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The impact of stabilization policies on human development index in Nigeria

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Abstract

This study is motivated by the sustained unimpressive ranking of Nigeria's Human Development Index in the annual global Human development report by UNDP over the past four decades. The situation is worrisome because low human development index reflects poor health outcomes, deterioration in educational system, and an abysmal standard of living that is significantly below globally acceptable thresholds with about 133 million persons considered as multidimensionally poor in Nigeria. The persistence and recurring decimal of unsteady growth rate and low HDI scores have called to question the effectiveness of stabilization policies broadly categorized as monetary policy and fiscal policy and designed to chart a course for stimulation of overall economic performances, macroeconomic recoveries and most importantly, optimization of the general welfare of the people. Therefore, the study empirically evaluates the impact of stabilization policy toolkits on human development index in Nigeria. To this end, annual time series secondary data from 1990 to 2021 were sourced from Central Bank of Nigeria Statistical Bulletin and UNDP Global Human Development Reports for various years within the review period. The study employs Autoregressive Distributed Lag (ARDL) estimation technique in line with the fulfilment of mixed order of integration from the ADF unit root test. The results of our empirical analysis revealed that Government Expenditure (GEX) and Tax Revenue (TRE) have positive and statistically significant relationships with HDI in Nigeria. Also, with the impact of Broad Money Supply (BMP) being positive and statistically significant, Monetary Policy Rate (MPR) and inflation rate (IFR) have negative impacts on HDI but are statistically significant in explaining variations in HDI within the review period. Therefore, the study concludes that each stabilization policy is crucial in improving HDI, but fiscal policy appears to be more potent in comparison. The study recommends reassessment of government expenditure architecture to accommodate public works; tax policy reforms that will guarantee sustained tax revenue; and extended regulatory framework that will decongest the magnitude of cash in the shadow economy to curtail the menace of inflationary shocks.

Keywords: Stabilization Policies; Monetary Policy Rate; Government Expenditure; Human Development Index

1. Introduction

Governments of countries all over the world are pre-occupied with finding plausible solutions toward ensuring not just economic growth, but sustainable development that translates to improvement in the standard of living of the people. To this end, concerted efforts have been, and are still being made to look beyond the economic growth performances of countries, and re-direct attention to the design and effective implementation of potent public stabilization policy thrusts that will reflect positively in the lives of the people. According to Sen and Anand (1994), income and goods are insufficient measures of standard of living of the people since they only reveal the life expectations of individuals. Ul Haq, (1995) advocated application of human-centered development and income policies that consider the life quality of the bottom layer of the society. Earlier studies including that of Sen (1999) had highlighted human capabilities, and the basic essence of welfare and development in the context of freedom encapsulated in freedom from servitude; freedom to take decisions and make choices; self-esteem and provision of basic life sustaining needs. Kızılkaya, Koçak

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and Sofuoğlu (2015) viewed it in the perspective of widening the scope of effective assessment of the welfare of people in a country to other indicators outside economic growth and income.

To this end, various indictors, and indices for the measurement of social welfare had been advanced, each with its advantages and shortcomings. Ali, Raza, and Yousuf, (2012) listed gross national income per capita as a measure of standard of living; Purchasing Power Parity (PPP) as a measure of the cost of living and welfare; average year of schooling, school enrolment rate and health expenditures as a percentage of GDP to capture this composite welfare and development indicator among others. In a bid to have a global reporting standard acceptable to all, the United Nations Organization through one of its agencies – United Nations Development Programme (UNDP) worked on and published the first human development report in 1990. This report containing the human development indices of participating countries has become the most widely accepted measure of welfare. According to Anand, and Sen (1994), to have income and goods is not enough for people since income and goods are just tools and do not reveal the life expectations of individuals. For this reason, it is not enough to regard income as a significant measure of standard of living without putting other factors into consideration. Omotor, Ajakaiye, and Orubu (2019) stated that in development literature, beneficial growth is one that leads to development, and should be reflected in reduced unemployment, poverty reduction and reduced inequalities. They further stated that for growth to maximize total social welfare, it must be truly inclusive. This was corroborated by Kuhumba (2018) when he viewed Amartya Sen's Human Capabilities Approach to 'Ubuntu Philosophy.'. A philosophy that extols enhancement of individual freedom and involves two core normative claims, namely: the assumption that freedom to achieve well-being is of primary moral importance, and secondly, that freedom to achieve well-being must be understood in terms of people with capabilities.

Human development is the development of society and all its institutions, and to guarantee development, economic and social infrastructures need to be developed as well. According to Doryan (2001), provision of better education and health services by the government in addition to effective institutional framework, will increase human capital accumulation and propel the economy on the platform of growth in the long run. In the context of the need to deepen global inclusiveness and maximum social benefits, global development programmes like Millenium Development Goals of 2010; Sustainable development Goals of 2015, and other environmental protection initiatives like Climate Change were established with commitments from governments to see to their full implementations. While some governments, particularly, in developed economies have been fully committed to achieving the objectives of these goals within set timelines, governments of transitioning economies have continued to struggle to keep with the pace of the required policy formulation and implementation. This further highlights the significant role of government in charting a course for human development through effective design and implementation of vibrant and dynamic stabilization policies in the forms of fiscal and monetary policies (Ikediashi, Orubu & Awogbemi, 2023), to align with global standards. These policies are used in furtherance of the viewpoints of Keynesian economics that underscores the role of government in stimulating economic activities and development through government spending and tax decisions; as well as the viewpoints of classical economics and the monetarists with respect to the role of monetary aggregates and other monetary measures in ensuring price and financial stability that catalyzes growth process through effective regulatory control and compliance. The dual functions of monetary and fiscal policy implementation are performed by government bodies operating within the same country. Therefore, for long-term growth performance, government expenditures improve human capital, cause accumulation of physical capital, and positive externalities (Kızılkaya, Koçak & Sofuoğlu, 2015). Similarly, the need to gauge recklessness in fiscal operations that will expose the economy to the ills of inflation and its associated negative multiplier effects has made the role of monetary authority acutely necessary. Therefore, within the framework of this viewpoints, government stabilization policies, particularly, monetary and fiscal policies, provide useful insights on how institutions are strengthened, and resources are translated into socio-economic gains, human development and welfare maximization, particularly, in transitioning economies of the world.

