

Fiscal Policy and Income Inequality: A Growing Concern for Less Developed Countries

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Abstract:- This study examines fiscal policy and income inequality in Nigeria using data from 1981 to 2017. The variables of interest are income inequality (proxy by Gini coefficient), government social expenditure, government economic expenditure, real GDP, education (proxy by secondary school enrolment) and government tax. The result shows that income inequality Granger-causes government economic and social expenditure without a feedback, while education granger caused income inequality without a feedback. This means that government expenditure only respond to income inequality, while education causes a change in income gap. The impulse response function shows that shock in real GDP and education causes an upward trend in income inequality, while shock in government social and economic expenditure does not show any impact on income inequality. Also, government tax only shows an impact on income inequality in the first and second period, and its impact towards the other period are not so significant. We therefore conclude that fiscal policy through government expenditure has no significant impact on income redistribution in Nigeria, and the only fiscal variable that can achieve income redistribution is tax – which must also be used with cautions.

Key words: Income inequality (Gini coefficient), fiscal policy and economic growth.

I. INTRODUCTION

The disparities in income inequality in most less developed countries, over the years, has increase the growing concern of policy makers, researchers and other agencies', as income inequality had been viewed as a devastating force to economic growth and development of any nation (Hirschman and Rothschild, 1973; Baumol, 1973; Hall, 2001; Marmot, 2005; Marmot, Friel, Bell, Houweling and Taylor, 2008). High income inequality had also been seen to have adverse effect on social cohesion, well-being, as well as limiting a country's ability to achieve sustainable economic growth and development (Cattell 2001; Stiglitz, 2002; Helliwell and Huang, 2008; Veenhoven, 2008). According to Stiglitz (2012), Inequality undermines the strength of an economy and contributes to economic instability. The major concern on this issue this is the continuous widening in income gap between the poor and the rich, as well as the presence of policy mismatch that addresses the problem of poverty in less developed countries (LCS's) (Atkinson, 1970; Sala-i-Martin, 2002; Godfray et al. 2010; Reardon, 2011).

Since Kuznets popular publication on "economic growth and income inequality" published in 1955, many other researchers

have been concerned about the divergence in income inequalities between developed and developing countries. Kuznets (1955) noted that, output growth in developing countries increase the disparity in income between the rich and the poor; whereas in developed countries, economic growth narrowed the differences. It was also noted by Kuznets that the inequality in income became highly noticed during the era of industrial revolution. This period characterized the transformation of the agrarian economy to an industrialized economy. As such, it involves the movement of peasant farmers from the agricultural sector – which is characterized with low production and low income – into the industrial sector that is characterized with high production and income. This movement was also linked to income inequality because the migrated labours are employed by the bourgeoisie and mercilessly exploit them (Brenner, 1976; Patnaik, 1983; Jones, 2012). Kuznet draws a line of support with Karl Marx argument against capitalist system which recognized that the proletariats – which are the workers – engaged in greater task that greatly enrich the capitalist. Hence, income inequality to Kuznet and Marx could be said to be a product of the market system.

It has been argued that since the market system mostly failed in providing equity; the government should intervene in the market through its discretionary policies in order to achieve income redistribution (Staiger and Tabellini, 1987; Majone, 1997; Hallberg, 2000). For instance, the government can engage in different tax system like proportional tax – a tax system where the rich pay a higher proportion of their income as tax – and the realized fund could be used to provide social services that benefit the poor. Doing this indirectly leads to income redistribution (Zysman, 1984; Bordignon, Manasse and Tabellini, 2001; Kemmerling and Bodenstern, 2006).

Nigeria despite the continuous increase in government expenditure, coupled with the country been ranked the 7th largest oil producing and exporter as well as having the highest average real GDP growth rate of 7.0 in Africa, the country had been experiencing high rate of income inequality and abject poverty overtime (Kaplan et, al., 1996; Sala-i-Martin, 2006; Ohimain, 2010; Chude and Chude 2013). According to the World Bank (2017), Human Development Index (HDI) puts Nigeria at 156th position among 177 countries as compared to the 151st position in 2002, Nigeria human poverty index (HPI) for 2017 was 36.2% placing

Nigeria at the 114th position and among the 7th poorest nations in the world. And currently has 42.4 percent of her population living in abject poverty (Akinyele, 2009; Watts, 2013; Anderson and Martin, 2013). The table below shows the income distribution of Nigeria from 1980 to 2010.

