Monetary Policy Performance and Economic Growth: An Empirical Evidence for WAMZ Member Countries

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Abstract

This study examines the effect of monetary policy on economic growth of West African Monetary Zone (WAMZ) countries from 2002 - 2022. In the model, money supply (M2), interest rate (INTR), and inflation rate (INFR) are considered the independent variable while real gross domestic product (RGDP) is given as the dependent variable. This study used Ordinary Least Square (OLS) and Panel regression analysis, and finding indicate that money supply and interest rate have positive and statistically significant impact on economic growth among WAMZ member countries. The inflation rate has negative and significant impact on GDP. The random effect model on the other hand reveals that money supply is positive and statistically significant on GDP. Similarly, the effect of interest rate is positive but statistically insignificant on economic growth. However, the impact of inflation rate is negative but statistically significant on economic growth of the WAMZ member countries. Therefore, the study recommends the implementation of sound monetary policies such as expansionary Open Market Operation (to increase money supply as increase in money supply increases economic growth), adjust the contractionary discount rate (by reducing the rate of interest rate in order to expand liquidity and investment). The study also recommended that WAMZ country's banks should be committed to the mission of price stability, as well as improving the regulatory and supervisory framework to secure a strong financial sector for efficient intermediation, economic growth and development.

Keywords: Monetary Policy, WAMZ, Economic Growth

JEL Classification: O23, N1

1. Introduction

Monetary policy is known to be a vital instrument that a country can deploy for the maintenance of domestic price and exchange rate variability during a critical condition for the achievement of sustainable economic growth and development (Amasomma, Nwosa, & Olaiya, 2011). Central Banks in developing economies are saddled with the responsibility of formulating and implementing monetary policies as a prominent earning asset for investors and source of balancing liquidity in the economy (Ndiyo & Udah, 2003; Mesagan, Alimi, & Yusuf, 2018). For West African economies, there was formal establishment of the West African Monetary Zone (WAMZ) in 2000 which comprises the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone. WAMZ was expected to propel the creation of a monetary union alongside a common central bank and a single currency for the six member countries. The proposed monetary union failed to commence after some few attempts, the last of which was in 2015. The first phase of the plan was the launching of a single currency to be known as 'eco' by members of the West African Monetary Zone (WAMZ) while the second phase was the merger of the WAMZ with the West African Economic and Monetary Union (WAEMU) to evolve a single currency for the whole of ECOWAS member states by January 2020 (Mogaji, 2017). As the decision to form a second monetary union in the ECOWAS sub-region gains momentum, its feasibility and sustainability remain bleak in the minds of policy makers and economists. The primary objective of WAMZ member countries is to ensure price stability at all levels through inflation targeting (IT) for effective economic growth. Price stability occurs when there is an absence of large swings in the general level of prices in the economy. Maintaining price stability entails avoiding lengthy phase of inflation or deflation that are too high, which contributes to high employment, and moderate long-term interest rates.

Stanley F. (1996) noted that, Central bank charters and official statements typically specify price stability as the goal of monetary policy. There is a subtle but important difference between specifying an inflation target and price stability. The growing popularity of inflation targeting (IT) resides on its efficiency in providing short run flexibility for the central banks without undermining its medium-term anti-inflationary credibility thus, becoming an appropriate institutional framework for monetary policy, (Hofman et al., 2020). Inflation targeting also correlates with better macroeconomic performance than the alternative monetary policy frameworks while it plays an important role in preventing monetary authorities from exhibiting pro-inflationary and pro-cyclical biases as exhibited in many countries, particularly the developing economies (Rogers, 2006; Montiel, 2013). The IT framework sets the numerical target for inflation over a specified time horizon and makes effective communication to the public thereby improving the transparency and credibility of monetary authorities.