In sub-Saharan Africa, Nigeria, which is the focal point of our study, is one of the most populous countries with a population of over 200 million; active labour force of about 90% of the population; rich natural deposits and GDP values of about $441 billion and $477.38 billion in 2021 and 2022, respectively, considered as one of the highest in sub-Saharan Africa (IMF, 2021). However, these positive outlooks are noticeably unreflective in the standard of living of the people. This is evident in the in the last National MPI report that considered 63% (133 million) of the population as being multidimensionally poor (NBS, 2022), with Human Development Index (HDI) score of 0.535 classified as low just like most countries in sub-Saharan Africa (UNDP 2021). These poor indices have been largely attributed to policy gaps, or poor implementation of such policies where they exist.

Stiglitz (2015) established a linkage between policy issues and human development, and highlighted how policy can either mitigate or exacerbate the inequality consequences of economic downturns since some well-intentioned policies can sometimes be counterproductive as observed in developing countries. In the light of this, the nature and structure of monetary and fiscal policy gaps manifested in recurring deficit budgets and policy inconsistences and

changes include but is not limited to poor structure of government spending, high debt profile with huge debt service burdens, political interference, fiscal dominance, and lack of accountability and transparency in the distribution and allocation of resources due to corruption. These factors have led to avoidable fiscal crises and policy maladjustments over the years and have continued to constrain every people-oriented initiative not just in Nigeria, but Africa as whole. In specific terms, out of about N13.5 trillion budgetary expenditure in 2021, N4.3 trillion was set aside for capital expenditure and N5.64 trillion on recurrent expenditure (Kalajaiye, (2022), BusinessDay, June 2022). Also, while the capital expenditure budget **of** N4.89tn in 2022, represents an increase of about 18% compared to the 2021 position, recurrent expenditure was N6.9 trillion**,** representing 62% of the items within the total budgetary expenditure (BusinessDay, January 2022). Also, 8.4% and 6.5% of the values of the national budgets allocated to education in 2020 and 2021, respectively, are significantly low compared to the recommended 15% by UNESCO (IMF Report, 2021). Equally disturbing is the fact that our current borrowing spree disturbingly justified by sustained annual budgetary gaps has become dead weight and a militating factor to development with **our** debt service to revenue ratio of 98% between January and May 2021. The resultant effect is the gap in social infrastructure that has been largely responsible for Nigeria's low HDI over the past three decades, even with periodic but staggered increase in GDP growth rates. This is evident in low life expectancy at 55.12 years (UNDP Report, 2021); low standard of living, as well as poor educational system with about 20 million out-of-school children (IMF Report, 2021). These poor statistics led to the poor rating of Nigeria as the 161st on the global HDI index in 2021, with the ranking expected to degenerate further in the coming years in the face of lack of poor development plans; and improvement in our public policy formulation and potent implementation.

In conjunction with fiscal operations, the transmission mechanism of monetary aggregates and tools are targeted at stimulating macroeconomic recoveries, strengthening exchange rate stability, maintaining internal balances, and stabilizing price and financial markets among others. To achieve these objectives, monetary policy toolkits like open market operations (OMO); statutory reserve requirements through the use of cash reserve ratio (CRR) and liquidity ratio (LR); monetary policy rate (MPR), inter-bank rates, quantitative easing among others are variously used depending on the prevailing economic situation in the country. However, despite the use of these toolkits, the regulatory authority in Nigeria has not been able to mitigate the rising trend in inflation and unemployment rates. Between 2020 and 2021, unemployment figures were at 33.2% and 33.3%, respectively (NBS Report, 2021), and i**nflation** rate soared from 14.89% in 2020 to 16.95% in 2021 and 18.85% in 2022 with tendencies of spiraling more as overall economic activities continue to plummet, helplessly. This is despite the continued contractionary stance of the regulatory authorities with MPR at average double digit of 11.50% over the past two years (CBN Report, 2020), and 18.75% in July 2023.The effect of double-digit interest rate in suppressing investments and aggregate demand is further cascaded down to credit-seeking economic agents like individuals and firms. This is because high interest rates in a slow growth economy like Nigeria constrains credit access needed to stimulate economic activities and output growth because it stifles productivity and stagnates employment with the consequent effect of widening the gap of income inequality and social exclusiveness.

It is, therefore, not in dispute that stabilization policies in the forms of fiscal and monetary policies are central to the improvement in general welfare and growth of every economy. However, the identifiable cases of recurring decline in various growth indices, particularly, human development and multidimensional poverty indices, as well as the persistence of other socio-political and macroeconomic conundrums have raised multiple questions on the effectiveness of stabilization policies in improving welfare in Nigeria. It is in the context of the persistence of these problems, and the need to re-evaluate and rejig the knowledge gap in their design and implementation processes for maximum social benefit that this study is carried out.

1.1. Statement of the Problem

The Nigerian economy has been constrained by several challenges over the past decades due to failure to harness her economic potentials for rapid economic development (Saqib & Aggarwal, 2017). This is evident in our unimpressive socio-political global statistics in corruption perception index, educational index, poverty index, and most importantly human development index, which is critical in advancing the course of general welfare and socio-economic lives of the people.

