MACROECONOMIC POLICIES AND INCLUSIVE GROWTH IN NIGERIA

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Abstract

The achievement of impressive growth without a reduction in poverty, inequality and unemployment resonate the inclusive growth debates. This study contributes to this debate by investigating the impact of macroeconomic policies on inclusive growth in Nigeria. The composite inclusive growth index for Nigeria was developed using twelve indicators and then an empirical analysis was conducted to examine how fiscal and monetary policies impacted on inclusive growth. Error correction mechanism and autoregressive distributed lag model were used to estimate fiscal and monetary policies model respectively given the order of integration. The results showed that monetary policy is relevant in enhancing inclusive growth while fiscal policy decreases inclusive growth in Nigeria. By and large, all the equations were relevant in explaining the dynamics of inclusive growth in Nigeria due to their relatively high explanatory power of about 53 per cent for fiscal policy equation, 65 per cent for monetary policy equation. Fiscal and monetary policies exhibited slow speeds of adjustment of 27.62 per cent and 25.89 per cent, respectively. The paper recommends that government should ensure her deficits financing expenditure are channelled towards growth stimulating sectors of the economy so as to create economic opportunities.

Keywords: Macroeconomic policies, Monetary Policy, Fiscal Policy, Inclusive Growth

JEL CODES: E6, E52, E62

1.1 INTRODUCTION

The renewed interest in inclusive economic growth is fuelled by the recent growth experiences in Nigeria. Available statistics between 2000 and 2013 in Nigeria indicated commendable economic (gross domestic product) growth rate for more than a decade. This did not ameliorate the levels of poverty, income inequality and unemployment during the period. The GDP growth rate was -6.0 per cent in the early 1980s and 7.6 per cent in 2013. Averaging 6.3 per cent between 2005 and 2015 (NBS, 2016). The rebasing of the country's GDP in 2014 made Nigeria the largest economy in Africa. Unfortunately, this impressive growth rates did not translate into inclusive growth in terms of increased employment opportunities, reduction in poverty and income inequality. But rather, unemployment and income inequality increased to 23.1 per cent and 3.4 per cent in 2018 respectively (NBS, 2018). In recognition of the severity of these challenges, the different regimes of government in Nigeria initiated macroeconomic programmes such as; Poverty Alleviation Programme (PAP) in President Obasanjo regime (1999-2015), the Transformation agenda (2007-2010) with emphasis on employment generation and poverty reduction by President Yar'Adua. The latter programme was further expanded to include You-Win programme, the building of Almajiri schools in the Northern

part of the country, the SURE-P and School feeding by President Jonathan's regime (2010-2015) and the recently implemented Economic Recovery and Growth Plan (ERGP, 2016) by the administration of President Buhari in an attempt to make growth more inclusive within the periods of 2017-2020. Unfortunately, these macroeconomic policies that are driven basically by either fiscal or monetary policies (or both) have not yielded the desired results. Therefore, the unanswered questions remain; (i) what exactly constitutes inclusive growth? (ii) What is the impact of macroeconomic policies on inclusive growth in Nigeria? Hence, the objective of the paper is to development an index of inclusive growth for Nigeria, and then, investigates the impact of fiscal and monetary policies on inclusive growth in Nigeria.

2.1 REVIEW OF LITERATURE

2.1.1 The concept of inclusive growth

Inclusive growth has been defined by different individuals and organizations. For instance, (Ali and Son, 2007) defined it as growth process that enhances the social opportunity function which depends upon the average opportunities available to the population and how these opportunities are shared among the population. In a similar vein, Mckinley (2010) identifies inclusive growth to entail achieving sustainable growth that will create and expand economic opportunities and ensure broader access to these opportunities so that members of society can participate in and benefit from growth. Also, (World Bank, 2012) defines inclusive growth by its pace and pattern and it is the growth that is sufficient to lift large numbers out of poverty and growth that includes the largest part of the country's labour force in the economy. The definitions of United Nation Development Programme (UNDP, 2011) and the Asian Development Bank (ADB, 2013) all points to the facts that for growth to be inclusive, it must create opportunities (i.e. reduce unemployment) and reduce poverty. Therefore, inclusive growth in this paper is seen as growth that results in increased economic opportunities for a greater percentage of the population in terms of employment generation, provision of infrastructural facilities, improvement in human capacities and reduction in poverty, etc.

