

Impact Of Money Supply on Economic Growth in Nigeria

ANAS DAYYABU¹, DAHIRU ALHAJI BALA BIRNIN TSABA (PHD)², SANI ABUBAKAR GARBA³

^{1,3}Department of Banking and Finance, Abdu Gusau Polytechnic, Talata Mafara Zamfara State.

² Department of Banking and Finance Federal Polytechnic, Kaura Namoda, Zamfara State.

Abstract- This research examines the impact of money supply on economic growth in Nigeria using quarterly data from 1993Q1 to 2022Q4. The properties of the data were first checked using both descriptive statistic and unit root tests to avoid spurious regression. Based on that, the research has used the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests with trend and intercept. The results of unit root tests found that the variables were mixture of integration processes as some were stationary at level while others were stationary at first difference. This justified for the use of Autoregressive Distributed Lag (ARDL) model. The result of bound test revealed that, the variables under study are co integration in the long run. Also, findings showed that, both in the short run and long run, Money Supply has a positive impact on economic growth in Nigeria, while Monetary policy rate (MPR) and exchange rate (EXCR) are statistically significance and have a negative impact on economic growth in Nigeria in the long run. The result from granger causality test revealed the presence of bidirectional causality between money supply and economic growth in Nigeria, while there is unidirectional causality between monetary policy rate (MPR) and economic growth, exchange rate (EXCR) and economic growth, running from MPR to economic growth and EXCR to economic growth in Nigeria respectively. The study recommends that, government should take necessary policies that will make sure adequate money in the economy by using both monetary and fiscal policies in the country. Also government should reduce the level of monetary policy rate (MPR) as it has a negative effect on economic growth in Nigeria.

Keywords: Money Supply, Monetary Policy Rate, Autoregressive Distributed Lag (ARDL) Model

I. INTRODUCTION

In recent years the relationship between money supply and economics growth rate had received several researches than any subject matter in the field. Different schools of thought have hypothesized on the effect of money supply and economic growth. Classical economist such as Irving Fisher posits that the velocity of money (V) and the output (Y) is

constant. Given that the Y and V are fixed and the price rises as proportion to increase in the money supply. these simply means money supply significantly affect the aggregate output and price level positively given the velocity of money constant.

Thus, either price or output raise or both of them increase as a result of raise in money supply. While others disagreed, according to Keynesian transmission mechanism in other to increase the output the government intervention is needed to stabilize the economy through monetary policy.

Since the investors are been encourage through decrease in interest rate which cause the cost of lending to decrease by increasing the money supply.

Nigeria is the giant of Africa and an oil-based economy. It is a multi- ethnic and culturally diverse federation of 36 autonomous states and the Federal Capital Territory. Following the pandemic induced recession in 2020, Nigeria `s economic growth recovered but the monetary policy is inherently weak. Amidst the global commodity shock, a depreciating currency, trade restriction, and monetization of the deficit, inflation is surging and pushing millions of Nigeria into poverty (CBN 2020).

Since then, Nigeria finds it hard to benefit from the surging global oil price, as oil production has fallen to historic lows and petrol subsidy continues to consume a large share of the gross oil revenues.

The economic activities is been regulated over the years by the use of monetary policy; a deliberate strategy by monetary authority Central Bank of Nigeria by the use of interest rate, exchange rate, money supply among others to stabilize the economic activities; expansionary monetary policy is a policy use in order to boost economy in which the Central Bank of Nigeria increases the stock of money by

decrease in the cost of lending resulting an increase in the national output. In Nigeria, monetary policy has been used since the central bank of Nigeria was saddled the responsibility of formulating and implementing monetary policy act of 1958. This role has facilitated the emergence of active money market where treasury bills, financial instrument use for open market operations and raise debt for government, have grown in volume and value becoming a prominent earning asset for investors and source of balancing liquidity in the market.

The post 1986 monetary policy was characterized by direct monetary instruments, such as selective control, administer interest rate and exchange rates, credit ceilings, cash reserve requirements and special deposit to combat inflation and maintain price stability were employed. The fixing of interest rates at relatively low levels was done mainly to promote investment and growth. Occasionally, Special deposit was imposed to reduce the amount of excess reserves and credit creating capacity of the banks (Uchendu, 2009; Okafor, 2009). Against this background the paper seeks to explore the impact of money supply on Economic growth in Nigeria

II. LITERATURE REVIEW

2.1 Conceptual Literature

2.1.1 Concept of Money Supply

Money supply refers to all the currency and liquid instruments in a country's economy. It includes both cash and other types of deposit that can be used almost as easily as cash. It is believed that money supply has a positive influence on economic growth.