1.2. Rationale of the Study

In the development economics literature, there is consensus on the importance of stabilization policies and institutions in stimulating economic performance and development. However, there is a coefficient of knowledge gap in the evaluation of the welfare impact of stabilization policies in Nigeria, which this study targets to address.

Objectives of the Study

This study aims to broadly evaluate the impact of stabilization policies on human development index in Nigeria. More specifically, the study aims to:

- Determine the impact of fiscal policy on human development index in Nigeria.
- Evaluate the impact of monetary policy on human development index in Nigeria.
- Analyze the impact of inflation rate on human development index in Nigeria.

1.3. Research Hypotheses

- Ho1: Fiscal policy does not have significant impact on HDI in Nigeria.
- Ho2: Monetary policy does not have significant impact on HDI in Nigeria
- Ho3: Inflation rate does not have significant impact on HDI in Nigeria

2. Review of Related Literature

2.1. Conceptual Issues on Stabilization policies

Stabilization policies are various measures taken by the government to stimulate economic activities and cushion the effect of hardship through various incentives and palliatives to the people. They come in various forms, particularly, in the forms of monetary policy, fiscal policy and other policy interventions by the government. Keynes (1936) introduces stabilization policy as a key process to stop or prevent erratic movements and surges in the prices of goods in an economy. They identified the need for stabilization policies as critical tool for economic recoveries during periods of financial shocks; and as measures to prevent deflation and inflationary movements in an economy. In the works of Moshin and Malcom (1981), they disaggregated stabilization policies into business cycle stabilization and credit cycle stabilization. They stated that, in either case, they are tailored to elimination of disequilibrium in aggregate demand and supply chains, and as reactionary discretionary policies to macroeconomic shocks.

Friedman, Schwartz, & Bemstein, 2012), stated that stabilization policy generally leads to healthy levels of employment. This implies that they are useful tools in bridging income inequality and improving the means of livelihood of the people. They can also come as direct interventions to cushion the effects of hardship, natural disaster or as palliatives particularly during global contagion as experienced in 2020. Generally, the objectives of stabilization policies are diverse and include but not limited to reduction in inflation rate, improvement in balance of payment, employment generation, stimulation of economic activities, as well as other life-sustaining needs of the people reflected through coordinated government spending and fiscal programs. Though, the positive impact of stabilization policies in Nigeria are hampered by a number of factors such as governance issues, lack of policy directions on the part of government, corruption, time lag effect and periodic change in policies, as well as high borrowing cost and financial crises among others, they have remained indispensable tools in stimulating economic activities and improving human development, globally.

2.1.1. Monetary Policy

These are various measures used by the Central Banks of most countries of the world to control the volume of money stock in the economy with the aim of stabilizing prices, controlling inflation and economic growth. Monetary policy stabilization measures help to stimulate economic activities without significant fluctuations in inflation, interest rate and unemployment. This is because large fluctuations in unemployment and inflation are critical macroeconomic problems in Nigeria that must be curtailed as the government strives towards attainment of both Millenium and Sustainable Development Goals. Critical among the transmission tools of the Central Bank are the use Monetary policy rate, statutory reserve requirements and OMO to keep inflation in check. Development literature has identified low inflation and unemployment rates as critical tools in improving the standard of living of the people.

2.1.2. Fiscal Policy

Fiscal policy refers to the use of government spending, tax policies and borrowing to stimulate economic activities in the country and improve the general welfare of the people. Ali, Raza, and Yousuf, (2012) affirmed that fiscal management plays a vital role in attaining the objective of economic and human development through the use of public spending in provision of goods and services that increase social welfare, reduce inequality and other constraining factors to development. Amakom (2010) suggested that expenditure in the improvement of literacy rate and providing better health facilities could help to eradicate poverty and promote welfare in the economy. In addition to the dominant

tools and channels of government spending and taxation, other fiscal policy tools include public debt; fiscal stimulus and operations; national budget, loan conditionalities, subsidies and palliatives among others.

2.1.3. Measurement and Trend of Human Development in Nigeria

In the face of various indices of measuring human development, the United Nations Development Programme (UNDP) offered an alternative and more comprehensive way of measuring human development using Human Development Index (HDI) in 1990. In their report, human development index is calculated by measuring various social indicators related to education, health, and income in various units between the threshold of 0 to 1 (UNDP, 2010: 216). The closer the index is to 1, the higher the human development and magnitude of welfare in the country would be. Therefore, HDI is the arithmetic average of a country's achievements in three basic dimensions of human development. That includes longevity (measured by life expectancy at birth); educational attainment (measured by a combination of the adult literacy rate and the enrollment ratio in primary, secondary, and tertiary education); and living standards measured by GDP per capita at purchasing power parity (Cashin, Mauro & Sahay, 2001. Also, Ghislandi, Sanderson, and Scherbov (2019), stated that the motivation behind the production of HDI was that economic magnitudes alone provided a narrow basis for assessing human development. They stressed that HDI represents a compromise between comprehensiveness and measurability, and that the level of human development is conceptualized as having three components: health, education, and economic conditions. These are, however, quantified at the country level using four indicators: life expectancy at birth, mean and expected years of schooling, and the logarithm of Gross National Income per capita (PPP)

As earlier stated, HDI has come to stay as a global measure for evaluating long-term progress in the identified three dimensions of human development, and the annual Human Development Report (HDR) helps to ascertain which of the least developed nations in the world is in urgent need for assistance. This report has become consistent since its commencement in 1990 with a wide range of global acceptability from participating countries that cut across developed and developing economies including Nigeria in sub-Saharan Africa. Therefore, a review of the trend of HDI figures for Nigeria over the period shows that the lowest HDI position was 0.423 in 2010 and the highest was 0.539 obtained between 2019 and 2020. Going by the UNDP categorization, the highest value of 0.539 falls within the category of countries with low HDI and this has been the trend over the years, and equally indicative of low outcomes in the three dimensions of HDI in Nigeria.