Four measures of inclusive growth include but not limited to; the social opportunity function method, multidimensional composite index method, Z-sum score method and the dimension analysis method. However, this study adopted Z-sum technique since it allows one to make use of normalize values of the mean and variance difference (Kothari, 1978). For studies in Nigeria that generated inclusive growth index, like Udah and Ebi (2016), the indicators identified by McKinley (2010) were used in generating the index while others (Oluseye ad Gabriel, 2017; Azizi, Yazdani, Aref and Taleghani, 2011) used proxies but this study adopted and combined indicators identified by Paramasivan, Mani and Utpal, (2014) and McKinley (2010) to make it more encompassing. These indicators include life expectancy at birth, control of corruption, gross domestic product per capita, employment, government effectiveness, government expenditure on education and health, inequality and added other indicators peculiar to the Nigerian economy in generating the index e.g. number of bank branches, credit to SMEs and electricity consumption. Therefore, Paramasivan, et al., (2014) and McKinley (2010) indicators

using Z-sum score technique as used by Kiani and Ullah (2014) is employed in computing the index of inclusive growth for Nigeria in this study.

2.1.2 Empirical literature on measures of inclusive growth

In an attempt to measure inclusive growth in Slovak Republic, Domonkos, Janosova and Ostrihon (2013) discussed the measure of inclusive growth through the use of abstraction, in that inclusive growth was proxy with pro-poor growth in the study. The study further provided empirical evidence using Slovak Republic and the study concluded that Slovak Republic growth was inclusive within the period 2004 to 2009. This is because the level of income inequality, poverty gap index and severity of poverty index as calculated within this period were on the decrease.

Mckinley (2010) provided a guideline in measuring inclusive growth using strategic framework that covers 2008-2020. The study identified the indicators of inclusive growth to include following; 1) economic growth, productive employment and economic infrastructure 2) address income poverty and general equality 3) human capabilities dimension and 4) social protection dimension. The study maintained that in considering these factors, weight and scoring system are necessary, hence, a weight of 50 per cent is attached to efforts in achieving growth, employment and access to infrastructure, 25 per cent for success in reducing poverty and inequality, 15 per cent for enhancing human capacities e.g. health, education, water and sanitation, and 10 per cent for success in providing basic social protection especially in attempt to eliminate extreme poverty. The study provided a scoring system of 1-3 to mean unsatisfactory progress in inclusive growth, 4-7 as satisfactory efforts and 8-10 as superior efforts in inclusive growth. One major criticism of this measure is the weight system which implicitly involves value judgements as against a scientific measure that is devoid of value judgement.

Paramasivan, et al., (2014) provided a guide and a paradigm shift in the measure of inclusive growth. According to the study, inclusive growth is broad based growth in which the poor do not only benefits from growth but also participate in the process that leads to the growth. The study identifies the drivers of inclusive growth to include; productive employment, reduction in poverty, reduction in inequality, economic growth, human development, socio-economic amenities, governance and gender equity. Therefore, the study concluded that the theoretical framework for inclusive growth model must take these factors in inclusive growth diagnosis.

Khan, Khan, Safdar, Munir and Andleeb (2016) attempted to measure inclusive growth and empirically examine its determinants in Pakistan between 1990 and 2012. The study adopted the Asian Development Bank method of allocating weights and scores to the different indicators and the result revealed that Pakistan is at satisfactory level of inclusive growth. Furthermore, the findings showed that stability in macroeconomic variables and financial deepening are the determinants of inclusive growth as well as reduction of poverty and inequality. However, the study concluded that reforms in the trade sector are one of the prerequisites to increase the level of inclusive growth in Pakistan.

In a similar study, Udah and Ebi (2016) in an attempt to contribute to the development and determination of the level of inclusive growth in Nigeria constructed a time series composite inclusive growth index between 1981 and 2013 using McKinley (2010) method. The findings reveal that the average inclusive growth within the period 1981-2013 stood at 3.67 and the result also show that Nigeria fared better in inclusive growth between 2000-2013, with an average index score of 4.492. The study further maintained that income growth showed tremendous progress but below the threshold and the study concluded that government in Nigeria should lay emphasis on employment generation, provision of adequate economic infrastructure and poverty reduction in order to achieve inclusive growth.

2.1.3 Empirical literature on macroeconomic policies and inclusive growth

Adediran, Mathew, Olopade and Adegboye (2017) investigated the interaction between monetary policy shocks and inclusive growth in Nigeria. The study adopted the Vector Auto-Regressive (VAR) model in their analysis and the findings of the study shows that monetary policy promotes inclusive growth, stabilized inflation and ensure macroeconomic stability. Similarly, Oluseye and Gabriel (2017) provided an empirical analysis of the relationship between inclusive growth and its determinants using annual time series data from 1981 to 2014. Using autoregressive distributed lag model (ARDL) and error correction model, the study investigated the existence of long run relationship amongst the variables adopted in the study. The study found that an inverse relationship exists between government consumption, education expenditure and inclusive growth in Nigeria within the period of analysis. The study further showed that inflation and population growth impacted positively on inclusive growth. Based on the findings, the study recommended that in order to achieve inclusive growth, appropriate steps should be taken to increase the inflow of foreign direct investment.