Ahuja (2010) defined money supply as the total stock of monetary media of exchange available to a society for use in connection with the economic activity of the country. Uduakobong (2014) maintained that according to the standard concept of money supply, it is composed two elements – Currency with the Public and Demand deposits with the Public.

Concept of Economic Growth

Economic growth is the process by which a nation's wealth increases over time. Although the term is often used in discussions of short-term economic performance, in the context of economic theory it

generally refers to an increase in wealth over an extended period. It is the process of increasing the sizes of national economies, the macro-economic indications, especially the GDP per capita, in an ascendant but not necessarily linear direction, with positive effects on the economic-social sector.

Economic growth can be defined as the process by which income or output is increased. An economy is said to be growing if there is a sustained increase in the actual output of goods and services per head. The rate of economic growth therefore measures increase in real national income, during a given period of time usually a year.

Theoretical Literature

The basis of this is based on classical quantity theory, according to theory; the money supply in an economy is proportion to the general price level of goods and services. it is one of the western theories of money.

in the money supply, quantity theory of money is the theory where the variations in the price are related to the variation Neo-quantity theory' or 'Fisher theory' is the most common version known to many. It suggested that between the changes in the money supply and the general price level there is a mechanical and a fixed proportional relationship. In general, the quantity of money is where the increase in quantity of money tends to create inflation and vice versa.

The theory was formulated by polish mathematician named Nicolaus Copernicus in the year 1517 but it was later popularized by the economists Milton Friedman and Anna Schwartz. They popularized the theory after their book which was named "A Monetary History of the United States 1867-1960" in the year 1963. Vendatu the principle of classical theory is that the economy is self-regulating. The economy is always the potential of achieving the natural level of real GDP or output. This is the level of real GDP which is obtained when the economy's resources are fully employed.

Empirical Literature Review

The contribution of money supply to economic growth has been tested by different economists using different econometric techniques for example,

Mohammad, Wasti and Hussain (2009), investigated an empirical investigation between money supply, government expenditure, output and price for Pakistan for the period of 1977 to 2007, the econometrics model used was Johanson cointegration model. They found that money supply (m2) is positively impact on economic growth. While Ogunmuyiwa and Ekone (2010) examined the impact of money supply on economic growth in Nigeria for the period 1980 to 2006 using Ordinary Least Squares (OLS), Granger Causality test and Error Correction Model. The results revealed that although money supply is positively related to growth, the result is however insignificant in the case of GDP growth rates on the choice between contractionary and expansionary money supply.

Zapodeanu and Cociuba (2010) investigated linking money supply with the gross domestic product for Romania over 10 year's period, using Engle-Granger and ARIMA model. They ascertain money supply and gross domestic product are in a close relationship. Nouri and Samimi (2011) investigated the impact of monetary policy on economic growth in Iran with a data spanning the period 1974 to 2008 using the Ordinary Least Squares (OLS).

Their findings indicated that there is a positive and significant relationship between money supply and economic growth in Iran. Also, Maitra (2011) investigated the anticipated money, unanticipated money and output variation for Singapore during 1971 to 1972, using cointegration model. He found out that money supply and output are cointegrated. Das (2003) examined the long-run relationship between money and output in India and confirmed unidirectional effects with money affecting the growth of output.

Owolabi (2014) examined the effect of money supply and foreign exchange on Nigeria economy with a data covering the period 1988 to 2012 using Ordinary Least Squares (OLS).

The result shows that money supply has positive significant impact on economic growth in Nigeria. Uduakobong (2014) investigate the role of money supply on economic growth in Nigeria with a data covered the period 1985 to 2012 using augmented

Cobb-Douglas production function and relying on Co-integration test and Error- Correction Model. The result shows that money supply does not only have a positive impact on economic growth in Nigeria and such impact is strongly and statistically significant.

The same results are proven by other researchers. Like Chaitipa, Chokethaworna, Chaiboonsrib and Khounkhalaxc (2015), investigated the money supply influence on economic growth for Authorized Economic Operators (AEO) open region in the period 1995-2013, using Autoregressive Distribution Lag (ARDL) model. They found money supply is associated with economic growth.