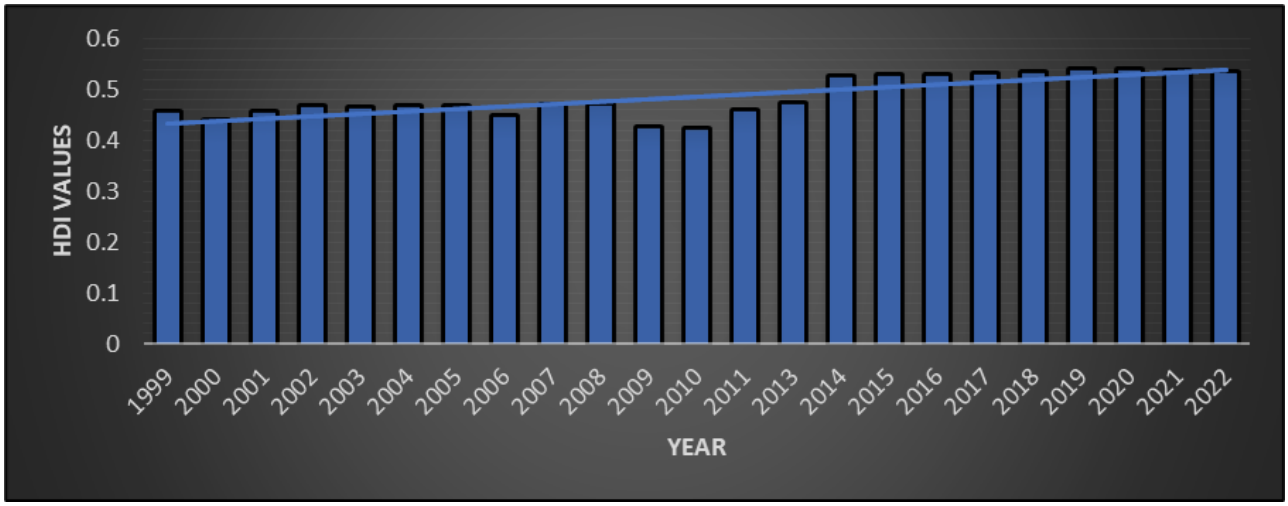

Figure 1 Trend of Nigeria's HDI figures prepared from available data produced by UNDP HDR within the period.

Scores in figure 1 above shows that HDI in Nigeria increased from 0.47 score in 2006 to 0.54 score in 2020. This represents average annual growth of 0.89%. The country's HDI value for 2021 was 0.535 points, which is considered as low human development index. Though, the value increased by 15.9% between 2005 and 2019, the values of 0.539, 0.535 and 0.534 for 2019, 2021, and 2022, respectively, still fell within the global low HDI category. This is reflective in Nigeria's consistent low ranking from 146 in 1999 to 159 in 2009 and further down to 163 in 2022. These worrisome rankings beg the question of the effectiveness of the use of stabilization policy instruments in stimulating economic activities and improving the general welfare of the people.

2.2. Empirical Review

Governments all over the world are saddled with the responsibility of a reasonable rate of growth, equitable distribution of income, and improvement in standard of living of the people. The need to achieve these goals has led to the design of various stabilization policies in form of monetary and fiscal policies whose effectiveness in stimulating economic growth and social welfare has triggered various studies in both developed and developing economies.

Dauda and Iwegbu (2022) investigated how human development responds to selected macroeconomic shocks in Nigeria. The study employed the Sen's capabilities approach as the analytical approach and posited that the level of education, health status, quality of investment, technology, and government fiscal and monetary policies are plausible determinants of human development. Using the Structural Vector Autoregression (SVAR) to estimate the responses of inflation, interest rate, government capital expenditure, exchange rate, current account balance, and savings shocks; as well as Forecast Error Variance Decomposition (FEVD) and the Impulse Response (IR), the result revealed that fiscal policy shock is the major factor influencing human development outcomes, even though HDI reacts positively to interest rate shocks. The study concludes that human development is negatively affected by a sudden decline in the federal government's capital budget expenditure.

Iddrisu, Andani, and Abor (2022) empirically examine the effect of monetary policy effectiveness on human development in Africa using both micro-bank level and macro-country level data sourced from Fitch/IBCA/Bureau Van Dijk. Series for a sample of 320 banks across 29 African countries for the period 2002 to 2013. The test suggests that high banks' pricing induced by effective monetary policy tends to increase human development, with a net effect result reflecting the opposite. Similarly, Ekomane (2021) in his work on how monetary policy is transmitted to HDI in Cameroon sourced for data for the period 1990 to 2015 from World Bank, BEAC and UNDP. Using conventional structural Autoregressive methodology, the results reveal that HDI reacts significantly to monetary policy impulses in a two-year delay period through two channels: the income-consumption channel and credit-consumption channel, while inflation rate has a negative effect on HDI.

Mustafa (2020), through a regression model, highlighted the role of the banking finance and monetary policy in enhancing human development index (HDI) in Sudan during the period (1999-2018). The study used descriptive analytical approach and secondary data sourced from annual reports of the Central Bank of Sudan, World Bank and UNDP database. Using Inflation rates as an indication of the efficiency of monetary policy, the results revealed that money supply induced a positive relationship between HDI and inflation during the period. The study recommends the commercial banks in Sudan should expand granting credit to the various economics activities especially the production sector to stimulate aggregate demand, increase employment and standard of living.