Azizi, et al., (2011) evaluated the impact of macroeconomic policies on poverty (an indicator of inclusive growth) in Iran. The study assessed the effectiveness of government intervention on poverty through the adoption of a general equilibrium model and the social accounting matrix for the year 2002. The study further revealed that a significant percentage of the households in Iran are living under the poverty line. This implies that macroeconomic policies do not enhance inclusive growth in Iran within the study period.

Abdu, Buba and Alhassan (2018) examined the level of inclusive growth in Nigeria and the relevant of macroeconomic stability in stimulating inclusive growth and development in Nigeria. The study used data that spans 1960-2012 for analysis. In the absence of a generally agreed measure of inclusive growth, an index of inclusive growth was constructed using twenty-three variables which fall under agricultural, economic, education, environmental and health variables while Principal Component Analysis was used for estimation. The Johansen co-integration as well as the vector error correction model was adopted as the technique for analysis. The result indicate that macroeconomic stability had a significant positive effect on inclusive growth as gross domestic product volatility and inflation volatility revealed an inverse relationship between them and inclusive growth. This implies that macroeconomic stability is one of the critical factors required in achieving inclusive growth.

Nwosa (2016) examined the effect of macroeconomic policies on unemployment and poverty rates in Nigeria within 1980 and 2013. The study adopted an Ordinary Least Squares (OLS) technique and the result revealed that exchange rate has a significant positive effect on unemployment while fiscal policy impacted negatively on poverty rate. This signifies that macroeconomic policies in Nigeria do not really guarantee inclusive growth in Nigeria and therefore, the study recommended the re-examination of macroeconomic policies management in Nigeria if inclusive growth must be achieved.

In a related vein, Mobolaji, Ehigiamusoe and Lean (2015) examined the role of fiscal policy in inclusive growth in Nigeria using secondary data between 1980 and 2013. The study employed the OLS method involving granger causality test to ascertain the causal relationship between fiscal deficits and inclusive growth. The findings revealed that fiscal policy exerts a positive and significant impact on inclusive growth. This implies that government expenditures, tax revenue and fiscal deficits can be manipulated to ensure inclusive growth is achieved in Nigeria. This supports the view that macroeconomic tool of fiscal policy can achieve inclusive growth in Nigeria, all things being equal.

Zulfiqar (2018) examined the role of fiscal policy in plummeting poverty and inequality, generating productive employment and attaining broad-based inclusive economic growth for Pakistan using secondary data. However, the influence of government expenditure as well as taxes was examined using Vector Autoregressive (VAR) models. Their elasticity was estimated on the basis of impulse response function result between 1980-2015. The outcome of the analysis showed that fiscal policy is not a significant variable in promoting broad-based inclusive economic growth in Pakistan.

Also, Adeoye, Babsanya and Adedeyi (2018) examined the relationship between money supply (monetary policy variable) and inclusive growth in Nigeria between 1981-2014 using time series data. They adopted the OLS method under the framework of VAR to analyse the linkage between money supply and inclusive growth. The result indicated that exchange rate and money supply have significant impact on growth through unemployment in Nigeria.

The highlighted empirical literature has diverse conclusions concerning the influence of macroeconomic policies on inclusive growth. Some scholars posited that monetary policy is more effective in stimulating inclusive growth (Adeoye, et.al, 2018 and Ezigbo, 2012). Others rooted for fiscal policy as a better instrument for achieving inclusive growth (Mobolaji, et al., (2015). However, few of these studies have attempted to work through a composite measure of inclusive growth (McKinley, 2010; Kiani and Ullah, 2014). However, Udah and Ebi (2016) developed an index of inclusive growth but did not consider the role of macroeconomic policies in achieving inclusive growth in Nigeria, in an attempt to depart from what previous did, Azizi, et al (2011), Nwosa (2016) and Adediran, et al. (2017) made use of selected indicators of inclusive growth such as per capita income, unemployment and poverty as the measures of inclusive growth.

This current paper differs from all these studies on the following grounds. First, this paper attempts to develop an inclusive growth index for Nigeria and then examine how fiscal and

monetary policies impacts on it. Second, the index developed is quite different from those of Udah and Ebi (2016), in that their approach follows the McKinley (2010) method that allocates weights and score to the identified indicators without necessarily following any theoretical assumption in allocating the weights but this paper follows the theoretical model of Paramasivan, et al, (2014) as well as Mckinley (2010) in identifying and selecting the indicators that constitute the index and then used the Kiani and Ullah (2014) Z-sum score approach in generating the Inclusive Growth Index for Nigeria.