Central banks across the world adopt IT framework through an open commitment of maintaining price stability as the overriding objective of monetary policy. However, the Authority of Heads of States of WAMZ at its 2019 Statutory Meeting in Abuja proposed and adopted a flexible exchange rate regime along with a monetary policy framework that focused on inflation targeting for the single currency and West African Central Bank programme. Olorunsola, Maimuna, Ibrahima, Hissan, Dauda & Eric, (2021) noted that, the efforts of member countries of the West African Monetary Zone (WAMZ) to move their economies in order to facilitate monetary union has been unrelenting. Most of the countries of West Africa are endowed with mineral, agricultural and hydroelectric resources. There is crude oil in Nigeria, Gold in Ghana, Copper in Liberia and Diamond in Sierra Leone. These exclude other solid minerals found in large deposits. However, these countries lack financial resources to exploit and mine the minerals which are in large reserves thereby creating a yawning gap between the potentials of the economies and actual growth. This development has led to high incidence of poverty within the zone, as GDP growth rate hovers around 4.0 per cent, with persistent negative real per capita growth during the post COVID-19 pandemic.

The WAMZ economy is characterized by dualistic production systems whereby traditional, informal and parallel markets systems coexist with modern and formal systems. This type of dualism is common in agriculture, industry, financial sectors and external trade activities. The agrarian structure is basically a mixed system of subsistence and modern farming. The gap between the two production systems is immense but subsistence agriculture predominates. The industrial sector is characterized by a large number of informal and small enterprises and a few modern firms. The small scale enterprises are characterized by the production of traditional consumer goods. The sector tends to locate and concentrate its distribution activities in local markets (Emmanuel B. 2009). The economic potentials of the WAMZ are significant to the fundamental changes in the structure of financial system within the region and could take place leading to level playing field, mergers and acquisition as financial institutions reposition for union market. Analysis of the major features of the countries of West African Monetary Zone (WAMZ) indicated that in terms of population, this group of countries account for about 68 per cent of the total population of ECOWAS while land area accounts for 31 per cent. The group also accounts for the bulk of output of the sub-region. Of the total ECOWAS Gross Domestic Product (GDP) valued at US $101,605 million in 2001, countries of the WAMZ accounted for the bulk of the output valued at US $65,180 million or 65 per cent. Sectoral distribution shows that the economies of the Zone are largely service oriented while the labour force is largely dependent on primary commodity production (Olorunsola et al. 2021).

Therefore this study examines the impact of monetary policy on economic growth of WAMZ Member Countries with an aim to analyze the effect of money supply on economic growth, to investigate the effect of interest rate on economic growth and to examine the effects of inflation rate on economic growth of WAMZ member countries. However, this study provides relevant information for monetary authorities, governments, individual firms and private sector in formulating effective policies that help to achieve desired goal of WAMZ through ensuring stability between budgetary formulation and level of inflation in the economies. The study also serves for future references in the literature.

2. Literature Review

Wrightsman (1976), opined that monetary policy entails those actions initiated by the central bank which aim at influencing the cost and availability of credits. Nwankwo (1991), defined monetary policy as one of the central macroeconomic instrument with which monetary authority of a country employed in the management of their economy to attain desired objectives. The Central Bank of Nigeria (CBN, 2015) defined monetary policy as a deliberate action of monetary authorities to influence the quantity, cost and availability of money credit in order to achieve desired macroeconomic objectives of internal and external balances. The action is carried out through changing money supply and or interest rate through monetary instruments (direct and indirect) with the aim of managing the quantity of money in the economy. Dwivedi (2015) defined monetary policy as essentially a program of action undertaken by the monetary authorities, generally the Central Bank to control and regulate the supply of money to the public and the flow of credit with a view to achieving predetermined macroeconomic goals. Abeng (2006) explained that monetary policy is valid only for a highly monetized economy. If the economy is not monetized, the efficacy of monetary policy is restricted. For instance, in an underdeveloped economy where a large proportion of output is produced in a subsistence sector, supply of money would be independent. Monetary policy therefore, would not be a better tool to manage the economy.