Ogbebor, Oguntodu and Oyinloye (2020) evaluated the impact of inflation on standard of living in Nigeria proxied by Human Development Index (HDI) between 1998 and 2017. The study implored the use of Auto Regressive Distributed Lag (ARDL) Model in addition to other critical diagnostic tests. The result of the study shows the existence of long run relationship between inflation and HDI. The result further revealed that inflation has a negative but statistically significant relationship with HDI in Nigeria within the study period. In a similar study by Osiakwan (2013) in Ghana, the result revealed that inflation has negative and significant effects on the standard of living in Ghana, and the adverse impact of inflation on standard of living increasingly worsened as inflation increases. In a similar study by Naz, Chaudhry, Hussain, Daraz, and Khan, (2012), they stated that inflation can disrupt business planning, nutrition, health and children's education.

Arotiba and Omankhanlen (2021), undertook an investigation into the impact of monetary policies on the economic development in Nigeria proxied by human development indicator between 1991 and 2020. In the study, exchange rate, interest rate and inflation rate were used as proxies for monetary policy, and annual data for the analysis were sourced from World Bank Statistical Bulletin. By using the Autoregressive Distributed Lag (ARDL) methodology, the study found that interest rate impacted positively and negatively on HDI in the long and short runs, respectively, while exchange rate had an insignificant and positive influence on economic development in the short run and long runs. The study concludes that government should focus on setting monetary policy rates that will attract investment and bring about an improvement in the welfare of the people.

Amakom (2010) suggested that expenditure in the improvement of literacy rate and providing better health facilities could help to eradicate poverty in the economy by using the welfare dominance test. He concluded that primary education was progressive for male and female in Nigeria. This was corroborated by Gupta, Clements, and Tiongson (1998) who studied data from 1980 to 1995 of 118 transitioning and developing economies in the world to establish the nexus between economic growth and human development. The result of their study revealed that real health per

capita, and education per capita expenditures increased on average in developing countries unlike in transitioning economies. The study concludes that spending on primary education and health accelerates human development, and the benefits of social expenditure are distributed more fairly in most countries.

Kizilkaya, Koçak, and Sofuoğlu, (2015) empirically investigated the impact of taxes, government expenditures, income and infrastructure (electricity consumption) on the human development from the period of 1998-2007 for 14 OECD countries. Panel unit root, panel cointegration, panel FMOLS, panel DOLS and panel vector error correction-based causality methods were used in the study. According to panel FMOLS results, while taxes have negative impacts on human development, government expenditures and income have a positive impact on it. The results of panel DOLS, however, shows that income and taxes are not statistically significant. Causality test results show that in the long term, there are causality relationships from taxes, government expenditures, electricity consumption and income to human development.

Gomanee, Morrissey, Mosle and Verschohoo (2005) examined the relationship between government aids and level of welfare represented by infant mortality rates and human development index indicators for 104 low-income and middle-income countries from 1980-2000. The paper concluded that while government aids increase level of human development, infant mortality decreases it. Also, by employing quintile regressions, they discovered that the negative link between poverty alleviation and aid depend on higher HDI values. Also, Suescun (2007) examined the impact of government expenditures on human development in 15 Latin countries and concluded that government expenditures affected economic growth, welfare, human development, and social progress in a positive manner. They, however, stated that infrastructure expenditures had more effects on development compared to other government expenditures (education, health, transfers, etc.). With respect to consumption expenditure, Davies (2009) examined data belonging to 154 countries for the period 1975-2002 in order to analyze the relationship between government consumption spending and human development index. The result revealed that government consumption spending effected the human development in a positive manner.

Ali, Raza and Yousuf (2012) investigated a study about impacts of government expenditures and democracy on human development. According to the results of the study, while an increase in income per capita and education spending has positive effects on human development, current expenditures have negative effects. Additively, according to the study, democratic regime has a negative impact on human development.

Nwakanma and Nnamdi (2013) examined the relevance between taxes and human development in the period 1970-2010. According to the results of the paper, while petroleum tax, income tax and consumption tax have positive relationships with human development, corporate tax has a negative relationship with it. Other studies such as Heitger (2001) examined 21 OECD countries and found that there was a negative connection between total public spending and economic growth from 1960 to 2000, while studies such as Alfranca and Galindo (2003) and Kelly (2007) concluded that public spending affected growth in a positive manner.

Generally, most of the studies reviewed above concentrated on the impact of fiscal policy on growth and HDI, while others evaluated the impact of monetary policy on HDI, However, only very few empirically investigated the joint impact of both stabilization policies – monetary policy and fiscal policy particularly in Nigeria. Therefore, this study is aimed at finding empirical support for the joint impact of monetary and fiscal policies on human development index in Nigeria.

2.3. Theoretical Framework

The theoretical foundation stems from the age-long debate between the monetarists and Keynesians on the roles of money and government spending in stimulating growth and improving welfare. These viewpoints were further extended by Amartya Sen's Capabilities Approach and Endogenous Growth Theories as briefly summarized below:

2.3.1. Amartya Sen's Capabilities Approach

Amartya Sen, in his book 'Development as Freedom' based on his World Bank Fellow Lectures in 1996 on welfare economics argues that 'development' should be viewed not in terms of economic measures (e.g., GDP growth, average annual income) but in terms of the real 'freedoms' that people can enjoy such as economic facilities and social opportunities. The book collates multidisciplinary insights that explains human freedom as both the primary end objective and the principle means of development, while economic measures are the means to this end. Sen (1996), therefore underscored the need to abolish 'unfreedoms' such as poverty, famine, starvation, undernourishment, tyranny, poor economic opportunities, systematic social deprivation, neglect of public facilities, intolerance, and over-activity of repressive states through various economic measures. In Amartya Sen's Capabilities Approach, development is seen as the need to elevation an entire society and its social system toward a "better" or "more humane" life beyond

economic growth to improvement in the general welfare of the people and expansion of the range of choices for societies and their members, particularly in the areas of health, education and standard of living. This perspective is further deepened by the endogenous growth theory that advocates the influence of internal processes mirrored in human capital development in sustaining the rate of prosperity, healthy, and knowledge-based nation with spillover effects from investment in technology.