Theoretically, the equation for this study is anchored on endogenous growth theory which was developed as an improvement to the Solow growth model in explaining the sources of growth. Thus, the endogenous growth theory is an extension of the Solow growth theory and it posits that investment in human capital prevents return to capital from falling but at least remains constant and contributes to increased or improvement in capabilities for innovation and adoption of new technology. Thus, economic growth can be achieved endogenously (i.e. within the production function) as far as human capital development is given priority.

3.1 METHODS

The formula for the z-sum score (Standardize score) is $Z = \dfrac{X - \mu}{\delta}$

Where;

X is the raw scores; μ represents the population/sample mean while δ stands for the population/sample standard deviation. In developing the inclusive growth index, the twelve indicators used were summed and their mean and standard deviation determined, then, the mean was subtracted from each of the indicators on a yearly basis. The outcome was then divided by the standard deviation to generate the standardized score for each of the series as presented in table 7 on Appendix. The steps used in computing the inclusive growth index as discussed above is shown in table 1.

Table 1: Computation of inclusive Growth Index (IGI) for Nigeria

INDICATORS	1970	1971	1972	MEAN(μ)	STD(δ)	STANDARDIZED FOR 1970	STANDARDIZED FOR 1971	STANDARDIZED FOR 1972	AUC (1970)	AUC (1971)	AUC (1972)
Life expectancy at birth (Per year)	40.97	41.39	41.82	46.848	3.213	-1.82	-1.69	-1.56	0.03	0.04	0.05
Control of corruption (%)	0.91	0.96	0.92	-0.056	1.048	0.92	0.96	0.93	0.17	0.16	0.17
GDP per capita (N'M)	160.09	181.09	188.10	118931.29	180730.68	-0.65	-0.65	-0.66	0.25	0.25	0.25
Employment (M)	19119780	19065690	19056550	34657277.98	12010364.57	-1.29	-1.29	-1.29	0.9	0.09	0.09
Government effectiveness (%)	-0.91	-0.96	-0.92	-0.963	0.121	0.43	0.02	0.35	0.33	0.49	0.36
Government expenditure on education (N'M)	185,714,200	127,752,200	376,130,000	1295041049	1356177065	-0.81	-0.86	-0.67	0.2	0.19	0.25
Electric power consumption (kWh Per capita)	27.47	28.57	32.73	89.361	38.506	-1.60	-1.57	-1.47	0.05	0.05	0.07
Inequality (%)	35.11	35.15	35.24	45.181	11.147	0.9	0.89	0.89	0.18	0.18	0.18
Paved Roads (Kilo Meter)	17	18	19	23.385	4.106	-1.55	-1.31	-1.06	0.06	0.09	0.14
No of Bank Branches (Per 100,000 Adult)	273	318.23	366.27	2492.677	1824.926	-1.21	-1.19	-1.16	0.11	0.11	0.12
Credit to SMEs (N'M)	351.7	502	628.7	2862244.996	4924833.731	-0.58	-0.58	-0.58	0.28	0.28	0.28
Health Expenditure (N'B)	12.48	12.64	14.26	45540.884	77455.79	-0.58	-0.58	-0.58	0.28	0.28	0.28
								AVE.	0.23	0.18	0.19

NOTE: The index lies between 0 and 1, so if the value is close to zero, then growth is not inclusive, but the closer the value to one, the more inclusive growth is.

AUC = Area under the Curve

AVE= Average of the AUC

Source: Researcher's computation, 2022

3.1.1 Model Specification

The theoretical basis to investigate the impact of macroeconomic policy on inclusive growth follows the baseline model anchored on the endogenous growth theory;

$$Y = A f (K^{\alpha}, L^{\beta}) \qquad (3.1)$$

Where: Y is aggregate output, A is efficiency parameter or Solow's residual, K is capital and L is labour. Following Mankiw, Romer and Weil (1992), K in equation (3.1) is further disaggregated into human capital (K_h) and physical capital (K_p). Therefore, equation (3.1) becomes:

$$Y = A f (Kh^{\alpha 1}, Kp^{\alpha 2}, L^{\beta 3}) \qquad (3.2)$$

In empirical form, equation (3.2) is stated as follows:

$$Y = AKh^{\alpha_1} Kp^{\alpha_2} L^{\beta_3} \qquad (3.3)$$

Equation 3.3 is transformed thus;