Table 1: Level of Income Distribution in Nigeria

Income recipients in Quartiles %	1980	1986	1992	1998	2004	2010	2016
Lowest 20%	7.01	6.02	4.00	5.00	5.13	4.41	5.39
Second 20%	12.02	11.41	8.8	8.8	9.67	8.27	21.61
Third 20%	15.77	15.52	14.51	13.55	14.68	12.98	14.45
Fourth 20%	24.0	23.04	23.26	20.22	21.91	20.33	9.62
Highest 20%	41.2	45.01	49.37	52.11	48.61	54.01	48.93
Total	100%	100%	100%	100%	100%	100%	100%
Gini Index	34.18	38.68	50.0	53.0	42.93	48.83	48.8

Source: World Bank (2017)

Gini index measures how income distribution or consumption expenditure deviate from the egalitarian line – the equity line – among the households and individual unit in a given area. The Gini coefficients (index) for Nigeria over the years have shown a major deviation as 2016 value was 48.8 (World Bank, 2017).

As shown in the table in 1980, the lowest 20%, second 20%, third 20% and fourth 20% of Nigerian population received a 7.01%, 12.02%, 15.77% and 24.0% of the total income respectively, while the highest 20% of the population received 41.2% of the income. In 1986, the portion of the total income allocated to these groups reduces from 7.01% to 6.02%, 12.02% to 11.41%, 15.77% to 15.52% and 24.0% to 23.4%, while the highest 20% of the population had their own share increased from 41.2% to 45.01%. From 1986 to 1992 the structural adjustment programme (SAP) period, the groups received 4%, 8.8%, 14.51%, and 23.26% of the total income, while the highest 20% had their own percentage increased 49.37% despite the introduction and implementation of the SAP, which was meant to alleviate poverty of the populace especially the rural dwellers.

From 1998 to 2004, a period that marked the inception of a democratic government, that was led by Olusegun Obasanjo. In this period, a lot of positive adjustment was done to the wage rate in the country (Collier, 2008; Kayode, Arome and Silas, 2014). The positive adjustment was able to transform the living standard or style of so many Nigerians, especially, the poor and average earners in the country (Zack-Williams, 2013). The distribution of income during this period was 5.13%, 9.67%, 14.68% and 21.91%, while the highest 20% received 48.61%. From 2004 to 2010, another notable reduction in the proportion of income received by the first

four categories of income recipients. In 2010, these categories received 4.41%, 8.27%, 12.98% and 20.33% respectively, while the highest 20% have their own share increase from 48.61% to 54.01% of the total income. The highest 20% of the populace, which comprises of the highest ranked, senior civil servant, top politicians experienced an increasing trend from 1980 to 1998. From 1998 to 2004, a reduction was recorded from 52.11% to 48.61%. The increase that was witnessed by the other four categories of income recipient during the Obasanjo administration is instrumental to this reduction. In 2010, the income received by these groups increased from 48.61% to 54.01%. In 2016, income distribution was given as 5.59%, 21.61%, 14.45% 9.62%, and the highest 20% receives 48.93% of the nation's income.

The Gini coefficients which are derived from the data are presented in the table above. In 1980, exactly 20 years after independence, the country recorded a Gini coefficient of 34.18. In 1986, a Gini coefficient of 38.68 was recorded; this marked a slight increase of 4.50%. In 1986, the Nigeria administration was under a military ruler, who introduced SAP, Structural Adjustment Programme into the country with the aim of removing poverty. The programme was meant to alleviate poverty and hence bring development and growth in the country. Despite the introduction of this programme in the country, in 1992, the Gini coefficient recorded was 50.0. Another 17.27% of increase was noted in the Gini index. An increase was also recorded 1998. The 1998 marked the end of military rule in the country. In 1999, precisely, a democratic government began in the country. In fact, the Gini index for Nigeria witnessed a decrease for the first time, as the index was 42.93%. The wage adjustment during Obasanjo regime had been argued as the main reason for the decline in the Gini index during this period (Rose, 2003; Radelet, 2010; Toyin et al., 2015). Unfortunately, 2010 and 2016 still show a high level of Gini coefficient in spite of the acclaimed dividend of democracy and different social project carried out by the government overtime. Although, various developmental projects have been introduced and under taken in the country. These have not been able to guarantee a growth that will finally remove inequality in the country. Even in situations where growths have been recorded, no impact has been made to remove income inequality in the country. Based on the above discussions, it means, the recorded growth in the country has not been able to alleviate inequality in Nigeria.