3. Research Methods

3.1. Research Design

This article adopts the Ex-post facto research design. It is a quasi-experimental research design that is used when it is impossible to manipulate the exposure and influences that may affect the result of the study.

3.2. Nature and Source of Data.

To this end, secondary time series data sourced from the Central Bank Statistical Bulletin and UNDP Human Development Reports from 1990 to 2021 were used for this study. The choice of this period is apt as it covers relevant periods in Nigeria's socio-political and economic history with a mixture of high and low points.

3.3. Model Specification

The model specification stems from the works of Andersen and Jordan (1968) in the popular St. Louis equation as an extension of the age-long debate between the Keynesians and monetarists. Further modification of the model was carried out to provide suitable framework for achievement of the objectives of the study. Therefore, the modified model is expressed below:

$$HDI = (SP\ C) \quad \ldots\ldots\ldots\ldots (3.0)$$

Where HDI stands for human development index (a measure of welfare); SP is a proxy for fiscal policy and monetary policy and C stands for control variable – inflation rate.

We expand the scope of equation 3.0 with selected fiscal policy variables such as GEX (Government expenditure) and TRE (Tax Revenue); and Monetary policy variables such as (BMP (Broad money supply) and MPR (monetary policy rate

$$HDI = f\ (GEX, TRE, BMP, MPR, IFR) \quad \ldots\ldots\ldots\ldots (3.1)$$

Expression of equation 3.1 in its functional form is written below:

$$HDI_t = \beta_o + \beta_1 lnGEX_t + \beta_2 lnTRE_t + \beta_3 lnBMP_t + \beta_4 MPR_t + \beta_5 IFR_t + \mu_t \quad \ldots\ldots\ldots\ldots (3.3)$$

Where,
β_0 - Constant parameter
β_1 - β_5= Coefficients to be estimated
μ - Error term
ln – Logged values of the affected variables.

Other parameters remain as previously defined.

3.4. Variable description and measurements

Table 1 Description of Variables and Measurements

S/N	Variable	Source	Definition	Measurement
1	Broad Money Supply (BMP) (Regressor)	CBN (2021)	M2 the value of narrow money comprising coins and currencies as well as near money items and short-term tenured deposits, while M3 includes M2, large time deposits, institutional money market funds, and short-term repurchase agreements. The	They are aggregated values of annual averages of M2 figures from 1999 to 2010, and M3 figures from 2011 to 2021.

			higher the value the greater the ability if banks to create credit	
2	Monetary Policy Rate (MPR) (Regressor)	CBN (2021)	It is the rate fixed by the Monetary Policy Committee of the CBN on monthly basis. It helps to influence the evolution of the main monetary variables.	Measured by the average value of monthly MPR figures as computed by CBN
5	Total Government Expenditure (GEX) (Regressor)	CBN (2021)	The sum of total Government expenditure in a year made up of capital and recurrent expenditures. Forms the basis upon which economic activities are stimulated and public works executed.	Measured from the aggregate values of recurrent and capital expenditures as contained in annual budgetary figures.
6	Total Tax Revenue (TRE) (Regressor)	CBN (2021)	It is the total amount of tax revenue generated from various tax units in a year. The value reflects the tax policy adopted by the government and determines the spending power of the government	Extracted from tax figures reported by FIR in conjunction with CBN
8	Human Development Index (HDI) (Dependent Variable)	UNDP HDR (2022)	A summary measure for assessing sustainable progress in three basic dimensions of human development namely: long and healthy life, education, and standard of living	living. Health is measure by life expectancy; education by expected years of schooling; and standard of living by gross national income per capital. Values range from 0 to 1
9	Inflation Rate (IFR) (Regressor)	CBN/NBS	Inflation is the rate of increase in prices over a given period of time. Uncontrolled inflation is harmful to growth and welfare maximization	The value of the CPI is used as a proxy for inflation rate (IFR) being that CPI measures the average price change of a basket of selected goods and services over some period of time .

Source: Autor's compilation

3.5. Estimation Techniques

3.5.1. Pre-Diagnostic Tests

Unit root test

The study adopts the use of Augmented Dickey-Fuller(ADF) test to ascertain the stationarity status of the time series data (Dickey and Fuller, 1979).

ARDL Bound Cointegration Test

The study adopts ARDL Bound Cointegration Tests to ascertain if the variables are cointegrated, as well as to determine their long-run relationships (Uko and Nkoro, 2012). There exists various cointegration tests like Johansen and Juselius (1990); Gregory and Hansen (1996) among others in economics literature.