Chude and Chude (2016) investigated the relationship between money supply and economic growth in Nigeria using Ordinary least squares (OLS) technique and they also employed other confirmatory quantitative test like unit root Augmented Dickey Fuller (ADF) test and KPSS, VAR Granger causality test and co-integration and it was found that there is a positive and significant relationship between money supply and economic growth in Nigeria. While, Aslam (2016) investigated impact of money supply on economic for Sri Lanka over the period 1959-2013, employed multivariate econometrics variable. He found that money supply has kept positive impact on the economic growth.

Galadima and Ngada (2017) examined the impact of money supply on economic growth in Nigeria for the period 1981 to 2015 by using Johansen co-integration approach to check the long run relationship among the variables while Vector Error Correction Model (VECM) is used to measure the short run dynamics and Pairwise Granger causality test is used to check the direction of the causality between the variables.

The causality test reveals bidirectional causality between Money supply and Gross Domestic Product (GDP), unidirectional causality running from Exchange rate (EXR) to Money supply (MS) and Interest rate (INT) to Money supply (MS) while there is no causality between Exchange rate (EXR) and Gross Domestic Product (GDP), Interest rate (INT) and Gross Domestic Product (GDP). Hussain and Haque (2017), researched about the empirical analysis of the relationship between money supply

result of descriptive statistic which includes the indicators of mean, minimum, maximum, standard deviation, skewness and kurtosis, as well as the test for normality of the variables. This gives us insight about the pattern and distributions of the variables.

From table 1 Economic Growth (LRGDP) and Money Supply (LMS) have the mean of 9.414965 and 8.917096 respectively, while Monetary Policy Rate (MPR) and Exchange Rate (EXCR) have mean of 12.64111 and 193.7323. In terms of median, LRGDP and LMS have 9.501479 and 9.322432, while MPR and EXCR have a median of 13.00000 and 150.7550 respectively.

For maximum and minimum, LRGDP has a minimum of 8.708465 and a maximum of 9.936444, LMS has a minimum of 33.52222 and a maximum of 55.2463. The minimum and maximum of MPR and EXCR are 6.00 and 19.00, as well as 86.97 and 414.33 respectively. The distributions of the variables, like all other variables in the literature, appear to be normal, as shown by Skewness and Kurtosis as well as the Jarque-Bera tests. The descriptive statistic presents in table below:

Table 1 Descriptive Statistic

	LRGD			
	P	LMS	MPR	EXCR
Mean	9.4149	8.9170	12.641	193.73
Median	9.5014	9.3224	13.000	150.75
Maximum	9.9364	10.687	19.000	414.33
Minimum	8.7084	6.4118	6.0000	86.970
Std. Dev.	0.3692	1.2333	3.0317	102.17
Skewness	0.5125	0.5051	0.2291	1.1136
Kurtosis	1.9834	1.9344	3.2515	2.5787
Jarque-Bera	2.9901	2.2646	1.0479	1.6977
Probability	0.1184	0.2160	0.5921	0.3257

		866.17	820.37	1162.9	17823.
Sum	68	28	82	37	
Sum Sq.	12.404	138.42	836.43	95002	
Dev.	13	00	20	9.2	
Observations	92	92	92	92	

Source: Author's Computation, 2023 using E-views 10

4.2 Unit Root Test

Before conducting cointegration analysis, the time series properties of the series were checked first. Various methods can be used to examine the stationarity or otherwise of the series. In this study, two different unit root tests were employed in order to have the robust results. These are Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root tests. The tests are conducted at level and first difference, both with trend and intercept. All the unit root tests have a null hypothesis stating that, the series in question has a unit root against the alternative that the variable does not has a unit root. Table 2 presents the results of various unit root tests with trend and intercept as:

Tables 2 Unit Root Tests.