II. LITERATURE REVIEW

Keynesian Theory of Income Inequality

Keynes advocated for income equality in order to sustain an increase in economic growth. To Keynes, income inequality creates more money/resources in the hand of the rich whose marginal propensity to consume are low. This to him will leads to secular stagnation, as high inequalities reduce consumption and generate contractionary demand. This in turn will leads to a reduction in the level of production and increase unemployment rate as well as a decline in the

economic activities of those region. To Keynes (1936) stated that “the outstanding faults of the economic society is its arbitrary and inequitable distribution of wealth and incomes”, as this generate low propensity to consume. Keynes believed that the poor has high propensity to consume, and income redistribution is a key to promote a heady economic growth.

The post Keynesian school of thought in the 1950s and 1960s also thoughts on income equality and growth, and notable write up in this period is the Kuznets U-shaped curve. Kuznets U-shaped curve suggested that for every emergence economy, there is high tendency for an initial increase in income inequality, and as soon as the country embark on development, there will be a sufficient redistribution of income. This school of thought generally believed that income equality is a necessary step to economic growth.

General theories of income distribution

This theory is a summary note of the Marxian theory(1867), Ricardian theory (as quoted in Casarosa, 1982), Kaldor’s model (1955) and the Neo-classical theory of John Bates Clark (1899) and Fritz Machlup (1939). The theories give multiple reasons for income inequality in a society. It is an embodiment of theoretical literature that tries to explain income inequality among individuals, groups, nations, and regions.

To begin with, the model can be said to focus on three major factors of production – land, labour and entrepreneur. The economic income is divided among these factors of production in terms of rent, wage and profit. Ricardo identifies the major challenges in income inequality when income distribution is in favour of profit earners, which are the entrepreneurs. He also noted that income shared in favour of the landlord will also hamper economic growth.

Marx, on the other hand extend income distribution to include benefits, and interests; he however argues that rent, benefits and interest are received by only one class – the capitalists. Marx opined that since one class of the economy receives all these income, the workers are perpetually exploited by the capitalist – owners of means of production. Marx and Ricardo identify the unlimited labour supply as a major factor that contributes to income uneven distributions of income, and made the capitalist to keep wage at the subsistence level.

Like Marx, the assumptions of Kaldor’s model on income distribution reveals that return to economic processes or production is shared between two major classes: capitalists and workers. Kaldor observed that both the capitalists and workers have the propensity to save, and workers savings are usually lower than that of the capitalists. Kaldor holds that if profits are properly shared, it will help in bridging wages gaps between the capitalists and workers.

Conflict theory of class stratification

This theory talks about the harmful nature of income inequality as it is been argued that income inequality creates a

fixed system of winners and losers. They argued that inequality generates strata among the citizens and this leads to dis-functioning of the society. The social stratification tends to benefit the rich and powerful at the expense of the poor. Hence income inequality creates a system of winner and loser. The theory holds that capitalism benefits the rich though the theory was argued to have a trickle-down effect, but such create classes among the members of a society. Countries that practice capitalism often have an established government intervention that will intervene in the market system through subsidies, tax system and other form of intervention in order to reduce the adverse effect of stratification.

Empirical Literature

Todaniru and Adepegba (2010), examine the relationship between fiscal policy and income inequality in Nigeria using the two-stage least squares (2SLS) method of estimation. The results establish a long-run relationship among the variables of interest. They also found that They found that government expenditure does not have any impact on income inequality in the long-run. It was also found that the speed of adjustment to equilibrium is small in the model.