Ogbulu and Torbira (2012) define economic growth as a sustained rise in the output of goods, services and employment opportunities with the sole aim of improving the economic and financial welfare of the citizens. Hardwick, Khan and Langmead (1994) have define economic growth as an increase in a country's productive capacity, identifiable by a sustained rise in real national income. Economic growth entails increase in per capita income which leads to the attainment of a high standard of living equivalent to that of industrial countries (Todaro & Smith, 2011; Ughulu & Ajayi, 2020). Godwin and Thomas (1994) explained that economic growth increases in the average rate of output produced per person, usually measured on a per annum basis, and

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adjusted for inflation. It is considered as the rate of change in national output or income in a given period. Economic growth is an essential ingredient for sustainable development. In this study, Economic growth is proxied by GDP and is conceptualized as the monetary value of all goods and services produced in an economy over a specified period usually one year.

Abeng (2006) maintained that, if economy is extremely monetized, then monetary policy is valid for that system. Therefore, the efficacy of monetary policy is invalid and restricted when an economy is not monetized. He noted that, where a large proportion of output is produced in a subsistence sector of an economy and the economy is underdeveloped, then supply of money would be independent. However, monetary policy, therefore, would not be a better manage tool in that economy. Balogun (2007) examines monetary policy and economic performance of West African Monetary Zone Countries (Gambia, Ghana, Guinea, Nigeria and Sierra Leone) from 1991 - 2004 using Vector Autoregressive and Distributed Lag Models and Granger Causality Test as the tools of analyzing the effectiveness of money supply, minimum rediscount rate, banking system credit to private sector, banking system credit to central government and exchange rate on real GDP. The findings of the study indicates that monetary policy variables were a source of stagnation as it hurts real domestic output of WAMZ member countries. Precious and Palesa (2014) examined the impact of monetary policy on economic growth in the South African economy over the period 2000 - 2010. The study employed the Augmented Dickey Fuller (ADF) unit root test, Phillips-Perron (PP) unit root test, Johansen co-integration and the Error Correction Mechanism to ascertain the impact of money supply, repo rate consumer price index and exchange rate on real GDP of South African economy. The findings revealed that money supply and repo rate had a positive and insignificant long run effect on economic growth of South African economy, while consumer price index and exchange rate had positive significant impact on economic growth of South African economy.

Alavinasab (2016) analyses the impact of monetary policy on economic growth in Iran over the period of 1971 - 2011. Multiple regression technique, Augmented Dickey Fuller unit root test, Johansen Cointegration Test and Error Correction Model were used as the tools of analyzing the impact of money supply, interest rate, exchange rate and inflation rate on real GDP. The findings revealed that Money supply (M2) had positive significant impact on economic growth and Variables of exchange rate (EXR) and inflation rate (INF) had negative significant impact on economic growth, while interest rate (IR) had negative but statistically insignificant relationship with economic growth of Iran. In another strand, Njimanted, Akume and Mukete (2016) empirically examined the impact of key monetary variables (money supply, interest rate and inflation rate) on the economic growth (real GDP) of the Central African Economic and

Monetary Community (CEMAC) Zone from the period of 1981 to 2015. The study adopted Vector Autoregressive (VAR) model and Johansen co-integration test as the tools of analysis and revealed that money supply and inflation had negative significant impact, while interest rate had positive significant impact on economic growth of Central African Economic and Community Zone Countries (Gabon, Cameroon, the Central African Republic, Chad, the Republic of Congo, and Equatorial Guinea).