	ADF Unit Root Test at Level		ADF Unit Root Test at First Difference	
	T	Probability	T	Probability
LRGDP	0.203	0.9977	-4.93991	0.0006*
LMS	-	0.8347	-	0.0000*
MPR	-	0.5471	-	0.0000*
EXCR	-	0.9634	-	0.0177**

	PP Unit Root Test at Level		PP Unit Root Test at First Difference	
	T	Probability	T	Probability
LRGDP	0.7775	11	3.864122	

LRG	3.8177	0.0199		
DP	78	**	-14.9542	0.0000*
	1.4473			
LMS	51	0.8402	-9.81563	0.0000*
	2.0846			
MPR	58	0.5471	8.228702	0.0000*
:				
EXC	0.9970			
R	85	0.9387	8.474187	0.0000*

Source: Source: Author's Computation, 2023 using E-views 10

Note: * & ** indicate Stationary at 1% and 5% level of significant respectively.

Table 2 presents the unit root tests using ADF and PP tests with trend and intercept. The results of ADF unit root tests indicate that, LRGDP, LMS and MPR were stationary at first difference at 1% level of significance, while EXCR was stationary at first difference at 5% level of significance.

The results of PP unit root tests show that, LRGDP was stationary at level at 5% level of significance while LMS, MPR and EXCR were stationary at first difference at 1% level of significance. An examination of table 2 reveals that, the series are mixture of order of integration as some variables were stationary at first difference and are thus characterized as I (1) processes, while LRGDP in the case of PP unit root test was stationary at level and are thus characterized as I (0) process.

This mixture of I (1) and I (0) processes justified the used of ARDL model in this research to check the cointegration due to its advantage over other estimators. As one of the requirements for using ARDL model is that, some variables should be I (0) while other variables should be I (1) and none of the variable should be I (2). Since the variables found to have characteristic of both I (0) and I (1), the next step of the study estimates the short-run and long-run elasticity based on the optimal lag model ARDL (2,2,0,0) selected using the Akaike information criterion shown in figure 1.

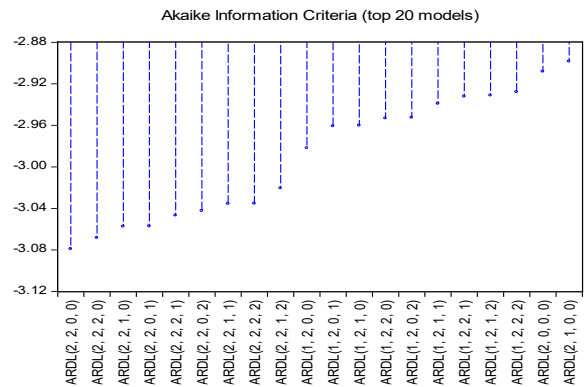


Figure 1: Model selection using Akaike Information Criterion

Source: Source: Author's Computation, 2023 using E-views 10.

ARDL Co-integration Analysis

After selecting the optimal lag model to be used in the ARDL regression analysis, this research examines the co-integration among the variables using the ARDL bounds test based on the null hypothesis of no long-run relationship. Evidence from Table 3 shows that the F-statistic value (12.87 > I1 Bound) lies above the upper bound critical values at 10%, 5%, 2.5%, and 1%, rejecting the null hypothesis of no long run relationship exist at 1% level of significance and concluded that, the variables under study are co integration in the long run.

Table 3 ARDL Bounds Test

F-statistic	Significance	I0 Bound	I1 Bound	Null Hypotheses
12.8698				No long - run relationship
6	10%	2.72	3.77	p
	5%	3.23	4.35	
	2.5%	3.69	4.89	
	1%*	4.29	5.61	

Note: *Denotes rejection of the null hypothesis at 1% significance level

Source: Source: Author's Computation, 2023 using E-views 10

Since the variables are cointegrated, the study estimated the short run and long run elasticity, which is shown in table 4. The result indicates that the speed of adjustment [CointEq(-1) = -0.77 with P- Value = 0.0000] is negative and statistically significant at 1%, confirming the expected equilibrium process in the short run dynamics among the variables under study.

Table 4 presents both the short run and long run dynamic of the ARDL model. The result reveals that in the short run only the Money supply is statistically significance at 1% level and have a positive impact on economic growth in Nigeria, In the case of Monetary policy rate (MPR), it is positive but statistically insignificant, while exchange rate (EXCR), it is negative and statistically insignificant in influencing economic growth in Nigeria in the short run.

In the long run also the results reveal that Money Supply (MS) is statistically significance at 1% level and has a positive impact on economic growth in Nigeria, while Monetary policy rate (MPR) and exchange rate (EXCR) are statistically significance at 1% and 1% level and have a negative impact on economic growth in Nigeria.

