

Source: E-views10 output

Trace test results show two co-integrating equations at 5% level of significance indicating co-integration of the variables. The result showed that a long run relationship exists between the explained variable and the explanatory variables. They move together.

Error Correction Model (ECM)

Having established that the variables of the model are cointegrated and show evidence of long run relationship,the next investigation on the ECM follows. The Error Correction Mechanism (ECM) test is carried out to calculate the speed required for correcting the short run disequilibrium resulting from short run shock and returning the variables to a long run equilibrium point.

Table 5: Error Correction Model Test

Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.047047	0.006999	6.722156	0.0000
D(LNPSTD)	0.008997	0.019060	0.472041	0.6415
D(LNSGTD)	-0.002617	0.005991	-0.436834	0.6665
D(LNLGTD)	-0.003236	0.004227	-0.765585	0.4521
ECM(-1)	-0.273634	0.054502	-5.020620	0.0001
R-squared	0.544006	Mean dependent var		0.047683
Adjusted R-squared	0.461098	S.D. dependent var		0.035847
S.E. of regression	0.026315	Akaike info criterion		-4.271784
Sum squared resid	0.015234	Schwarz criterion		-4.031814
Log likelihood	62.66908	Hannan-Quinn criter.		-4.200428

F-statistic	6.561559	Durbin-Watson stat	1.879279
Prob(F-statistic)	0.001238		

Source: Author's Eviews10 Output

As in Table 5 above, the Error Correction Co-efficient of -0.273634 is properly signed, and significant at 5% level of significance with (0.0001) p-value. The co-efficient shows that the speed of adjustment of the model is approximately 27.36 percent annually due to a deviation from equilibrium. It would therefore take about three years and nine months for a long run equilibrium to be attained and calculated as follows : 100/27.36 years = approximately 3years 8months.

Interpretation of the Model

The Co-efficient of determination (R^2) is 0.544006 which is approximately 54.4%. This indicates that about 54.4% of changes in Real Gross Domestic Product can be explained by the independent variables represented as Private Sector Time deposit, State Government Time Deposit and Local Government Time deposit. With a value of 54.4%, it means that 45.6% of changes in LNRGDP were caused by factors outside the model. the overall significance of the model is tested with F-statistic. The F-value is 6.561559 with p-value of 0.001238 implying a rejection of the Null hypothesis and the acceptance of the alternative (H_A) hypothesis that all the explanatory variables collectively have significant influence on real gross domestic product. The Durbin Watson statistic (1.879279) is approximately 2 indicating that the model is not characterized by autocorrelation and therefore suitable for the analysis. The individual variables are stated with their characteristics in equation form as follows:

LNRGDP = 0.047047 + 0.008997LNPSTD - 0.002617LNSGTD - 0.003236LNLGTD

0.472041* -0.436834* -0.765585*

0.019060# 0.005991# 0.003954#

Where * represents t-statistic, # represents standard error

The results depict coefficients of 0.0090, -0.0026, -0.0032 and t-statistic of 0.472, -0.437, --0.766 for LNPSTD, LNSGTD and LNLGTD respectively. Only LNPSTD has positive but no significant effect on LNRGDP. LNSGTD, LNLGTD have negative and no significant effect on LNRGDP. The result shows, for instance, that a 10% increase in PSTD will lead to an increase of 0.09% in RGDP.

Table 6: Pairwise Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Prob.
LNPSTD does not Granger Cause LNRGDP	26	5.68081	0.0107
LNRGDP does not Granger Cause LNPSTD		0.29141	0.7502
LNSGTD does not Granger Cause LNRGDP	26	1.39205	0.2706
LNRGDP does not Granger Cause LNSGTD		2.83169	0.0815
LNLGTD does not Granger Cause LNRGDP	26	0.46476	0.6346

LNRGDP does not Granger Cause LNLGTD		1.40388	0.2678
LNSGTD does not Granger Cause LNPSTD	26	0.47225	0.6301
LNPSTD does not Granger Cause LNSGTD		4.21791	0.0288
LNLGTD does not Granger Cause LNPSTD	26	1.01300	0.3802
LNPSTD does not Granger Cause LNLGTD		1.75983	0.1965
LNLGTD does not Granger Cause LNSGTD	26	0.23061	0.7960
LNSGTD does not Granger Cause LNLGTD		2.67134	0.0925

Source: E-views10 output

Interpretation of Granger Causality Test Results

1. LNPSTD does not Granger Cause LNRGDP: The p-value of 0.0107 is above the Alpha value of 0.05 thereby accepting the Null hypothesis of LNPSTD does not Granger cause LNRGDP. The low F-statistic of 5.68081 confirms the acceptance of the Null hypothesis.

