



FISCAL POLICY AND MISERY INDEX IN NIGERIA

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Abstract

This paper investigated the influence of fiscal policy on misery index in Nigeria. The data for the study were collected from the numerical bulletin of Nigeria's apex bank and Office of Statistics spanning 1985 to 2020. Misery index was measured by the sum of unemployment, inflation, lending rates minus the percentage change in real GDP per capita. The Augmented Dickey-Fuller test and Autoregressive Distributed Lag - ARDL model were the main tools of analysis. The outcome of the unit root test indicated that the variables were stationary at order zero and one, which fulfilled the requirement to employ the ARDL Bounds testing method. The ARDL Bounds test revealed the presence of long run association among the variables. The results revealed that recurrent expenditure and external debt have helped to reduce misery index in Nigeria throughout the period under consideration. However, capital expenditure, total tax revenue and domestic debt have not been effective in reducing misery index in Nigeria throughout the period under consideration. This may be because of mismanagement, corruption, embezzlement and inability of government to detect and eradicate all administrative loopholes for capital expenditure, tax revenue and domestic debt to contribute meaningfully to the reduction of misery index in Nigeria. Based on these findings, the study recommended that government should give employment generation the policy centrality it deserves. This requires questioning before approval, the employment implication of contracts for capital projects in order to reduce unemployment and misery index. At present, this question is not being asked. Consequently, certain policies are put in place that are at best employment neutral or at worse destroy rather than create jobs. In addition, government should ensure that aggregate tax revenues are efficiently used to make expenditures on housing, education, transportation, agriculture, health, power, road construction, national defense, among others that will help the

various sectors of the economy to function very well thereby reducing unemployment rate and misery index in the country. To accomplish this, government should combat mismanagement, corruption and embezzlement of tax revenues and funds available for capital projects. Government should also detect and eradicate all administrative loopholes for aggregate total tax revenues to contribute significantly to the reduction of misery index in Nigeria.

Keywords: Fiscal Policy, Misery Index, ARDL and Nigeria

INTRODUCTION

One of the objectives of governments' policies especially fiscal policy is to improve the wellbeing of the citizens. In Nigeria, it is the responsibility of the central government through the Ministry of Finance to initiate policies that will help to achieve basic macroeconomic objectives which are necessary to maximize the economic wellbeing of the citizens and at the same time minimize the level of economic misery.

Economic misery is measured by misery index (MI). In the 1960s, an American economist named Arthur Melvin Okun, developed Misery Index as a way to provide President Lyndon Johnson with an easily digestible snapshot of the economy. That Okun's index was a simple sum of a country's annual unemployment rate and its inflation rate. It is assumed that both an increase in the rates of unemployment and inflation will create economic and social costs for a country. Okun's index was used for quantifying the financial well-being of a country's population. It measures how people are faring economically in a country. Okun indicated that the misery index can be perceived as a crude utility or just disutility function in an economy (Po-Chin, Shiao-Yen and Sheng-Chieh, 2014).

The Okun's index was later modified by Robert Barro of Harvard and then Hanke. The Hanke's misery index (MI) score for any country is simply the sum of the unemployment, inflation and bank lending rates, minus the percentage change in real GDP per capita. A higher MI score reflects higher levels of "misery". Following this measurement, misery index for Nigeria has been worrisome, the country was ranked 6th on Hanke's MI in 2017 and 2018. What this suggests is that Nigeria is the 6th country with miserable people in the world. The word misery connotes unhappiness, distress, wretchedness, hardship, suffering, affliction, anguish, sadness, sorrow, etc.

The factors contributing to Nigeria's misery include its high unemployment rate, inflation rate and interest rate. For instance, in 1987 the first year of implementing Structural Adjustment Programme (SAP), unemployment stood at 7.0 percent. It was 7.5 percent in 1992; it declined to 7.2, 6.8, and 6.4 percent in 1993, 1994 and 1995. It rose again to 8.5 in 1997. In 1998, it fell

to 7.6 percent and rose again to 8.5 and 11 percent in 1999 and 2000 respectively. In 2001, 2002, 2003 and 2004 it was 9.6, 8.8, 10.8 and 10.2 percent. CBN (2003) reported that the reason for these increases in unemployment rate in Nigeria was because of the simultaneous rapid expansion in the educational sector, new entrants into the labour market increased beyond the absorptive capacity of the economy and these developments have worsened the unemployment situation in the country. Also, in 2005, 2006, 2007, Nigeria's unemployment rate maintained an increasing trend of 9.4, 9.9 and 10.9 percent respectively. The situation worsened in 2008 (Gbosi, 2015).