Table 4 ARDL Cointegration Result

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LMS)	0.3021	0.0903	3.34370	0.0012
D(MPR)	0.0064	0.0048	1.33046	0.1871
D(EXCR)	0.0002	0.0004	0.46853	0.6406
C	4.9702	0.6782	7.32821	0.0000
CointEq(-1)	-0.7682	0.1051	-7.30763	0.0000
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LMS	0.3271	0.0124	26.2285	0.0000
MPR	0.0099	0.0032	3.05767	0.0030
EXCR	-0.0004	0.0001	-3.16099	0.0022

MPR	04	39	3	*
EXCR	0.0004	26	7	*

indicates statistically significance at 1% and 5% level

Source: Source: Author's Computation, 2023 using E-views 10

Granger Causality Test

To examine the causal direction among the variables under study, the granger causality test was employed. Empirical results in table 5 reveal that there is bidirectional causality between money supply and economic growth in Nigeria, while there is unidirectional causality between monetary policy rate (MPR) and economic growth, exchange rate (EXCR) and economic growth, running from MPR to economic growth and EXCR to economic growth in Nigeria respectively.

Table 5 Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LMS does not Granger Cause LR GDP	88	4.06400	0.0048*
LR GDP does not Granger Cause LMS		3.03417	0.0221**
MPR does not Granger Cause LR GDP	88	4.33570	0.0032*
LR GDP does not Granger Cause MPR		0.12391	0.9735
EXCR does not Granger Cause LR GDP	88	3.50234	0.0110**
LR GDP does not Granger Cause EXCR		1.64342	0.1716

*&** indicate statistically significance at 1% and 5% level of significance respectively

Source: Author's Computation, 2023 using E-views 10

Diagnostic Checks

To determine the appropriateness and adequacy of ARDL model, the study conducts some robust diagnostic tests; this includes serial correlation test, heteroscedasticity test, misspecification of the model test as well as normality tests and parameter stability tests.

After estimated the ARDL regression, the next step is to determine the appropriateness of ARDL model, the study conducts some diagnostic tests (e.g., serial correlation, heteroscedasticity and normality tests) and parameter stability test in order to examines the “independence” of the residuals in the ARDL model by employing the “Harvey Heteroskedasticity Test” to test for Heteroskedasticity problems, the “Breusch–Godfrey Serial Correlation LM Test” to test for multicollinearity or serial correlation, the “Ramsey Test” to test for equation misspecification and the “Jarque–Bera Test” to test for normality of the variables.

Evidence from Table 6 reveals that the residuals in ARDL model have no Heteroskedasticity problems, exhibits no serial correlation, no misspecification (i.e. in its functional form), and are normally distributed. These tests show in table 6 and figure 2 below.

Table 6 Post Estimation Test

Diagnosics Check	F-STATI	Pr ob.	Null Hypothes es
Heteroskedasticity Test: Breusch-Pagan-Godfrey	1.7697	0.123	No Heteroskedasticity
Breusch-Godfrey Serial Correlation LM Test	1.2534	0.266	No Serial correlation
Ramsey RESET Specification Test	1.1922	0.278	No misspecification on error

Source: Source: Author’s Computation, 2023 using E-views 10

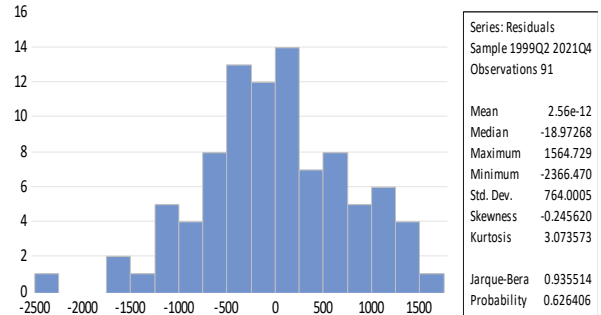


Figure 2 Normality Test

Source: Source: Author’s Computation, 2023 using E-views 10.

Stability Checks

In order to check the stability and adequacy of the ARDL approach, the research analyses the reliability of the cointegration by using Cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) Tests.

As mentioned in the methodology the cumulative sum (CUSUMSQ) test is used to test the randomness of a sequence of zeros and ones (Data plot to convert a data set with exactly two distinct values to a sequence of zeros and ones).