In contrast, Omodero (2019) analyse the effect of money supply on economic growth of Nigeria and Ghana from 2009 to 2018. The study aims at finding the effect of Broad Money Supply (M2 and M3) and Credit to Private Sectors (CPS) on Gross Domestic Product (GDP) using multiple regression technique of OLS. The study reveals that money supply (M2) had positive significant effect on Ghana's Real GDP, while in Nigeria the M2 had negative insignificant effect on Real GDP. M3 had negative significant effect on Ghana's Real GDP, while in case of Nigeria, it had positive insignificant effect on Real GDP and Credit to Private Sectors (CPS) had positive insignificant effect on Real GDP of both Nigeria and Ghana. Moreover, Iheanacho (2019) analyses the dynamic relationship between monetary policy on economic growth in Nigeria covering the period between 1986 and 2017. The study used multiple regression analysis, Augmented Dickey Fuller (ADF) unit root test, Johansen Co-Integration Test, Unrestricted Co-Integration Rank Test, Granger Casualty Test and Vector Error Correction Model (VECM) to investigate the relationship between Broad money supply (BMS), Cash reserves ratio (CRR), Monetary policy rate (MPR), Liquidity ratio (LQR) on real GDP. The Findings reveal that cash reserve ratio and broad money supply had negative significant long run relationship with GDP, while monetary policy rate and liquidity ratio had positive significant long run relationship with GDP. In the short run cash reserve ratio and monetary policy rate had an inverse relationship with GDP at lag while liquidity ratio had positive relationship with GDP.

Mesagan and Yusuf (2019) examined the impact of monetary and fiscal policy on economic performance and stabilization in some selected West African Monetary Zone (WAMZ) Countries (Gambia, Ghana and Nigeria) between 1980 and 2017. Base on the impact of monetary policy on economic performance and stabilization in Gambia, Ghana and Nigeria, the study employed Fully Modified Ordinary Least Square (FMOLS), Augmented Dickey Fuller (ADF) unit root test and Johansen-juleus cointegration test to find the impact of broad money supply, deficit finance, monetary policy rate and commercial banks credit to private sector on Gross Domestic Product (GDP). The study reveals that deficit finance had a negative significant effect on Real GDP in Nigeria and Ghana, while the Gambia's deficit finance had a positive significant effect on Real GDP. Broad money supply, credit to private sectors and monetary policy rate had positive insignificant effect on economic growth of Gambia

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and Nigeria, and in the case of Ghana's economic growth, the variables had positive significant effect.

Mpuure and Abille (2020) examined the effect of monetary policy on economic growth in Ghana. The study was conducted based on yearly data from 1983 to 2019 to ascertain the effect of money supply, lending rate and inflation rate on Gross Domestic Product using Auto Regressive Distributed Lag Model (ARDL), Augmented Dicky Fuller (ADF) unit root test and Error Correction Model (ECM). The study reveals that money supply had a positive significant effect on growth in the long run, and also had positive insignificant effect on growth in the short run. Lending rate had negative insignificant long run correlation with real GDP growth and inflation rate had negative significant effect on economic growth in Ghana. Similarly, Tarawalie and Kargbo (2020) investigates the relative effectiveness of fiscal and monetary policies on economic growth in Sierra Leone. The study utilized annual time series data spanning from 1980 to 2017 using Auto Regressive Distributed Lag (ARDL) Model, unit root test and Error Correction Model as tools of analysis in ascertaining the effects of money supply, real exchange rate and inflation on real GDP. Based on the empirical examination of the relative effectiveness of monetary policy and economic growth in the country, the findings showed that money supply had positive significant effect on Sierra Leone's economic growth, while real exchange rate and inflation rate had negative significant effects on real GDP of Sierra Leone.