Dailami and Walton (2011) examined the role of fiscal policy in income distribution in Zimbabwe from 1970 to 2009. The researchers employed the OLS estimation technique, and found that income inequality is positively related to the growth in aggregate income level, real effective exchange rate, real interest rate, and the lagged dependent variable, and negatively related to the government bond yield, relative price of capital goods, and real wage.

Asante (2005) examine wage determination and gender wage gap in Ghana using a panel data analysis. The results showed that private investment, private sector credit, direct tax, public investment, real interest rate, and real exchange rate are variables that stimulate income inequality; while political change, trade and real GDP growth rate shows negative relationship with income distribution.

Ahmet and Gaobo (2000) posed a question on how to boost income level in the Middle East and North African (MENA) countries. The study revealed that direct real interest rate, tax, year of education, and age, shows positive relationship with income inequality. While public investment shows a negative relationship with income inequality. The accelerator variable also shows a positive relationship with income inequality which means that increase in the nations income generate more disparity in income.

Ribeiro (2010) employed the Johansen multivariate co-integration technique and Engle-Granger Two Step approach to model wage structure in Brazil during the period 1986-2008. The results reveal a positive impact of the output, public investment and government direct tax and the negative effect of exchange rate. He also conducted weak exogeneity and super-exogeneity tests and the results confirmed the existence

of income gap as real aggregate income level of the country increase.

Fatukasi and Ajasin (2015) in their analysis of income inequality and its threat on the people's health for the past years in Nigeria, and employed such variables as per capita income, health outcome – proxied by infant mortality rate and life expectancy, income inequality, education; and the study spanned from 1980 to 2014. Using OLS estimation technique, the result shows the presence of cointegration among the variables of interest. Also, the result further shows that income inequality poses a negative relationship with health outcome in Nigeria. Moreover, they also observe a unidirectional causality between income inequality and life expectancy. The conclusion of this research was that health outcomes have influence on income inequality in Nigeria.

Akpolih and Farayibi (2012) examine the magnitude of inequality as a barrier to economic growth in Nigeria using OLS estimation technique. They found a negative relationship between income inequality and economic growth. They also found that inequality undermines savings and investment in Nigeria. The researchers conclude that government inefficiency in Nigeria contributes to income inequality in Nigeria. Awe and Rufus (2012) also found support to the research done by Akpokhan and Farayibi (2012) and they suggest that inequality was caused by government expenditure, education and economic growth.

Nurudeen (2014) investigate the relationship between poverty, inequality and economic growth in Nigeria from 2000 to 2012. Employing Johansen cointegration test and granger causality test approach, the researcher found a long-run relationship between the variables of interest. The researcher also found that real GDP Granger causes income inequality. The researcher therefore concludes that increase in income will increase income inequality in Nigeria.

Aigbokhan (2000) examine the impact of growth on poverty and inequality in Nigeria using variables from 1985 to 1997. The researcher found a negative relationship between economic growth and income inequality. He therefore rejects the trickle-down effect hypothesis, and conclude that economic growth in Nigeria does not lead to improve in welfare.

Checchi (2000) in the analysis of the relationship between education and income inequality found a strong negative relationship between the year of schooling and income inequality. In other words, as the year of schooling increases, the tendency for income inequality reduces. Furthermore, the result shows a negative relationship between income inequality and per capita income, but positively correlated with government expenditure on education and capital-output ratio. Klasen (2009) also noted that fiscal policy that tends to increase income inequality. The study found that reduction in interest rate and reducing financial constraint for higher education can increase income inequality.

Antonczyk et al. (2010) examine the trend in income inequality between US and Germany. The research aimed at examining the income difference between these two countries. The analysis shows a high inequality gap between the two countries which actually spanned from 1979 to 2004.

Gregorio and Lee (2002) also examine the relationship between education and income distribution using panel data from European countries, and with data spanning from 1960 to 1990. The result shows that a more balanced government spending and education attainment reduces income inequality. The researchers also confirmed the inverted U-shape of the relationship between increase in national income and income distribution.