For this test the zeros to negative ones. The test is based on the maximum distance from zero of a random walk defined by the cumulative sum of the sequence. A large enough distance is indicative of non-randomness while cumulative sum of squares (CUSUMSQ) tests is based on the recursive regression residuals

Result from Figure 3 reveals that, both CUSUM and CUSUM of squares are within the 5% significance level; thus, ARDL model is robust and stable and adequate in its form.

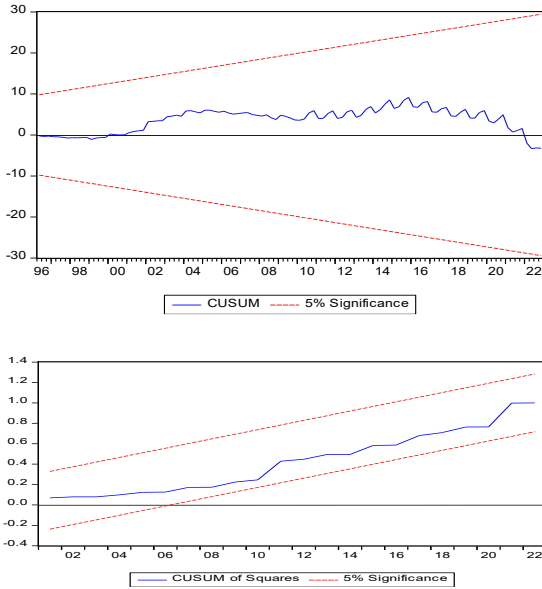


Figure 3 Stability Checks

Source: Source: Author's Computation, 2023 using E-views 10

V. CONCLUSION

This research examines the impact of money supply on economic growth in Nigeria using quarterly data from 1999Q1 to 2021Q4. Based on the findings of the study, showed that, both in the short run and long run, Money Supply has a positive impact on economic growth in Nigeria, while Monetary policy rate (MPR) and exchange rate (EXCR) are statistically significance at 1% level and have a negative impact on economic growth in Nigeria in the long run. Based on that the study concludes that money supply is the major determinant of economic growth among the variables under study both in the short run and long run in Nigeria. This means any increase in money supply in Nigeria may lead to increase in economic growth and vice versa.

RECOMMENDATIONS

Several policy lessons can be drawn from the findings of this study. Fundamentally, there is the need for policy intervention in terms of Nigeria government and other stakeholders in the countries in the following area:

The empirical findings of this study show that money supply has a positive impact on economic growth in

Nigeria; therefore, government should take necessary policies that will make sure adequate money in the economy by using both monetary and fiscal policies in the country as it observed from finding that any increase in money supply is associated with increase in economic growth.

Government should also reduce the level of monetary policy rate (MPR) as it has a negative effect on economic growth in Nigeria which in turn will increase money supply in the country.

Government should take necessary action in terms of its exchange rate policy by taking measure to curtail devaluation of Naira against foreign currency in the country as the devaluation of our currency has significant negative effect on economic growth in the long run.

REFERENCES

- [1] Ahuja, H. L (2010). Macroeconomic (Theory and Policy) Sixteen Revised Edition S. Chand Company Ltd, 7361, Ram Nagar, New Delhi.
- [2] Aslam, A. L. M. (2016). Impact of money supply on Sri Lankan economy: An econometric analysis. *International Letters of Social and Humanistic Sciences*, 67, 11-17.
- [3] CBN (2021) Central Bank of Nigeria Statistical Bulletin, Vol. 32
- [4] Chaitipa, P., Chokethaworna, K , Chaiboonsrib, C and Khounkhalaxc, M. (2015). Money Supply Influencing on Economic Growth-wide Phenomena of AEC Open Region. *International Conference on Applied Economics*. 24: 108 – 115.
- [5] Chude, N. P., & Chude, D. I. (2016). Impact of broad money supply on Nigerian economic growth. *IIARD International Journal of Banking and Finance Research*, 2(1), 46-52.
- [6] Chude, N. P., and Chude, D. I. (2016). Impact of Broad Money Supply on Nigerian Economic Growth. *IIARD International Journal of Banking and Finance Research*, 2(1):46.
- [7] Das, S. (2003). Modelling money, price and output in India: a vector autoregressive and