Specifically, Nigeria's unemployment rate was 12.8 percent in 2008. In 2009 and 2010, the national unemployment rate was 11.2 and 11.5 percent respectively (Gbosi, 2015). In 2011, the unemployment rate was 14.6 percent (CBN, 2013). The double digits unemployment rate continued until it increased from 18.8% in Q3 2017 to 23.1% in Q3, 2018. The unemployment rate in Q2, 2020 was 27.1% (BNS and CBN, Various Issues).

At the same time, Nigeria's inflation rate has warranted considerable attention. For instance, in 1980, 1981, 1982, 1983, 1984 and 1985; inflation rates were 9.90, 20.90, 7.70, 23.20, 39.60 and 5.50 percent respectively. The inflation rate fell slightly in 1986. In that year, inflation rate was 5.40 percent. In 1987, the year Structural Adjustment Programme was implemented in Nigeria, the inflation rate increased to 10.20 percent. In 1988 and 1989 inflation rates stood at 38.20 and 40.90 percent respectively. It fell to 7.50 percent in 1990. In 1991, 1992, 1993, 1994, inflation rates stood at 13.00, 44.50, 57.20, and 57.00 percent respectively. Available evidence shows that inflation reached its peak in Nigeria in 1995. In that year, the country's inflation rate stood at 72.80 percent. It later decreased to 29.30 percent in 1996. In 1997 and 1998, inflation rates stood at 8.50 and 10.00 percent respectively. Inflation rate decreased sharply in 1999 and 2000. In these years, Nigeria's inflation rates were 6.60 and 6.90 percent respectively. The restrictive monetary policy adopted by the monetary authorities during the period might have been responsible for the trend. In 2001, 2002, 2003, 2004 and 2005, inflation rates stood at 18.90, 12.90, 14.00, 15.00 and 17.90 percent respectively. It however declined to 13.7% and 10.8% in 2010 and 2011 respectively. In 2012, inflation rate slightly increased to 12.2% and slightly declined to 8.5 and 8.1 in 2013 and 2014. This decline was not sustained as inflation rate rose to 9.0% and 18.6% in 2015 and 2016 respectively. In 2017, it declined mildly to 15.4%. The continued double digit inflation rate in Nigeria is worrisome (Gbosi, 2015 & CBN, 2018).

Moreover high rate of inflation is linked to resource misallocation that distorts economic efficiency and reduces output growth. High inflation discourages savings and investment, and thus, impedes productivity and output growth. It increases the cost of borrowing and lowers the

rate of return on investment. In an inflationary period, the store of value function of money suffers greatly with concomitant implication on output, employment and income distribution.

To this effect, the monetary authorities and other government agencies charged with macroeconomic management are constantly seeking to comprehend the nature and underlying causes of inflation. Having known the source of the problem, the policy-makers will then design appropriate macroeconomic policies to bring it under control. For instance, the Central Bank of Nigeria (CBN) had adopted several measures to ensure that monetary growth in the country is consistent with the macroeconomic objectives including price stability. For instance, in 1990, the CBN maintained a tight Monetary Policy Rate (MPR) of 18.50%, the MPR stood at 13.50%, 13.50% and 18% in 1995, 1999 and 2000 respectively, in 2001 it stood at 14.31%, it hovers within that range till 2002 when it rose to 19% and stood at 12% in 2013 respectively (CBN, Various Issues). In 2014, the Central Bank of Nigeria (CBN) maintained a restrictive monetary policy stance, which was initiated in 2011, retained the monetary policy rate at 12.0 per cent in the first three quarters and raised it to 13.0 per cent towards the end of the fourth quarter to maintained domestic price stability (CBN, 2014).