$$Y = A \, \alpha_1 Kh, \, \alpha_2 \, Kp, \, \beta_3 L \qquad (3.4)$$

Where; K_h is human capital, K_p is physical capital and L captures labour whereas α_1, α_2 and α_3 are parameters to be estimated. The efficiency parameter is used to capture the impact of macroeconomic policies on inclusive growth. This implies that the following holds according to the Solow and endogenous theories:

$$A = f(FISDY, M2), Kh = f(ADLT), \, KP = f(GFCF)$$

$$Y = IGI$$

Where; FISDY is captured by the ratios of fiscal deficit to GDP which reflect the effect of fiscal policy on inclusive growth while broad money supply (M2) was used to capture the influence of monetary policy on inclusive growth in the study. Aggregate output (Y) is captured by the Inclusive Growth Index (IGI) and computed following the eight inclusive growth indicators (productive employment, poverty reduction, inequality reduction, economic growth, human development, socio-economic amenities, governance and gender equity) as recommended by Paramasivan et al. (2014) and economic growth, productive employment, economic infrastructure, income poverty, general equality, human capabilities and social protection as postulated by McKinley, (2010) as well as the peculiarities of the Nigerian economy, thus, twelve indicators were used in computing the index. These include; life expectancy, expenditure on education and expenditure on health to capture human capabilities, control of corruption and government effectiveness to proxy governance, credit to small and medium scale enterprises and employment to represent productive employment and economic growth, electricity power consumption per capita to capture poverty, income inequality to capture inequality reduction and gender equity, paved roads to capture socio-economic amenities as well as number of bank branches which capture financial development and GDP per capita as peculiarities in Nigeria.

3.1.2 Fiscal and monetary policies equation

The fiscal policy and monetary policy equations are presented in an econometric form as stated below;

$$IGI = \alpha_0 + \alpha_1 Log(FISDY) + \alpha_2 Log(TAXR) + \alpha_3 Log(ADLT) + \alpha_4 Log(GFCF) + \alpha_5 Log(TECH) + \alpha_6 Log(LAB) + \mu \qquad (3.5)$$

The econometric form of the a priori expectation indicates that: $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5 > 0$ and $\alpha_6 \gtrless 0$.

$$IGI = \alpha_0 + \alpha_1 Log(M2) + \alpha_2 Log(INT) + \alpha_3 Log(ADLT) + \alpha_4 Log(GFCF) + \alpha_5 Log(TECH) + \alpha_6 Log(LAB) + \mu \qquad (3.6)$$

The econometric form of the a priori expectation indicates that: $\alpha_3, \alpha_4, \alpha_5 > 0$ and $\alpha_1, \alpha_2, \alpha_6 \gtrless 0$.

Where; IGI is a constructed index which captures inclusive growth; Fiscal policy is captured via FISDY is ratio of fiscal deficit to gross domestic product, and tax revenue (TAXR). Monetary policy is captured using broad money supply (M2) and interest rate (INT). However, gross fixed capital formation (GFCF) captures physical capital; labour is a factor in production function while technology (TECH) capture the impact of industrial policy on inclusive growth in Nigeria.

3.1.3 Model estimation procedure

The ADF (1981) and PP unit root test was adopted to determine the order of integration while the causality test seeks to detect the direction of causality. Co-integration test was used to determine the existence of long-run equilibrium relationship (Gujarati & Porter, 2009).

If the order of integration of the time series variables are of order one (i.e., I(1)), then Johansen co-integration test is suitable; but if the order of integration is a combination of order zero and one (i.e., I(0) and I(1)), ARDL-bounds co-integration test procedure is suitable. This study used both the Johansen and ARDL tests for co-integration. ARDL was used for monetary policy equation whereas the Error correction mechanism was used for the fiscal policy equation. The short − run relationships can be expressed as Error Correction Mechanism (ECM) as follows.;

$$\Delta Y_t = \delta_0 + \sum_{j=1}^{k} \beta_{ij} \Delta Y_{t-j} + \sum_{j=1}^{k} \lambda_{ij} X_{t-j} + \theta ECM_{t-i} + U_{1t} \qquad 3.10$$

Where: U_t is the white noise error term; and ECM is the error correction variable.