Panalisa (2010) examine the relationship between economic growth and income inequality. He found that increase in economic growth reduces income inequality through technological change and opportunity in education. This means that increase in education and technological advancement reduces income inequality. However, the researcher also found that fast growing technology widens the income gap. The major problem of this finding is failure to account for the benchmark beyond which the growth in technology adversely affects income inequality.

Lemieux (2006) on the other hand shows that increase in education attainment reduces income inequality for high income earners, but such evidence was not found for low income group. The researcher however concludes that the income gap experience globally between 1973 and 2006 was due to increase in the returns to education.

III. MODEL SPECIFICATION

The model specification will be an extension of Keynes' argument of the stabilizing role of fiscal policy. Keynesian model of public expenditure, emanated in the early 1930's after the great depression experienced in the early 1930's. Keynes opposed the view of the classical school and advocates for government expenditure in order to increase the purchasing power of the people. The classical view was of the view that market failure could be prevented through the abolition of trade union which often opposes price flexibility. The involvement of government in the economy – in form of expenditure was considered to be harmful, as such generate more disequilibrium. The classical school believed in the invisible hand (price) to always bring the economy back to equilibrium state.

Keynes on the other hand favours government intervention to prevent market failure. To Keynes, we cannot rely on the classical long-run relationship, because in the long run, we are all dead. Hence, there is need for short-run model that will bring the economy to its long-run equilibrium state, and there is need for government expenditure to cure for short-run dynamics. Furthermore, the government is needed in order to actively participate in the economy to correct for market failure. He noted that the capitalist system can create wealth in

the hands of few individuals in the country; hence, government intervention is necessary in income redistribution.

Following the above argument, this work will adopt the augmented vector autoregressive (VAR) process of order k, and it could be stated as:

$$Y_t = \sum_i^k \varphi_i Y_{t-1} + \varepsilon_t \quad (1)$$

Where Y_t is an L x 1 vector, and φ_i is k x k vector {i = 1, 2, ..., k}. Though in this research, the lag length will be selected based on the maximum length recognized after the necessary test had been conducted.

Equation (1) can be restated to capture individual equation in accordance with the synthesis of the Keynesian argument of fiscal policy and income inequality. In line with this theory, the variables of interest include government economic expenditure, government social expenditure, Gini coefficient – used to capture income inequality as recommended by World Bank – secondary school enrolment (to capture education), real GDP and direct tax (DTX). The model containing these variables is given thus:-

$$\begin{aligned} \Delta \ln GC_t = & \alpha_0 + \sum_{i=1}^n \alpha_{1i} \Delta \ln GC_{t-i} + \sum_{i=0}^n \alpha_{2i} \Delta \ln GEE_{t-i} \\ & + \sum_{i=0}^n \alpha_{3i} \Delta \ln GSE_{t-i} + \sum_{i=0}^n \alpha_{3i} \Delta \ln EDU_{t-i} \\ & + \sum_{i=0}^n \alpha_{3i} \Delta \ln RGDP_{t-i} + \sum_{i=0}^n \alpha_{4i} \Delta \ln DTX_{t-i} \\ & + \varepsilon_t \end{aligned} \quad --(2)$$

Where,

- GC is Gini coefficient, it is not logged because it is in rate
- GEE is government economic expenditure. If actually fiscal policy leads to income redistribution through government expenditure on education and health, the shock from this variable will lead to downward response in income inequality (Gini index)
- GSE is the variable for other social spending by the government. An efficient fiscal policy that leads to income redistribution will show a negative relationship between this variable and the dependent variable.
- EDU is the coefficient for secondary school enrolment. It is used to proxy education. This coefficient had been argued by some researchers to lead to more income inequality, while some found the opposite to be true.
- RGDP is the coefficient for real gross domestic product. If income growth leads to more even redistribution of income, then shock in this variable will lead to a downward response in Gini index.