Furthermore, in 2015, the CBN also upheld a tight monetary policy following the challenging global and domestic economic environment. On the former, the challenges included: dwindling foreign exchange reserves, arising from low crude oil prices; low fiscal buffers; and excess liquidity in the banking system, while on the latter were growth slowdown and monetary policy divergence. These events had serious implications for domestic macroeconomic conditions, particularly inflation that required a proactive response by the CBN. Therefore, the MPR was reduced to 11% in November from 13%. Also, cash reserve ratios on public and private sector deposits were harmonized to 31% in May 2015, and reduced later to 25% and 20%, in September and November 2015, respectively (CBN, 2015).

Monetary policy continued to be restrictive in 2016, following inflationary pressures and eventual sliding of the economy into recession. In that year, the monetary policy rate was raised twice, from 11.0 to 12.0 per cent and further to 14.00 per cent. Its yearly average stood at 12.83 and the cash reserve ratio also increased to 22.50 from 20.0 per cent during the course of 2016 (CBN, 2016). In 2017 and 2018, monetary policy remained non expansionary in nature, the MPR was maintained at 14.0 per cent throughout 2017 and 2018 (CBN, 2017 and CBN, 2018). High interest rate – lending rate or double digits interest rate has extremely discouraged investors in Nigeria. This has worsened the wellbeing of Nigerians. Even as economic wellbeing has continued to worsen in Nigeria and the misery index has remained high. There is limited empirical investigation of the impact of fiscal policy on misery index in Nigeria. It is important to examine the impact of fiscal policy on misery index in Nigerian. The remaining parts of this

paper were structured into literature review, materials and methods, results and discussion, conclusion and recommendations.

LITERATURE REVIEW

Theoretical Review

Before Keynes the prevailing classical economic thinking was that government should not interfere in the economy beyond the maintenance of law and order. The market should be allowed to direct resource allocation. This was based on the belief that a market economy had built in forces that could automatically correct deviations from the preferred state of affairs, the so-called self-correcting mechanism. But when the Great Depression of the 1930s came this belief was proved erroneous, and Keynes convincingly argued for government intervention to correct deviations from preferred income, output, and employment levels.

According to Keynes, government should design and use specific policies to deal with departures from full employment. Today governments in all market economies intervene in the functioning of their economies using economic policies, specifically fiscal policy. According to Akpakpan (1999), fiscal policy refers to government's plan for spending and taxation in the relevant period. Conway (2009) sees it as the decisions a government takes about what to spend its money on, how to raise taxes and how much to borrow. One of the primary objectives of fiscal policy is to smooth out fluctuations in economic activity that often cause unemployment and/or inflation, and by so doing, steer the economy towards full employment. In other words, fiscal policy is intended to help the government to manage aggregate demand in a way that ensures continuing prosperity for the society.

Furthermore, fiscal policy can be expansionary or contractionary in nature. An expansionary fiscal policy involves increase in government expenditure and/or decrease in taxes with the aim of stimulating aggregate demand and hence the economy. But the reverse is the case for contractionary fiscal policy. Keynes argued that fiscal policy has significant effect on the level of total income and employment. Following the Keynes line of thinking, an expansionary fiscal policy has the ability to minimize economic misery and improves wellbeing through increase in the level of investment, employment generation, higher productivity and output growth. Importantly, government policies significantly influence investment. Changes in tax laws, for instance, could boost or reduce investment spending. Thus, fiscal policy in Nigeria is expected to increase output and employment.

Empirical Review

Empirically, this study reviewed studies on the effect of fiscal policy on separate indicators of misery index. For example, Nworji and Oluwalaiye (2012) sought to find out how public spending on road infrastructure has impacted on economic growth in Nigeria during 1980 to 2009 using ordinary least squares technique. They found spending by the government on transport & communication and defense to have significant influence on economic growth. At the same time, they discovered positive and insignificant influence of inflation on economic growth.

Fasoranti (2012) examined the influence of government spending on Nigeria's economy using simple manifold regression model. The study observed that government spending on health services, transport and communication impacted negatively on growth of the economy; however, expenditures in agriculture and security were not significant in spurring the growth of the economy.

A year after Fasoranti's study, Holden and Sparrman (2013) explored the influence of the purchases of government on unemployment in 20 OECD countries spanning 1980 to 2007. The study detected that an increase in the purchases of government which equals one percent of GDP reduced unemployment by about 0.3% in the same year. This influence was observed to be greater in downturns than in booms, also greater under a fixed exchange rate system than a floating system.