This study is based on IS-LM model developed by John Hicks in 1936 based on Keynesian and neo classical theories. The IS-LM model is a tool for looking at how the market for economic goods intersects with the loanable funds market. It depicts the short-term equilibrium point between interest rates and output, with its three variables being liquidity, investment, and consumption. In the IS-LM diagram, a horizontal segment of the LM curve happens at a certain minimum interest rate. Consequently, Keynesians maintained that, monetary policy is ineffective for influencing economic growth and changes in the level of output without changes in the IS curve. On the contrary, Monetarists opined that, LM curve is downward sloping as opposed to the horizontal LM curve and maintained that changes in the level of output can only be achieved by changes in the LM curve. The Keynesian transmission mechanism consisting of three stages is called the cost of capital channel and is summarized thus: Money → Interest Rate → Investment → Income; in which an increase in the money supply, interest rate falls and investment and income rise. The rise in price level raises nominal income that leads to an increase in the transactions and precautionary demand for money, there by bringing a "feedback effect" on the economy. Given the monetarists equation of exchange proposed by Irvin Fisher (1911) we have;

MV = PY…………………………….………………………………………. 1

Whereby, M = Total quantity of money, P = Price level, V = Velocity of money and Y = Aggregate income for the economy. Monetarists assume that velocity is constant, and when V is constant, equation (1) indicates a one-to-one relationship between changes in the money supply and changes in the value of national income.

3. Methodology

The study employs Ordinary Least Square (OLS) method for multiple regression analysis as adopted by Alavinasab (2016), Mesagan and Yusuf (2019) and Omodero (2019) in order to examine the effect of monetary policy on economic growth of WAMZ member countries. In the model, money supply (M2), interest rate (INTR), and inflation rate (INFR) were taken as the independent variable while real gross domestic product (RGDP) was taken as the dependent variable. The study utilizes panel data of monetary policy variables and real GDP which were obtained from the central Banks of WAMZ member countries statistical bulletin (2020 and 2022), World Development Indicator (WDI) of the World Bank (2022) and IMF's International Financial Statistics (IFS) (2022). The panel data used covered the period of 20 years ranging from 2002 to 2022. The study uses annual secondary data from 2002 - 2022 for the six (6) WAMZ member countries. The study applied non-probability sampling technique to select the countries for the study.

The dependent and independents variables for the study were measured as follows; Real GDP **is** Real growth domestic product (RGDP) has been used in this study as a dependent variable to measure the economic growth of WAMZ member countries following the work of Mesagan and Yusuf (2019) and Balogun (2007). Money supply is the Broad money supply (M2) is an independent variable used in this study to measure its impact on the economic growth of WAMZ member countries following the work of Mpuure and Abille (2020) and Inam and Ime (2017). Interest rate (INTR) is an explanatory variable(independent variable) used in this study to measure its impact on the economic growth of WAMZ member countries following the work of Etale & Oweibi (2019) and Onwuteaka, Okoye and Molokwu (2019). Inflation rate (INFR) been an independent monetary policy variable, has been used in this study to measure its impact on the economic growth of WAMZ member countries following the work of Njimanted, Akume and Mukete (2016) and Tarawalie and Kargbo (2020).

The study conducts Descriptive statistics and Correlation matrix at the first and second stage of the analysis. Fixed effect test was conducted at the third stage of the analysis. Random effect test was carried out at the fourth stage of the analysis. Furthermore, the study employed Hausman test (Durbin-Wu-Hausman test) at the last stage of data

analysis. Considering the empirical modification from the work of Olushola and Uzoma, (2018), the study adopts the following equations to achieve its objectives;

$\Delta Y_t = \alpha Y_{t-1} + X + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \ldots + \beta_P \Delta Y_{t-P} + \varepsilon_t$ ……………………..……………... 2

Therefore, the dependent variable (RGDP) and the independent variables *(*M2, INTR and INFR) follows in equation (3) as;

$RGDP = f(M2, INTR, INFR)$…………………………………………………….. 3

Putting equation (ii) into equation (i) we have;

$RGDP = \lambda + \lambda M2_{it} + \lambda_2 INTR_{it} + \lambda_3 INFR_{it} + \mu_{it}$.. 4

The log and operational form of the equation 3.2.2 is stated thus:

$LogRGDP_{it} = \lambda_0 + \lambda_1 LogM2_{it} + \lambda_2 LogINTR_{it} + \lambda_3 LogINFR_{it} + \mu_{it}$…………………..… 5