- DTX is direct tax. The government uses this as a tool for income redistribution. Hence, we expect negative relationship between this variable and the dependent variable

Also, in order to ascertain the granger causality between fiscal policy and income inequality in Nigeria, we specify the model below:

$$\begin{aligned} \Delta Y_t = & \delta_0 + \sum_i^n \delta_{1i} \Delta Y_{t-i} + \sum_i^n \delta_{2i} \Delta X_{t-i} \\ & + \varepsilon_t \end{aligned} \quad --(3)$$

$$\begin{aligned} \Delta X_t = & \psi_0 + \sum_i^n \psi_{1i} \Delta X_{t-i} + \sum_i^n \psi_{2i} \Delta Y_{t-i} \\ & + \varepsilon_t \end{aligned} \quad --(4)$$

Where Y_t is Gini index and X_t is a 1 x 5 vector of other explanatory variables (GEE, GSE, EDU, RDGP and DTX). Δ is the difference operator; n represents the numbers of lags; δ , and ψ are parameters to be estimated; and ε_t represents the serially uncorrelated error terms.

IV. PRESENTATION OF RESULT

Unit Root Test

The unit root test is carried out to test the order of integration of the variables. The Augmented Dickey-Fuller (ADF) test is used to ascertain the order of integration of the variables at the level and their first difference respectively. This test is necessary as variables that are not integrated of order zero cannot be used to ascertain the short-run relationship. The test is presented below.

Table 2: Unit root test using ADF test statistics.

Variables	ADF Stat at Level	5% Critical Value	Prob .	ADF at First Difference	5% Critical Value	Prob.	Integrated Order
GEE	-1.065	-2.969	0.7289	-5.221	-2.972	0.0000	I(1)
GSE	1.527	-2.969	0.9976	-4.296	-2.972	0.0005	I(1)
GC	-2.538	-2.969	0.1066	-5.661	-2.975	0.0000	I(1)
RGDP	3.125	-2.969	1.0000	-3.740	-2.972	0.0036	I(1)
TAX	1.419	-2.969	0.9972	-5.741	-2.972	0.0000	I(1)
EDU	1.525	-2.969	0.9976	-5.659	-2.975	0.0000	I(1)

Table 2 above shows the result of the ADF statistic both at the level form and the first difference respectively. The result

shows that none of the variables was stationary at their level form, but were all stationary at their first difference. We therefore conclude that all the variables of interest are integrated of order one i.e I(1) process.

Cointegration Test

Since this analysis is on multivariate analysis, there is need to ascertain whether there is long-run cointegrating equation in the model. If ever there exists a long cointegrating equilibrium relationship, we would have more than one cointegrating equations. This information is necessary before we can estimate our VECM. The Johansen multivariate test will be used for this analysis. The result is presented in the table below:

Table 3: Cointegration test result

Maximum Rank	Eigenvalue	Trace Statistic	5% Critical Value
0	—	177.1590	94.15
1	0.84312	112.3288	68.52
2	0.69123	71.1980	47.21
3	0.59562	39.5093	29.68
4	0.43036*	19.8129*	15.41*
5	0.31947	6.3422	3.76
6	0.16574	—	—

- Indicate the numbers of cointegrating equations

The result above shows that find out that the maximum rank is 4 i.e r=4 we reject other once as the trace critical value become significant at 5%. Therefore we conclude that there are at least 4 cointegrating equations in the model.

Granger Causality Result

Table 4: Granger causality test result

GRANGER CAUSALITY TESTS	Chi-Square	Lag	Prob.
GC does not cause GEE	17.536*	2	0.000
GC does not cause GSE	11.495*	2	0.003
GC does not cause TAX	5.3668	2	0.068
GC does not cause RGDP	0.65674	2	0.720
GC does not cause EDU	5.6715	2	0.059
GEE does not cause GC	5.4271	2	0.066
GSE does not cause GC	2.4446	2	0.295
TAX does not cause GC	0.66883	2	0.716
RGDP does not cause GC	0.1986	2	0.905
EDU does not cause GC	12.043*	2	0.002

Where * indicate 5% level of significance.

The Granger causality result above shows that income inequality granger-causes government economic expenditure without a feedback. This shows that Nigerian government

expenditure is only a responding to income inequality and not vice versa. Also, we found a unidirectional causation between government social expenditure and income inequality. This means that the entire social programme in Nigeria only respond to income inequality. It is income inequality that drives both government economic and social expenditure.