Nwosa (2014) employed ordinary least squares technique to examine the impact of government spending on unemployment and poverty rates in Nigeria for the time 1981 - 2011. The result revealed on one hand that government spending has positive and noticeable impact on unemployment. On the other hand, government spending has negative but unimportant impact on poverty rate.

Otto and Ukpere (2015) examined the impact of fiscal policy on inflation using ordinary least squares technique. The purpose of their analysis was to show that the request by the Academic Staff Union of Universities (ASUU) for government to increase education expenditure, will not fuel inflation in Nigeria. Their results revealed that fiscal policy has not significantly impacted on inflation. This outcome suggests that government should meet the demands of ASSU by increasing education expenditure because increase in education expenditure by the government will not fuel inflation in Nigeria.

Muhammad and Benedict (2015) used cointegration and Granger causality tests to find out how education expenditure has impacted on economic growth in Nigeria from 1981 - 2010. The outcome revealed that there is no causality between real gross domestic product growth rate and education but there is bi-directional causality between recurrent expenditure on

education and aggregate government expenditure on education. Primary school enrollment does not Granger cause total government expenditure on education; the latter does Granger cause the former. No causality between recurrent expenditure on education and real growth rate of gross domestic product and also no causality between primary school enrolment and RGDP domestic product and consequently. They also found the existence of co-integration.

Serdar (2015) investigated the impact of health expenditures on economic growth in Turkey for the time 2006:M01- 2013:M10. Serder applied the Feder–Ram model. The results revealed in health expenditures impacted on economic growth. Specifically, direct impact is positive and significant while indirect impact is negative and significant.

Abomaye-Nimenibo and Inimino (2016) examined the impact of fiscal policy on unemployment rate in Nigeria using data on capital expenditure, recurrent expenditure, tax revenue and unemployment rate sourced from the statistical bulletin of Nigeria's apex bank. The econometrics method of Error Correction Mechanism was employed as the analytical tool. From the analysis, capital expenditure appeared with the right sign i.e., negative and statistically significant at 5% level of significance in reducing unemployment rate in Nigeria. But recurrent expenditure and tax revenue were not statistically significant in reducing Nigeria's unemployment rate.

Obayori (2016) employed co-integration and ECM methods to investigate the impact of fiscal policy on unemployment rate in Nigeria. The findings revealed that government capital and recurrent expenditure have negative and significant association with unemployment in Nigeria. The result also revealed a long run relationship between fiscal policy and unemployment. The study concluded that fiscal policy is active in reducing unemployment rate in Nigeria.

Omodero and Azubike (2016) used time series data from 2000 to 2015 and multiple regression analysis to appraise education expenditure and economic development in Nigeria. The outcome revealed that education expenditure impacted on the economy meaningfully. While social and community services, as well as enrolment in school revealed a significant association with the economic growth.

Newettie (2017) investigated the component of public expenditure that is more growth enhancing for the agricultural sector for Zambia, Malawi, South Africa and Tanzania for the time 2000 and 2014 using VECM. The findings showed that agricultural growth responded differently to the agricultural spending types across the countries. Also, agricultural growth and spending on infrastructure has a negative association with expenditures on ISPs, PSPs and agricultural research in Zambia.

Abiodun and Osagie (2018) empirically investigated the impact of educational expenditure on economic growth in Nigeria from 1987 to 2016 using Autoregressive Distributed Lag (ARDL) bound test approach. The findings revealed that recurrent educational expenditure exhibited significant relationship with economic growth. At the same time, capital expenditure on education was insignificant. Generally, the study concluded that the impact of educational expenditure on real GDP is mainly a function of the expenditure type in Nigeria.

In Jordan, Abdulla and Evgeny (2018) examined the impact of fiscal policy on economic growth for the period 1990-2010. The study employed least squares method to test the study hypotheses. The study found that government expenditure, exports and government revenues have positive and significant impact on the Jordanian economic growth, and negative and significant impact on the Jordanian economic growth. The study found that external public debt has a negative but not significant impact on the Jordanian economic growth.