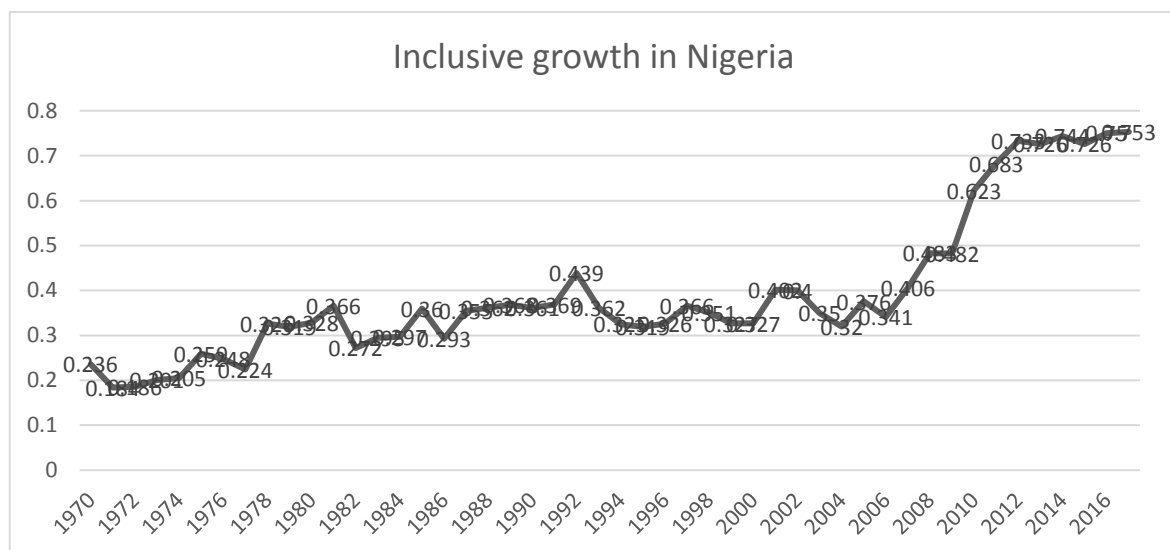The analytical software of the study is E-Views 9 software.

4.1 RESULTS AND DISCUSSION

4.1.1 Trends of inclusive growth in Nigeria

The computed inclusive growth index as explained in table 1 is presented in fig.1 and its shows that inclusive growth in Nigeria stood at 0.293 in 1986, increased to 0.355 in 1987, 0.369 in 1991, 0.439 in 1993 respectively but reduced to 0.325 in 1994. This fluctuation in the index may be attributed to autocratic leadership style prevalence in the economy at the time. With the birth of democracy in 1999, the index of inclusive growth increased to 0.402 in 2001. Banks consolidation policy initiated by the monetary authorities yielded positive results as it improved the index to 0.406 in 2007.

The adoption of vision 20:2020 from 2010 to 2013 also affected the index of inclusive growth in Nigeria making it to hover around 0.623, 0.683, 0.733 and 0.726 between 2010, 2011, 2012 and 2013 respectively. Inclusive growth dropped in 2015, reducing from 0.744 in 2014 to 0.726 in 2015. This may be attributed to regime change and the introduction of Economic Recovery and Growth Plan (ERGP) as a medium-term plan framework which lasted from 2017 to 2020. This plan was to stimulate economic growth and move Nigeria on the part of positive as well as inclusive growth. By and large, the index depicts that growth was impacted positively as the inclusive growth index of Nigeria marginally increased to 0.753 in 2017.

Figure 1: Trends of inclusive growth in Nigeria

Source: Author's computation, 2022

4.1.1 Empirical results presentation and analysis

Unit root result

Table 2: Augmented Dickey Fuller and Philip Perron unit root result

Variables	ADF Level	ADF 1st Diff	Decision	PP Level	PP 1st Diff	Decision
ADLT	-1.775192	-6.895750	1(1)	-9.953003	-8.525289	1(1)
FISDY	-0.137813	-3.654069	1(1)	5.100893	-3.785029	1(1)
GFCF	3.332375	-3.738860	1(1)	3.956645	-4.117885	1(1)
IGI	0.084807	-7.767754	1(1)	0.272437	-7.757778	1(1)
INT	-6.620642		1(0)	-6.620642		1(0)
LAB	1.682204	-5.765733	1(1)	-1.802345	-5.734803	1(1)
M2	-2.440895	-7.466038	1(1)	-2.441581	-7.451499	1(1)
TAXR	-1.862495	-8.446990	1(1)	-1.862495	-8.446990	1(1)
TECH	2.723915	-5.510729	1(1)	-0.128256	-5.516685	1(1)

ADF		**PP**	
Critical values at level & First diff		Critical values at level & First diff	
1% level= -3.36	-3.58	1% level = -3.578	-3.58
5% level = -2.93	-2.93	5% level = - 2.93	-2.93
10% level = -2.60	-2.60	10% level = -2.60	-2.60

Source: Researcher's computation, 2022.