The result also shows that education granger-causes income inequality in Nigeria. This means that the higher the level of education attained, the higher will be the income disparity in Nigeria. Other variables were found not to be statistically significant at 5% level.

Impulse – Response Result

Response of Income Inequality to Education

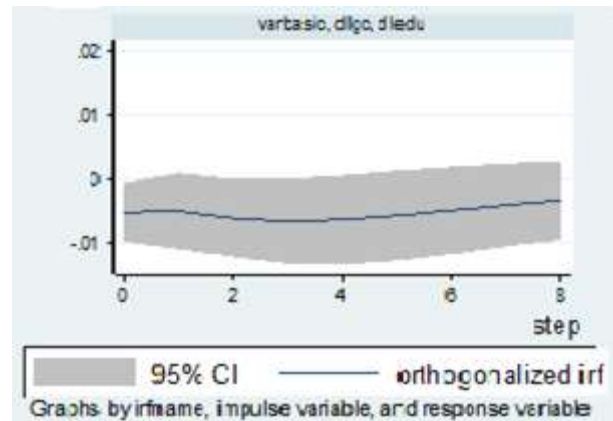


Fig. 1: Response of income inequality to education

The impulse response chart, as shown in fig. 1 above, clearly shows that income inequality had been trending upward in response to shocks in education. Though, there was a little decline between first and second period, there had been a continuous rise in income inequality in response to education in Nigeria.

Response of Income Inequality to Government Economic Expenditure

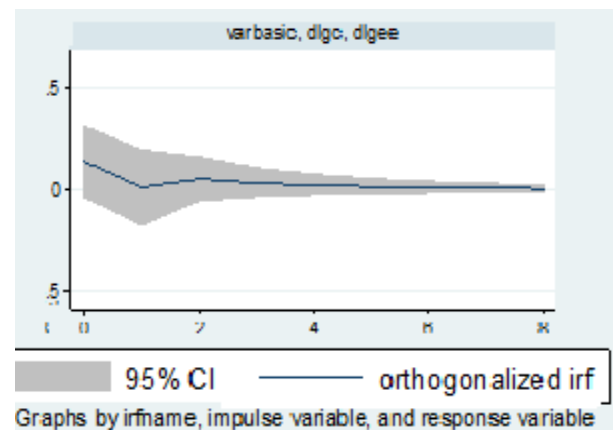


Fig. 2: Response of income inequality to government economic expenditure

The result presented above shows that income inequality only respond to government economic expenditure between the first and second period only, probably because of the structural adjustment programme 1896. Thereafter, income inequality has maintained a relatively constant response with government economic expenditure.

Response of Income Inequality to Real GDP

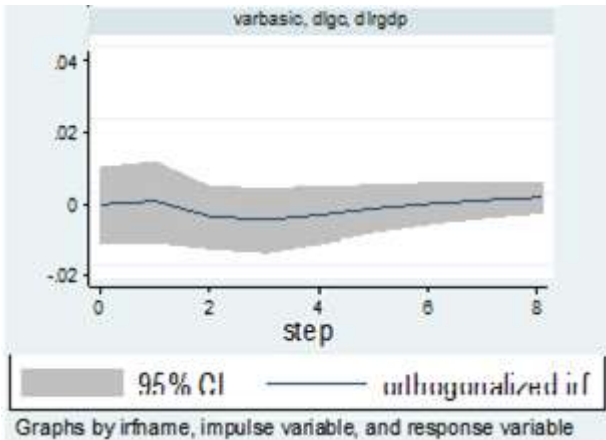


Fig. 3: Response of income inequality to real GDP

The impulse response result in the figure above shows that increase in economic growth increases inequality in Nigeria. Though in the first period and through third period, increase in real GDP reduces income inequality. But from third period to the eight period, shocks in economic growth has been increasing income inequality in Nigeria.