With the aid of generalized linear model, Udeze and Obi (2020) examine the impact of fiscal policy on urban unemployment in Nigeria spanning 1981 - 2018. The outcome of the study revealed that capital expenditure and government revenue have helped to reduce urban unemployment in Nigeria. However, recurrent expenditure and fiscal deficit did not exert significant influence on urban unemployment. Also, public debt reinforces unemployment in urban areas in Nigeria during the period under consideration.

Ovat (2020) examined economic well-being of the average Nigerians and by extension the overall health of the Nigerian economy through the misery index, in the face of economic policies articulated and executed in the country. Both descriptive and econometric methods were adopted. The outcome revealed that real economic growth and fiscal policy, have not been able to alleviate citizens' misery in Nigeria; thus overweighing the significant impact of monetary and trade policies in alleviating the misery of the Nigerians. The descriptive analysis which compares the standard of living in Nigeria with that of Malaysia and Singapore also revealed that while the standard of living in Malaysia and Singapore witnessed remarkable improvement, the one for Nigeria deteriorated especially from 2015 - 2018, thus confirming Hanke's ranking.

Atan and Effiong (2021) investigate the influence of government activities on inflation in Nigeria from 1991 to 2019. The study utilized the Augmented Dickey-Fuller unit root test, Bounds test for cointegration, and the error correction model. The results indicated that government activities do not propel inflation in Nigeria both in the long and short runs. The paper concluded that increased government expenditure in Nigeria is still needed as it is not

inflationary in nature. The reason for this is because the activities of government have not reached the 25% critical limit as set by Collin Clerk.

Anaele and Nyenke (2021) examined the effect of fiscal policy on misery index in Nigeria from 1981 to 2018. The fiscal policy variables such as capital expenditure, recurrent expenditure and external debt were used. Direct policy was coded zero (0) while indirect or market based policy was coded one (1). Misery index was measured by the sum of unemployment, inflation and lending rates less growth rate of real GDP per capita. This study adopted the ordinary least square method of regression analysis. From the results of the analysis, it was shown that capital expenditure, recurrent expenditure and external debt conformed to the Keynesian theory of government expenditure. That is, increase in government capital expenditure and recurrent expenditure reduced misery index in Nigeria in the current period. It implies that rising external debt in current period worsened misery index in Nigeria. The analysis further revealed that the fiscal policy alone under the current regime of market based policy performed poorly in tackling economic misery in Nigeria due to the fact that it is insignificant.

Olisaji and Onuora (2021) employed the econometrics technique of ordinary least squares to investigate the impact of fiscal policy on the growth of the Nigeria's economy spanning 2015 to 2019. The result revealed the existence of a positive and significant association between companies' income tax and growth of the economy. At the same time, an insignificant and negative association was observed between government expenditure and growth of Nigeria's economy.

MATERIALS AND METHODS

Study Design

This study used secondary data spanning 1985 to 2020. Annual time series data on misery index (the sum of unemployment, inflation, lending rates less GDP per capita growth rate), government capital expenditure, recurrent expenditure, total tax revenue, external debt and domestic debt were collected from the Statistical bulletin of Nigeria's apex bank and the country's Bureau of Statistics.

Model Specification

The research model for this study is founded on the explicit form of the Keynesian theory which made it clear that an increase in public spending will increase consumption, economic growth and employment thus leading to poverty and misery reduction. That is, $MI = f(FP)$ where MI is misery index and FP is fiscal policy variables (government capital expenditure, recurrent

expenditure, total tax revenue, external debt and domestic debt). This study also adapted the empirical model of Anaele and Nyenke (2021) whose model is presented thus;

$$MDX = f(GCEX, GREX, GEDT, DMV) \quad (1)$$

Where: MDX is misery index, GCEX is government capital expenditure, GREX is government recurrent expenditure, GEDT is government external debt and DMV is dummy variable.

However, following the theoretical underpinning with slight modification of equation (1); the model for this study is presented thus:

$$MI = F(GCE, GRE, TRE, EXD, DDT) \quad (2)$$

The linear form of equation (2) produced;

$$MI_t = \varphi_0 + \varphi_1 GCE_t + \varphi_2 GRE_t + \varphi_3 TRE_t + \varphi_4 EXD_t + \varphi_5 DDT_t + \varepsilon_t \quad (3)$$

Where; MI is misery index, GCE is growth rate of government capital expenditure, GRE is growth rate of government recurrent expenditure, TRE is growth rate of total tax revenue, EXD is growth rate of external debt, DDT is growth rate of domestic debt, ε is error term which denotes other variables not included in the model, t is the period of time and φ_0 is the intercept. The parameter estimates are expected to behave in line with $\varphi_1 - \varphi_5 < 0$.