According to the result on table 2, the ADF and Phillip Perron unit root show that all the variables were stationary at first difference except interest rate (INT) which was stationary at level in both ADF and PP. Since the result in both tests reveals a similar trend, ADF test was used to make decision on the estimation technique.

4.1.1 Inclusive growth and macroeconomic policy results

Table 3: Fiscal policy co-integration result

Series: IGI FISDY TAXR ADLT GFCF TECH LAB				
Lags interval (in first differences): 1 to 1				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.959247	309.8193	125.6154	0.0000
At most 1 *	0.892802	162.6088	95.75366	0.0000
At most 2	0.441955	59.88728	69.81889	0.2388
At most 3	0.281417	33.05476	47.85613	0.5538
At most 4	0.209503	17.85293	29.79707	0.5770
At most 5	0.140597	7.038638	15.49471	0.5731
At most 6	0.001496	0.068852	3.841466	0.7930

Source: Researcher's computation, 2022.

According to the result in table 3 above, it reveals that there is a long-run relationship amongst the variables in the equation.

Table 4: Parsimonious result for Fiscal policy equation

Dependent Variable: D (IGI)

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.004298	0.007978	0.538721	0.5931
D(FISDY(-1))	-0.718171	0.279009	-2.574006	0.0263
D(TAXR(-1))	-0.193598	0.101208	-1.912872	0.0560
D(ADLT)	0.004897	0.001806	2.711709	0.0309
D(LOG(TECH))	0.033562	0.017254	1.945170	0.0590
D(LOG(LAB))	0.002235	0.006556	0.341000	0.7349
ECM(-1)	-0.276196	0.132431	-2.085582	0.0422

R-Squared = 0.569465; Adjusted R-Squared = 0.527541

F-Statistic = 6.798982; Durbin-Watson Stat. = 2.200119

Source: Researcher's Computation, 2022.

According to the result in table 4, all the variables were consistent with their theoretical expectation except ratio of fiscal deficit to gross domestic product and tax revenue which were inconsistent with their a priori expectation. This may be because the deficits are not utilized in programmes that can stimulate inclusive growth. The result further shows that an increase of 1 per cent in technology and labour force will instigate an increase of about 0.033562 per cent and 0.002235 per cent on inclusive growth in Nigeria. More so, a unit increase in adult literacy rate will instigate an increase of about 0.004897 on inclusive growth within the period of analysis. This means that when literate adult increases, inclusive growth will also be achieved. However, an increase in one-year lag of fiscal deficit and tax revenue will instigate a reduction of 0.718171 unit and 0.193598, respectively, on inclusive growth in Nigeria. The result further reveals that all the explanatory variables were statistically significant except labour force within the period of analysis. More so, fiscal deficit –D (FISDY (-1)) and adult literacy rate – D(ADLT) were significant at 5 per cent since their t-statistic calculated of -2.574006 and 2.711709 in absolute term are greater than the tabulated t-statistic of 2.021. However, one-year lag of tax revenue –D (TAXR (-1)) and log of technology –D (Log (Tech)) were significant at 10 per cent level of significance. This is due to the fact that their t-statistic calculated (-1.912872 and 1.945170) in absolute term are greater than the t-statistic tabulated of 1.684. The contribution of labour force was insignificant both at 5 per cent and 10 per cent levels of significance.

The adjusted R-squared show that the model has a fairly high explanatory power. The estimated F-statistic result shows that the model has a good fit. The Durbin-Watson statistic indicates that there is no auto-correlation in our result estimates. The error correction mechanism coefficient of -0.276196 satisfies all the three criteria for its acceptability, i.e. it must be negative, fractional and statistically significant. Therefore, it reaffirms the existence of long run relationship

amongst the variables in the model. It shows that the speed of adjustment is slow since only 27.62 per cent of the short run disequilibrium is corrected each period in the long run.

Table 5: ARDL Bound test for monetary policy equation

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	8.955470	10%	2.33	3.25
K	6	5%	2.63	3.62
		2.5%	2.9	3.94
		1%	3.27	4.39

Source: Researcher's computation, 2022.

From the ARDL bound test result presented in table 5, there is a long run relationship amongst the variables considered in the monetary policy equation.

Table 6: ARDL short-run result for monetary policy equation

Dependent variable: D (IGI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.013301	0.006311	-2.107494	0.0421
D(LOG(M2))	0.052904	0.021456	2.465710	0.0309
D(ADLT(-2))	0.001919	0.001032	1.859425	0.0712
CointEq(-1)*	-0.258889	0.027986	-9.250648	0.0000

R-squared = 0.666660; Adjusted R-squared = 0.651156

F-statistic = 42.99873; Durbin-Watson Stat = 1.906020

Source: Researcher's computation, 2022.