2. LNRGDP does not Granger Cause LNPSTD: The p-value of 0.7502 is greater than the Alpha value of 0.05. The Null hypothesis is here accepted that LNRGDP does not Granger cause LNPSTD. The low F-statistic confirms the acceptance of the Null hypothesis.

3. LNSGTD does not Granger Cause LNRGDP: The p-value of 0.2706 is higher than Alpha value of 0.05. The Null hypothesis here is accepted. Therefore, LNSGTD did Granger Cause LNRGDP. The low F-statistic confirms the acceptance of the Null hypothesis.

4. LNRGDP does not Granger Cause LNSGTD: The p-value of 0.0815 is greater than the Alpha value of 0.05. The Null hypothesis of LNRGDP does not Granger Cause LNSGTD is accepted. The low F-statistic of 2.83169 confirms it.

5. LNLGTD does not Granger Cause LNRGDP: The p-value of 0.6346 is greater than the Alpha value of 0.05 as stated above is accepted.Therefore LNLGTD does not actually Granger cause LNRGDP.The low F-statistic of 0.46476 confirms the acceptance of the Null hypothesis.

6. LNRGDP does not Granger Cause LNLGTD: The p-value of 0.2678 is greater than the Alpha value of 0.05 The Null hypothesis as stated above is accepted. The low F-statistic of 1.40388 confirms the acceptance of the Null hypothesis.

7. LNSGTD does not Granger Cause LNPSTD: The p-value of 0.6301 is higher than the Alpha value of 0.05. The Null hypothesis as stated above holds. The low F-statistic of 0.47225 confirms the acceptance of the Null hypothesis.

8. LNPSTD does not Granger Cause LNSGTD: The p-value of 0.0288 is greater than the Alpha value of 0.05. The Null hypothesis is here accepted that LNPSTD does not Granger cause LNSGTD. The low F-statistic of 4.21791 confirms the acceptance of the Null hypothesis.

9. LNLGTD does not Granger Cause LNPSTD: The p-value of 0.3802 is higher than the Alpha value of 0.05. The Null hypothesis as stated above is accepted. The low F-statistic of 1.0300 confirms the acceptance.
10. LNPSTD does not Granger Cause LNLGTD: The p-value of 0.1905 is greater than the Alpha value 0.05. The Null hypothesis of no significant relationship between LNPSTD and LNLGTD is accepted. The low F-statistic of 1.75983 confirms the acceptance.
11. LNLGTD does not Granger Cause LNSGTD: The p-value of 0.7960 is greater than the Alpha value of 0.05.The Null hypothesis is here accepted. The low F-statistic of 0.23061 confirms the acceptance.
12. LNSGTD does not Granger Cause LNLGTD: The p-value of 0.0925 is higher than the Alpha value.The Null hypothesis as stated above is accepted. The low value F-statistic of 2.67134 confirms the acceptance.

Conclusion

To investigate if Time Deposit has any relationship with Nigeria's RGDPN ECM result shows that while PSTD is positive and contribute to RGDP, SGTD and LGTD revealed negative relationship. PSTD results are in tandem with the *a-priori* expectation. [89] in his study of the role of banks in capital formation and economic growth agrees in his finding that Commercial Banks Deposit Liabilities is elastic to Gross Fixed Capital Formation in Nigeria. The reason for the significant positive relationship between PSTD and RGDP is probably due to fact that time deposits are less volatile and provide banks with cheaper means of funding loans and advances to the public. The loans and advances provided by banks also help in increasing investments in both real and financial assets thereby enhancing economic growth. However, where the outcome was negative he asserted that it could be due to the manipulation of maximum lending rates by the monetary authorities which has not brought about significant increase in GDP. On the other hand, the result of Pairwise Granger Causality established that SGTD and LGTD are neutral and do not Granger cause RGDP. Local government time deposit, for instance, does not influence RGDP probably due to lack of autonomy as well as the zero allocations by most local governments in Nigeria hardly leaving them with the resources for investments.

Recommendations

i. More incentives need to be in place to discourage leakages and high volatility of time deposit towards improved growth of the local economy. Time Deposit shows positive and significant influence on RGDP and as such authorities should encourage repatriation of foreign currency proceeds and diaspora remittance into Nigeria's economy by encouraging exports and inward unrequited transfers.
ii. More credit facilities should be granted from time deposits to boost employment and output. Result of the study reveals that all the Time deposit components made no significant impact on the economy. This implies that though time deposits recorded a rising trend, it failed to act as a growth-booster due to banks' inability to grant facilities therefrom.

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