Techniques of Data Analysis

Augmented Dickey-Fuller (ADF) unit root test, Johansen Co-integration test and Error Correction Mechanism (ECM) were used in this study as the main analytical techniques. Momentously, all the variables in the model were tested for stationary using the Augmented Dickey-Fuller unit root test procedure. Usually, the ADF test consists of estimating the following regression:

$$\Delta Y_t = M_1 + M_2 t + \delta Y_{t-1} + \sum \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad (4)$$

Where: Y is a time series, t is a linear time trend, Δ is the first difference operator, ε is a pure white noise error term, M_1 is a constant, M_2 and δ are parameters and $\Delta Y_{t-1} = (Y_{t-1} - Y_{t-2})$, $\Delta Y_{t-2} = (Y_{t-2} - Y_{t-3})$, etc. The number of lagged difference terms to include is often determined empirically, the idea is to include enough terms so that the error term in (3.3) is serially uncorrelated. In ADF, we test whether $\delta = 0$ (Gujarati & Sangeetha, 2007).

The study employed Autoregressive Distributed Lag Bounds testing method to co-integration developed by Pesaran and Shin (1999). Unlike other co integration test, bounds test is applicable irrespective of whether the variables included in the model are $I(0)$ or $I(1)$ or a mixture of those. However, the technique is not appropriate in the presence of $I(2)$ series. Therefore, before employing the Bounds Test it was necessary to test for the level of integration of all the variables of interest by using the ADF Test. The test to find out if the variables in this study are co-integrated or have long-run relationship was done by computing the Bounds F-

statistic (bound test for co-integration). The null hypothesis of no co-integration is rejected when the value of the test statistic exceeds the upper critical bounds value, while it is not rejected if the F-statistic is lower than the lower bounds value. Otherwise, the co-integration test is inconclusive. The Autoregressive Distributed Lag (ARDL) method was employed in order to capture the long-run as well as the short-run dynamic relationship among the variables. Therefore, the ARDL model is written as follows:

$$\begin{aligned} \Delta MI_{t,j} = & b_0 + b_1 MI_{t-1,j} + b_2 GCE_{t-1,j} + b_3 GRE_{t-1,j} + b_4 TRE_{t-1,j} + b_5 EXD_{t-1,j} + b_6 DDT_{t-1,j} \\ & + \sum_{i=1}^{n1} a_{1i,j} \Delta MI_{t-1,j} + \sum_{i=0}^{n2} a_{2i,j} \Delta GCE_{t-1,j} + \sum_{i=0}^{n3} a_{3i,j} \Delta GRE_{t-1,j} + \sum_{i=0}^{n4} a_{4i,j} \Delta TRE_{t-1,j} \\ & + \sum_{i=0}^{n4} a_{5i,j} \Delta EXD_{t-1,j} + \sum_{i=0}^{n4} a_{6i,j} \Delta DDT_{t-1,j} + \mu_t \text{ --- (5)} \end{aligned}$$

Where Δ is the difference operator, n is the optimal lag length, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6$ represent the short run dynamics of the model and $b_1, b_2, b_3, b_4, b_5, b_6$, are the long run elasticities and μ_t is the error term. ECM_{t-1} is the error correction term obtained from the co-integration model. The error coefficients (λ_1) show the rate at which the co-integration model corrects its previous period's disequilibrium or speed of adjustment to restore the long run equilibrium relationship. The coefficient of ECM is expected to be negative and statistically significant. A negative and significant ECM_{t-1} coefficient implies that any short run movement between the dependent and explanatory variables will converge back to the long run relationship.

RESULTS AND DISCUSSION

To avoid spurious regressions which may arise as a result of carrying out regressions on time series data, we first subjected the data to stationarity test by using the Augmented Dickey Fuller (ADF) tests. For detail result of the Augmented Dickey Fuller (ADF) tests, see Table 1.