- moving average (VARMA) approach. *Applied Economics*, 35(10), 1219-1
- [8] Dickey D., Fuller W. (1979). – « Distribution of the Estimator for Autoregressive Time series with a Unit Root », *Journal of the American Statistical Association*, 74, pp. 427-431.
- [9] Ehigiamusoe, U. K. (2013). The Link between Money Market and Economic Growth in Nigeria: Vector Error Correction Model Approach. *International Journal of Economics and Management Engineering*, 7(12): 3076.
- [10] Galadima, M. D., & Ngada, M. H. (2017). Impact of money supply on economic growth in Nigeria (1981–2015). *Dutse Journal of economics and development studies*, 3(1), 133-144.
- [11] Gatawa, N. M., Abdulgafar, A., & Olarinde, M. O. (2017). Impact of money supply and inflation on economic growth in Nigeria (1973-2013). *IOSR Journal of Economics and Finance (IOSR-JEF)*, 8(3), 26-37.
- [12] Hussain, M. E., & Haque, M. (2017). Empirical analysis of the relationship between money supply and per capita GDP growth rate in Bangladesh. *Journal of Advances in Economics and Finance*, 2(1), 54-66.
- [13] Ihsan, I., & Anjum, S. (2013). Impact of money supply (M2) on GDP of Pakistan. *Global Journal of Management and Business Research*, 13(C6), 1-8.
- [14] Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration--with applications to the demand for money. *Oxford Bulletin of Economics and statistics*, 52(2), 169-210.
- [15] Kasimovskaya, E., & Didenko, M. (2013). International Competitiveness and Sustainable Development: are they apart, are they together? A quantitative approach. *SBS Journal of Applied Business Research (SBS-JABR)*, 2, 37-51.
- [16] Maitra, B. (2011). Anticipated money, unanticipated money and output variations in Singapore. *Journal of Quantitative Economics*, 9(1), 118-133.
- [17] Muhammad, S. D., Wasti, S. K. A., Hussain, A., & Lal, I. (2009). An empirical investigation between money supply government expenditure, output & prices: The Pakistan evidence. *European Journal of Economics, Finance and Administrative Sciences*, (17), 60.
- [18] Nouri, M., & Samimi, A. J. (2011). The impact of monetary policy on economic growth in Iran. *Middle-East Journal of Scientific Research*, 9(6), 740-743.
- [19] Ogunmuyiwa, M. S., & Ekone, A. F. (2010). Money supply-economic growth nexus in Nigeria. *Journal of Social Sciences*, 22(3), 199-204.
- [20] Okafor, P. N. (2009). Monetary policy framework in Nigeria: Issues and challenges. *CBN Economic and Financial Review*, 33(2).
- [21] Owolabi, A. U. (2014). Money Supply, Foreign Exchange Regimes and Economic Growth in Nigeria. *Research Journal of Finance and Accounting*, 5(8), 121-129. 225.
- [22] Pesaran, M. H., & Shin, Y. (1995). An autoregressive distributed lag modelling approach to cointegration analysis (Vol. 9514). Cambridge, UK: Department of Applied Economics, University of Cambridge.
- [23] Pesaran, M. H., Shin, Y., & Smith, R. J. (1996). Testing for the 'Existence of a Long-run Relationship' (No. 9622). Faculty of Economics, University of Cambridge.
- [24] Phillips, P. C. B. and Perron, P. 1988. Testing for a unit root in time series regression. *Biometrika*, 75: 335–346. [Crossref], [Web of Science ®], [Google Scholar]
- [25] Stock, J. H. (1994). Unit roots, structural breaks and trends. *Handbook of econometrics*, 4, 2739-2841.
- [26] Tsay, A. A. (2001). Managing retail channel overstock: Markdown money and return policies. *Journal of retailing*, 77(4), 457-492.
- [27] Uchendu, O. A. (2009). Monetary policy in Nigeria. *CBN Economic and Financial Review*, 33(2), 11-18.
- [28] Uduakobong, I. (2014). Money Supply and Economic Growth in Nigeria: An Econometric

Analysis. *Journal of Economics and Sustainable Development*, 5(12), 149-155.

- [29] Zapodeanu, D., & Cociuba, M. I. (2010). Linking money supply with the gross domestic product in Romania. *Annales Universitatis Apulensis: Series Oeconomica*, 12(1), 501.