Where RGDP = real gross domestic product, INTR = interest rate, M2 = broad money supply and INFR = inflation rate. $\lambda_1, \lambda_2, \lambda_3$ = vectors of the coefficients of the first difference lagged values of the variables. λ_0 = the constant parameter, μ = error term, i = cross – section,, t = time period and μ = error term. The priori expectation: $\lambda 1 > 0$; $\lambda 2$, $\lambda 3 < 0$

4. Result

Table 1 Results of Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
LRGDP	119	26.03	3.45	20.43	32.22
LMS	116	25.23	4.07	17.69	31.04
INFL	103	11.45	6.35	0.84	34.70
INTR	98	18.11	7.07	5.69	36.5126

Source: Author's Computation

From Table 1 above, the result of average real GDP is 26.02567 ($' Billion), with minimum and maximum values of 20.43291 and 32.21891 ($' Billion) respectively. Similarly, it presented the average or mean value of money supply, inflation and interest rate. The values are 25.23151, 11.44519 & 18.11419 ($' Billion). The standard deviation from the series shows that the series are a little bit far from the averages. Inflation rate being far from the average, it showed a low level of volatility from the mean.

Table 2: Results of Correlation Matrix

VARIABLE	LRGDP	LMS	INFL	INTR
LRGDP	1.00			
LMS	0.87	1.00		
INFL	-0.09	0.00	1.00	
INTR	-0.02	-0.30	-0.18	1.00

Source: Author's Computation

The result of correlation matrix is presented in Table 2 and it revealed positive correlation between real GDP and money supply. However, the correlation reveals negative correlation between inflation rate, interest rate and economic growth as *a priorly* expected. Similarly, the relationship between money supply and interest rate is negative but positive with inflation rate.

Table 3 Results of Fixed-Effects Model

Variable	Coefficient	Standard Error	t-statistics	P-value
LMS	0.62***	0.02	26.70	0.000
INFL	-0.01**	0.01	-2.60	0.011
INTR	0.01**	0.01	1.38	0.173
C	9.61***	0.64	15.05	0.000
R^2	0.77			
F-statistics	324.66(0.0000)			

*Note; ***, **, and * indicate level of significance at 1%, 5%, and 10%, respectively.*
Source: Author's Computation

The results of fixed effect models are presented in Table 3 above. The results reveal that the coefficients of money supply and interest rate have positive and statistically significant impact on economic growth. This implies that a 1% increase in money supply and interest rate will stimulate economic growth by 0.62% and 0.01%, respectively. However, the coefficient of inflation rate has a negative and significant impact on economic growth. Thus a 5% increase in inflation rate will decrease economic growth by 0.01%.

The result of the random effect model is presented in Table 4 above. It reveals that money supply has positive and statistically significant effect on economic growth. Thus a 1% increase in money supply will stimulates economic growth by 0.62%. Similarly, interest rate has positive but statistically insignificant effect with economic growth. However, the coefficient of inflation rate has negative and statistically significant impact on economic growth. This implies that a 1% increase in inflation rate will reduce economic growth by 0.01%.

Table 4 Results of Random-Effect Model

Variable	Coefficient	Standard Error	Z-statistics	P-value
LMS	0.620***	0.02	27.22	0.00
INFL	-0.01***	0.01	-2.66	0.01
INTR	0.11**	0.01	1.44	0.15
C	9.81***	1.30	7.55	0.00
R^2	0.77			
Wald Chi^2	1009.68 (0.0000)			

Source: Author's Computation

To choose the most preferred model between fixed effect and random effect models, the Hausman test was employed and result is been presented in Table 5 above. The results reveal that the most preferred model is random effect based on the chi-square test of the Hausman test.