Table 1: Unit Root Test (*E-Views 9.0 output*)

Variables	ADF Test	Critical Value @ 5%	Order of Integration
MI	-4.756902	-3.552973	1(1)
GCE	-6.696455	-3.552973	1(0)
GRE	-7.073687	-3.552973	1(0)
TRE	-10.35882	-3.552973	1(0)
EXD	-7.036652	-3.552973	1(0)
DDT	-6.927181	-3.552973	1(0)

Note: MI, GCE, GRE, TRE, EXD and DDT as earlier defined.

The stationarity test result presented in Table 1 reveals that at five per cent level of significance, GCE, GRE, TRE, EXD and DDT were stationary at level 1(0) as their respective ADF statistics are greater than 5 per cent critical values, while MI was stationary at first difference 1(1). Given that the variables were integrated of order 1(0) and 1(1). The requirement to fit in an ARDL model to test for long run relationship is satisfied.

Table 2: ARDL Bounds Test for Co-integration (*E-Views 9.0 output*)

Model		F-Statistic = 6.124782
MI= F(GCE, GRE, TRE, EXD, DDT)		K = 5
Critical Values	Lower Bound	Upper Bound
5%	3.12	4.25

The result of the ARDL bounds test for co-integration reveals that there is a long run relationship amongst the variables (MI, GCE, GRE, TRE, EXD and DDT). This is because the computed F-statistic of about 6.124782 is higher than the upper critical bounds at 5% critical value. This provided evidence to reject the null hypothesis of no co-integration at 5% significance level for the misery index model. Following the establishment of long-run co-integration relationship among the variables, the long-run and short-run dynamic parameters for the variables were obtained.

Table 3: Estimated ARDL Long Run Coefficients. Dependent Variable: MI ARDL (4, 3, 3, 3, 0, 2)

Regressors	Coefficient	t-Statistic	P-Value
GCE	0.811694	2.296960	0.0423
GRE	-0.712997	-2.254159	0.0456
TRE	0.233530	0.966633	0.3545
EXD	-0.042083	-1.175688	0.2645
DDT	0.047592	0.754712	0.4663

The estimated ARDL long run coefficients reveal that in the long run, government capital expenditure, total tax revenue and domestic debt have positive relationship with misery index. This outcome is not consistent with theoretical expectation in economics. Interestingly, recurrent expenditure and external debt have negative relationship with misery index. This outcome is consistent with theoretical expectation in economics. At the same time, government capital expenditure and government recurrent expenditure are statistically significant. This means that,

in the long run, if fiscal policy - capital expenditure and recurrent expenditure are well managed it will significantly help to reduce the misery index in Nigeria.

Table 4: Error Correction Representation for the Selected ARDL Model ARDL(4, 3, 3, 3, 0, 2)

Regressors	Coefficients	t-Statistic	P-Value
GCE	0.328844	4.748896	0.0006
GRE	-0.322695	-4.745354	0.0006
TRE	0.100235	1.790572	0.1009
EXD	-0.018942	-1.213979	0.2502
DDT	0.016497	1.258466	0.2343
ECM (-1)	-0.450120	-2.251681	0.0458
R-squared	Akaike info criterion	Schwarz criterion	Durbin-Watson stat
0.860411	7.963979	8.925868	2.123702
Adjusted R-squared			
0.606614			

Table 4 suggests that the dynamic model is a good fit. The reason is that the difference in predictors account for 86 percent of the overall disparity in the model looking at the R^2 . Put differently, the R^2 value of 0.860411 reveals that the variation in misery index explained by government capital expenditure, government recurrent expenditure, total tax revenue, external debt and domestic debt is 86 percent. Therefore, the explanatory power of the model estimated is 86 percent. The Durbin Watson (DW) value of 2.123702 suggests that the model is free from autocorrelation. The coefficient of ECM has the hypothesized negative sign (-0.450120) and is statistically significant at the conventional 5 per cent level. This shows it adjustment from short run equilibrium to long-run equilibrium in the dynamic model.

Furthermore, in Table 4, the coefficients of government capital expenditure, total tax revenue and domestic debt have positive sign. This means that a percentage increases in government capital expenditure, total tax revenue and domestic debt will increase misery index in Nigeria. The outcome is not consistent with theoretical expectations in economics. At the same time, the absolute values of the t-statistic for the slope coefficients of total tax revenue and domestic debt are not significant. This means that total tax revenue and domestic debt have not been well managed to reduce misery index in Nigeria during the period of study. Meanwhile, the absolute value of the t-statistic for the slope coefficient of government capital expenditure is significant. Therefore, if money budgeted or released for capital projects are well managed it will help to reduce misery index in Nigeria.