3.5.2. Autoregressive Distributed Lag (ARDL) Approach

As documented by Uko and Nkoro, 2012, and Pesaran, Shin and Smith (2001), the ARDL approach is efficient in analyzing distributed time lag effects of changes in the economy, and flexible particularly with small sample size. The ARDL expression of 3.3 is written below:

$$\Delta HDI_t = \beta_o + \sum_{i=0}^{j} \boldsymbol{\beta}_1 \Delta HDI_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_2 \Delta \ln GEX_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_3 \Delta \ln TRE_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_4 \Delta \ln BMP_{t-1}$$

$$+ \sum_{i=0}^{j} \boldsymbol{\beta}_5 \Delta MPR_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_6 \Delta IFR_{t-1} + \beta_1 HDI_{t-1} + \beta_2 \ln GEX_{t-1} + \beta_3 \ln TRE_{t-1}$$

$$+ \beta_4 \ln BMP_{t-1} + \beta_5 MPR_{t-1} + \beta_6 IFR_{t-1} + \mu_t \ldots\ldots\ldots\ldots (3.4)$$

Where:
Δ is the difference operator,
i's and j's represent the lags, and
β_1- β_6 are coefficients to be estimated

Other parameters remain as previously defined in equation 3.3.

Enders, (2014) stated that to integrate the speed of short run adjustments with long run equilibrium without losing long run information, equation 3.4 above is subjected to linear transformation to the Error Correction Mechanism as expressed below:

$$\Delta HDI_t = \beta_o + \sum_{i=0}^{j} \boldsymbol{\beta}_1 \Delta HDI_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_2 \Delta \ln GEX_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_3 \Delta \ln TRE_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_4 \Delta \ln BMP_{t-1}$$

$$+ \sum_{i=0}^{j} \boldsymbol{\beta}_5 \Delta MPR_{t-1} + \sum_{i=0}^{j} \boldsymbol{\beta}_6 \Delta IFR_{t-1} + ECM_{t-1} + \mu_t \ldots\ldots\ldots (3.5)$$

Where:

ECM_{t-1} denotes the speed of short-run adjustment to equilibrium in the long-run that must be negative and statistically significant, and other parameters are as previously defined.

3.5.3. Post Diagnostic Tests

In fulfillment of the basic assumptions of OLS, various post diagnostic tests such as serial auto correlation test; normality test; heteroscedasticity test and model misspecification test using RAMSEY RESET Test are caried out.

4. Results and Discussion

4.1. Unit Root Test

The results of the ADF unit root test are shown in table 4.1 below:

Table 2 Summary of ADF Unit Root Test Results

Variables	ADF Test stat. @ level	Critical values @ 5%	ADF test stat. @ first diff.	Critical values @ 5%	Order of Integration	Prob.
HDI	-4.2121**	-3.0731	-	-	I(0)	0.0102
lnGEX	-3.5605	-3.6025	-4.0082**	-3.5001	I(I)	0.0135
lnTRE	-3.6852	-3.8526	-5.8753*	-4.0251	I(I)	0.0011
lnBMP	-3.9071*	-3.0012	-	-	I(0)	0.0019
MPR	-3.2711	-3.8812	-5.2525*	-3.9929	I(I)	0.0075
IFR	-4.9906**	-3.8521	-	-	I(0)	0.0119

Source: Authors Computation using E-views; Note : * and **represent significance at the 1% and 5% critical values, respectively

The result of the ADF stationarity test in table 2 above shows that HDI, BMP, and IFR are stationary at level and integrated of order 1(0), while GEX, TRE, and MPR are stationary at first difference and integrated or order 1(1). The above results indicate mixed order of integration and qualify the use of ARDL approach for the analysis of the data in line with the recommendation of Pesaran, Shin and Smith, (2001).

4.2. ARDL Bounds Test for Cointegration

Following the result of the unit root test above with mixed order of integration, we implored the use of Bound Cointegration test to ascertain the existence of long run relationship among the variables.

Table 3 Summary of ARDL Bound Cointegration Test Result

Dependent Variable – HDI		
Levels	**Bounds**	**Critical Values**
10%	Lower bound I(0)	4.11
Level	Upper bound I(1)	3.05
5% Level	Lower bound I(0)	2.99
	Upper bound I(1)	4.59
2.5% Level	Lower bound I(0)	3.58
	Upper bound I(1)	2.52
1% Level	Lower bound I(0)	2.98
	Upper bound I(1)	4.55
F-Statistics ARDL (1,2,1,1,2,2,1)		6.88*

Source: Authors Computation using E-views; Note : * represents significance at the 1% critical value.

The results in table 3 above shows that the computed F-statistic- 6.88 is greater than the upper level of bounds critical value of 4.55 and lower bounds value of 2.98 for k= 6 at 15 significant level. So, we reject the null hypothesis of no cointegration and conclude that there exists long-term equilibrium relationship among the variables.

4.3. ARDL Long-Run Result

Upon validation of the existence of long run relationship among the variables, we estimated the results using ARDL estimation techniques and the results are shown in table 4.3 below:

Table 4 Summary of ARDL Long-Run Analysis

Dependent Variable -HDI				
Variables	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
lnGEX	0.602112	0.207474	2.902108	0.0105**
lnTRE	0.244010	0.091981	2.652831	0.0115**
lnBMP	0.422112	0.153382	2.752031	0.0111**
MPR	-0.194201	0.100838	-1.925871	0.0431**
IFR	-0.152301	0.060889	-2.501289	0.0211**
R-squared =0.7912			F-statistics = 16.85	
Adjusted R-squared =0.77005			Prob. (F-statistics) = 0.0002	

Source: Authors Computation using E-views; Note : the sign ** represents the level of significance at 5% critical value

The results of the effects of fiscal policy variables on HDI in table 4 show that the coefficients of GEX and TRE are 0.60 and 0.24, with p-values of 0.0105 and 0.0115, respectively. The results connote positive (elastic) and statistically significant relationships of fiscal policy variables with HDI in Nigeria in the long run. Therefore, increase in GEX and TRE by 100 units will lead to 60% and 24% improvement in HDI, and they are both significant in explaining variations in HDI in the long run, in line with our a priori expectations. This result is consistent with studies by Dauda and Iwegbu (2022); Kizilkaya, Koçak and Sofuoğlu (2015); and Ali, Raza, Yousuf (2012) that increase in revenue and well-tailored government spending to areas of development infrastructure will improve HDI in Nigeria. Worthy of note is the fact that while increase in revenue would help fuel government spending, unguided tax increases will have multiple negative effects on welfare.