According to the short-run result in table 6, all the variables are consistent with their a priori expectation. The estimated result shows that a one per cent increase in log of broad money supply will lead to 0.052904 per cent increase in inclusive growth index for Nigeria. Also, the result indicates that a two-year lag in adult literacy rate will lead to 0.001919unit increase in index of inclusive growth in Nigeria. This implies that in Nigeria, the passed effort to achieve inclusive growth does not support the current year efforts to achieve inclusive growth. The result further shows that all the variables were statistically significant within the period of analysis. Broad money supply was significant at 5 per cent while adult literacy rate was statistically significant at 10 per cent level of significance. This is because their t- statistic calculated of 2.465710 and 1.859425 are greater than 2.021 at 5 per cent and 1.684 at 10 per cent level of significance.

The adjusted R-squared indicates that the model has a high explanatory power. The F-statistic result shows that the model has a good fit and can be relied upon to explain the dynamics in inclusive growth in Nigeria. From Durbin-Watson statistical estimate we conclude that auto-correlation does not exist in our estimated result. The error correction mechanism estimates of

-0.258889 indicates that monetary policy equation has a slow speed of adjusting from the short-run to the long run.

5.1 CONCLUSION

Achieving inclusive growth has been one of the cardinal objectives of developing countries after realizing that despite the impressive growth experiences of the past years, unemployment, inequality and poverty are still on the increase and at a faster rate. The study tried to compute inclusive growth index for Nigeria and then examined how macroeconomic policy instruments impact on inclusive growth in Nigeria. The study adopted Z-sum score in computing the index of inclusive growth while fiscal policy and monetary policy are the macroeconomic policies considered in the study. The empirical result reveals that interest rate was stationary at levels while others were stationary at first difference. Surprisingly, the influence of fiscal deficit negates its theoretical postulation as it exerts a negative effect on inclusive growth within the period of analysis. This outcome corroborated the findings of previous studies such as Nwosu (2016), and contradicts that of Mobolaji, et al., (2015) as well as Zulfigar (2018) which posited that fiscal policy has a positive impact on inclusive growth. This reveals that despite the huge expenditure of the government year-in-year-out on different economic activities, its influence on inclusive growth within the period of analysis is at the opposite direction. This can be attributed to loopholes in the utilization of such expenditure. It may be as a result of diversion of funds, mismanagement or corruption which made it difficult for government expenditure to achieve it desired result in terms of stimulating inclusive growth in Nigeria.

By and large, apart from monetary policy (money supply) which stimulates inclusive growth in Nigeria, the study also discovered that adult literacy rate, technology and labour force impacted positively and significantly on inclusive growth in Nigeria. This implies that education advancement and level of technological advancement efforts of the country are vital in achieving inclusive growth. This may be attributed to the fact it assists in enhancing economic activities in the country as seen in the result.

Thus, the paper concludes that macroeconomic policies are veritable tools for actualizing inclusive growth especially if well-co-ordinated. The paper recommends that government should harmonize the different taxes in Nigeria, with the aim of lessening the burden so as to ensure that it does not hinder the achievement of inclusive growth in Nigeria. This can be achieved by articulating all the taxes paid by citizens at local, state and federal government levels to eradicate the incidence of multiple or duplication taxes. Furthermore, government should ensure that her deficits financing expenditure are channelled to growth stimulating sectors of the economy so as to create economic opportunities to a greater percentage of the population. This can be achieved by investing more in the agricultural, industrial, education and health sectors since they have a multiplier effect on the economy.

Appendix

Table 7: Inclusive Growth Index (IGI)

Year	IGI	YEAR	IGI
1970	0.236	1994	0.325
1971	0.184	1995	0.319
1972	0.186	1996	0.326
1973	0.201	1997	0.366
1974	0.205	1998	0.351
1975	0.259	1999	0.327
1976	0.248	2000	0.327
1977	0.224	2001	0.402
1978	0.326	2002	0.4
1979	0.319	2003	0.35
1980	0.328	2004	0.32
1981	0.366	2005	0.376
1982	0.272	2006	0.341
1983	0.295	2007	0.406
1984	0.297	2008	0.483
1985	0.36	2009	0.482
1986	0.293	2010	0.623
1987	0.355	2011	0.683
1988	0.362	2012	0.733
1989	0.368	2013	0.726
1990	0.361	2014	0.744
1991	0.369	2015	0.726
1992	0.439	2016	0.75
1993	0.362	2017	0.753

Source: Author's computation, 2022

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