Table 5: Results of Hausman Fixed-Random Effects Model

| | Coefficients | | | |
| | (b) | (B) | (b – B) | (Vb – VB) |
	Fe	Re	Difference	SE
LMS	0.62	0.62	-0.00	0.00
INFL	-0.01	-0.01	0.00	0.00
INTR	0.01	0.01	-0.00	0.00
Wald Chi^2	0.04(0.9977)			

Source: Author's Computation

However, from the empirical results of the impact of monetary policy on economic growth of WAMZ member countries from 1999 - 2018, the results show that the coefficients of money supply and interest rate have positive and statistically significant impact on economic growth of WAMZ member countries. However, the results also reveal that inflation rate has negative and significant impact on economic growth of WAMZ member countries. The results imply that a 1% increase in money supply and interest rate will stimulate economic growth by 0.62% and 0.01%, respectively. The coefficient of inflation rate has negative and significant impact on economic growth. Thus a 5% increase in inflation rate will decrease economic growth by 0.01%. This result is in-line with that of Alavinasab (2016) who found that money supply had positive significant impact on growth while inflation rate had negative significant impact on growth. So also, Tarawalie and Kargbo (2020) revealed that money supply had positive significant effect on Sierra Leone's economic growth, while inflation rate had negative significant effect on real GDP of Sierra Leone.

The result of the Random effect model reveals that money supply has positive and statistically significant effect on economic growth. Thus a 1% increase in money supply will stimulates economic growth by 0.62%. Similarly, interest rate has positive but statistically insignificant effect on economic growth. However, the coefficient of inflation rate has negative and statistically significant impact on economic growth. This implies that a 1% increase in inflation rate will reduce economic growth by 0.01%. This result of Random effect model is consistent with the findings of Mpuure and Abille (2020), their findings showed that money supply had positive significant impact on growth, but inflation rate had negative significant impact on growth in Ghana. The findings of Inam and Ime (2017) is almost consistent with this study, their findings revealed that interest rate and inflation rate had negative insignificant impact on

economic growth, while money supply had positive insignificant impact on economic growth of Nigeria.

Finally, based on the chi-square test of the Hausman test, the results revealed that the most preferred model is random effect model. This is because the Wald chi-square is not significant, therefore the preferred model is Random effect model. Hence, the random fixed model shows that an increase in money supply increases economic growth whereas a decrease in inflation rate signifies an important impact in increasing economic growth, interest rate on the other hand reveals insignificant impact on economic growth of WAMZ member countries.

5. Conclusion and Recommendations

This study aims at examining the relationship between money supply, interest rate, inflation rate and economic growth in WAMZ member countries for the period of 22 years starting from 2000 – 2021. The study employs fixed effect model, random effect model and hausman test for the analysis and interpretation of the parameters. The fixed effect results indicate that money supply and interest rate have positive and statistically significant impact on economic growth. Inflation rate shows negative but significant impact on economic growth. Random effect model on the other hand reveals that money supply has positive and statistically significant effect on economic growth. Similarly, interest rate has positive but statistically insignificant effect with economic growth. However, inflation rate has negative but statistically significant impact on economic growth. Moreover, based on the chi-square test of the Hausman test, the results reveal that the most preferred model is random effect model, given the value of Wald chi-square.

Based on the study's findings, the following recommendations are vital and necessary for economic growth and development of WAMZ member countries. This study recommend the implementation of expansionary Open Market Operation (OMO) as a market weapon to transmit its positive effect in increasing the level of real GDP growth among WAMZ member countries. On interest rate, this study suggests that the governments should also grant the central banks of their countries the autonomy to implement discount rate policy by reducing the bank rate. This, in turn reduces the interest rates charged by the commercial banks, thus resulting low cost of borrowing and hence expansion in liquidity and investment. Finally on inflation, the study noted that rising inflation adversely affects economic growth and hence distorts the price system in WAMZ economies. Therefore, the study recommends that WAMZ country's banks should be committed to the mission of price stability, as well as improving the regulatory and supervisory framework to secure a strong financial sector for efficient intermediation.

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