Response of Income Inequality to Government Tax

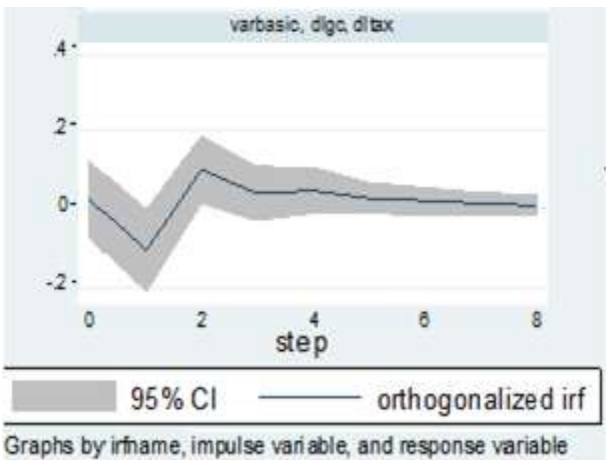


Fig. 4: Impulse – response of income inequality and government tax.

The result presented above shows that the impact of tax on income inequality was very efficient, probably because of SAP. Thereafter, income inequality only responds to tax only in a little manner, as the relationship tend to be constant overtime. Though the result clearly shows that tax system is an efficient means of income redistribution in Nigeria.

Response of Income Inequality to Government Social Expenditure

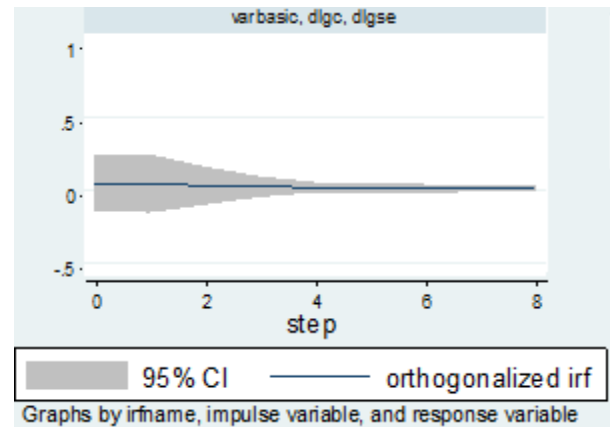


Fig. 5: Impulse – Response of income inequality to government social expenditure

The result above shows that government social expenditure does not have a significant impact on income inequality in Nigeria. The impulse – response result clearly shows that the relationships between these two variables are constant from the first period to the eight periods.

V. POLICY IMPLICATION OF FINDINGS AND RECOMMENDATION

The Granger-causality analysis result shows that government economic and social expenditure only respond to income inequality, probably these dual expenditures are just there not to tackle the problem of income inequality but to reduce its impact. The granger causality on these two government expenditure shows that government expenditure is only a response to a shock in income inequality. The impulse – response of government economic and social expenditure on the other hand also confirmed that income inequality does not respond to government expenditure. This means that fiscal policy is not efficient in solving the problem of income inequality in Nigeria.

Government tax on the other hand only show a significant impact on income inequality in the first and second period. This therefore suggests that the only way through which Nigerian government can achieve income redistribution is through tax system.

More also, increase in real GDP was found to increase income inequality in Nigeria. This pinpoint that the wealth of the nation is concentrated in the hands of few, and to achieve equity in income distribution will posed a great challenge on the government, since the only efficient way of doing this is through tax system.

Finally, education was also found to increase income inequality. This means that the higher the education, the higher will be the income gap. Then it means that education level of Nigeria must strongly be improved if income equity will be achieved.

VI. SUMMARY AND CONCLUSION

This current study examines fiscal policy and income inequality in Nigeria using data from World Bank data from 1981 to 2017. The variables of interest are income inequality (proxy by Gini coefficient), government social expenditure, government economic expenditure, real GDP, education (proxy by secondary school enrolment) and government tax. The result shows that income inequality Granger-causes government economic and social expenditure without a feedback, while education granger caused income inequality without a feedback. This means that government expenditure only respond to income inequality, while education causes a change in income gap. The impulse response function shows that shock in real GDP and education causes an upward trend in income inequality, while shock in government social and economic expenditure does not show any impact on income inequality. Also, government tax only shows an impact on income inequality in the first and second period, and its impact towards the other period are not so significant.

We therefore conclude that fiscal policy through government expenditure has no significant impact on income redistribution in Nigeria, and the only fiscal variable that can achieve income redistribution is tax – which must also be used with cautions.

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