The coefficients of government recurrent expenditure and external debt have negative sign. The outcome is consistent with theoretical expectations in economics. This means that a percentage increase in government recurrent expenditure and external debt will reduce misery index. The above finding validates or corroborates the empirical work of Anaele and Nyenke (2021) who examined the effect of fiscal policy on misery index in Nigeria and reported that government capital expenditure and external debt have negative relationship with misery index in Nigeria. Strictly speaking, if the country incurs external debt on reasonable economic terms and invests it in viable projects, it is bound to benefit the economy by reducing misery index. In addition, the absolute value of the t-statistic for the slope coefficient of government recurrent expenditure is significant. The implication of this result is that government recurrent expenditure has impacted on misery index meaningfully (significantly) during the period of study. However, the absolute value of the t-statistic for the slope coefficient of external debt is not significant. What this suggests is that though external debt has a negative relationship with misery index, but it has lesser implication in reducing Nigeria's misery index meaningfully during the period of study. The above finding is not far from the truth, as some of the indicators of misery index including unemployment rate and inflation rate are high in Nigeria.

Post Estimation Diagnostic Test Result

The Wald test was applied to confirm if the coefficients of the causal variables in the ECM model are jointly significant. The F-statistic in Tables 5 was utilized to ascertain this.

Table 5: Wald Test Result (*E-Views 9.0 output*)

Wald Test:			
Equation: Untitled			
Test Statistic	Value	Df	Probability
F-statistic	6836.155	(6, 2)	0.0001
Chi-square	41016.93	6	0.0000

The result in Table 5 shows that the F-statistic is approximately 6836 and the probability value of 0.0001 is less than 0.05 at the conventional 5 per cent level. Therefore, all the independent variables used in the model are jointly important in explaining misery index in Nigeria during the period of study.

CONCLUSION AND RECOMMENDATIONS

It is incontrovertible that indicators of misery index including inflation and unemployment are enemies of the poor. For instance, high rate of inflation wipes out whatever meagre earning power the poor might have had. Unemployment, on the other hand, denies the poor of income which constitutes an important means of livelihood. The role of government in stabilizing the economy in order to rein in inflation and generate employment is therefore critical to poverty and misery index reduction effort. This study examined the impact of fiscal policy on misery index in Nigeria from 1985 to 2020. The study employed unit root test via Augmented Dickey Fuller test and Autoregressive Distributed Lag (ARDL) method.

The results revealed that government recurrent expenditure and external debt have helped to reduce misery index in Nigeria during the period of study. However, government capital expenditure and total tax revenue have not been effective in reducing misery index in Nigeria during the period of study. This may be because of mismanagement, corruption, embezzlement and inability of government to identify and eradicate all administrative loopholes for capital expenditure and tax revenue to contribute significantly to the reduction of misery index in Nigeria.

Based on these findings, the study recommended that government should give employment generation the policy centrality it deserves. This requires questioning before approval, the employment implication of contracts for capital projects in order to reduce unemployment and misery index. At present, this question is not being asked. Consequently, certain policies are put in place that are at best employment neutral or at worse destroy rather than create jobs. In addition, the managers of the Nigerian economy should ensure that aggregate tax revenues are efficiently used to make expenditures on housing, education, transportation, agriculture, health, power, road construction, national defense, among others that will help the various sectors of the economy to function very well thereby reducing unemployment rate and misery index in the country. To accomplish this, government should combat mismanagement, corruption and embezzlement of tax revenues and funds available for capital projects. Government should also detect and eradicate all administrative loopholes for aggregate tax revenues to contribute significantly to the reduction of misery index in Nigeria. Importantly, this study has made a significant contribution to knowledge in that it examined the impact of fiscal policy on misery index in Nigeria from 1985 to 2020. Furthermore, it is obvious that the subject matter of this study is by no means exhausted in this work. Therefore, further studies should focus on the impact of fiscal policy adopted by Nigerian government on separate indicators of misery index.

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