Also, analysis of the results in table 4 with respect to monetary policy variables show that while BMP has a positive (elastic) and statistically significant relationship with HDI in Nigeria in the long run with. This is evident in the coefficient value of 0.42; and t-value of 2.752203 with corresponding p-value of 0.0111 being less than 5% significant level. The result is consistent with findings by Mustapha (2020) in Sudan. However, with a coefficient of -0.19; as well as t-statistic of 1.925873 and corresponding p-value of 0.0431 being less than 5% significant level, MPR has a negative and statistically significant relationship with HDI in Nigeria in the long run. The result agrees with short run findings by Arotiba and Omankhanlen (2021) in Nigeria on the impact of interest rate on HDI. The implication of the results is that while high volume of BMP improves HDI positively in spite of its inflationary tendencies; the responses of investment and consumption expenditures to changes in MPR, which is the anchor rate, is at the heart of stabilization policy. This is in line with Hall, Sims, Modigliani, and Brainard (1977) position that the more sensitive the response of investment and consumption expenditure, the more potent is monetary policy. Furthermore, the negative influence of higher rates on various expenditure lines may inhibit macroeconomic effect of expenditure policy. Further analysis of the results in Table 4 above revealed that inflation rate (IFR) has negative (inelastic) and statistically significant relationship with HDI in Nigeria in the long run, and the result is consistent with similar studies by Ekomane (2021); Osiakwan, (2013); Naz, Chaudhry, Hussain, Daraz, and Khan, (2012); and Ogbebor, Oguntodu and Oyinloye (2020). The implication is that increase in inflation by 100 units will lead to 15 percent decrease in HDI. This implies that sustained increase in inflation has continued to be inimical to welfare maximization in Nigeria and reflects the affirmation of Yolanda (2017) that high inflation rate will decrease the level of social welfare in any economy.

4.4. Short-Run ECM Analysis

Table 5 below shows the outcome of short run analysis that shows the speed of adjustment of deviation from long run equilibrium as being correctly signed with a value of (-0.32). Also, the p-value of the error correction coefficient is statistically significant with p-value of 0.0252 being less than 5% significant level. This further implies that the deviation from long-term equilibrium is corrected by 32 percent within one year. The result is in line with the stance of Banerjee, Dolado, Galbraith and Hendry (1998) that highly significant error correction term further signifies the existence of stable relationship among the variables.

Table 5 Summary Results of Short-Run ECM Analysis

Dependent Variable -HDI				
Variables	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
d(lnGEX)	0.321122	0.138894	2.311993	0.0311**
d(lnGEX(-1))	0.131251	0.065877	1.992365	0.0421**
d(lnTRE)	0.142518	0.054769	2.602165	0.0111**
d(lnBMP)	-0.201212	0.078654	-2.558192	0.0331**
d(MPR)	-0.180124	0.176325	-1.021545	0.1418
d(IFR)	-0.124024	0.056343	-2.201232	0.0436**
CointEq(-1)	-0.321212	-0.1153314	-2.785122	0.0252**
R-squared = 0.7505			F-statistics = 21.0124	
Adjusted R-squared = 0.7321			Prob. (F-statistics) =0.0000	

Source: Author's Computation using E-views; Note : the sign of ** represents the level of significance at 5% critical value.

Further review of the results in table 5 shows a similar pattern of positive and statistically significant relationships among the variables as observed in the long run analysis. However, while BMP had positive relationship with HDI in the long run, it has negative relationship with HDI in the short run. Similarly, MPR is statistically insignificant in the short run as against the result in the long run. Also, the previous year result of GEX captured as d(lnGEX(-1)) is equally positive and statistically significant with HDI in the short run.

Analysis of the long and short run results in comparative terms shows that fiscal policy variables proxied by Government Expenditure (GEX) and Tax Revenue (TRE) have more potent effect on HDI than Monetary policy variables (Broad Money Supply – BMP) and Monetary Policy Rate (MPR). This result is consistent with studies by Ali, Irum and Ali (2008), and Mohammad, Wasti, Lal and Hussain (2009) with respect to impact of fiscal and monetary policy on HDI; and others

by Jayaraman, Cheeng and August (2012); Ubi-Abai and Ekere (2018); and Tarawalie and Kagbo (2020) with respect to their impact on output and GDP.

In general, the long and short run results reveal the dominant structure of stabilization policy divergence as against the result-oriented complementarity and effective policy coordination. Therefore, actionable synergy and policy convergence, without loss of monetary autonomy and fiscal discipline, between fiscal policy and monetary policy makers in Nigeria, will make the two policy frameworks more potent in stimulating economic activities and improving general welfare.

4.5. Summary Results of Post Diagnostic Tests

From tables 5 and 6, we observed that the values of R-squared and Adjusted R-squared are 0.79 and 0.77 in the long run and 0.75 and 0.73 in the short run. This implies that over 79% and 75% of the variations in HDI were caused by changes in the selected regressors in the long and short run, respectively. Similarly, the p-values of 0.0002 and 0.0000 of the overall F-statistics in the long and short run analyses are less than 0.05, which connotes goodness of fit of the model. Also, the summary results of other post-diagnostic tests carried out to validate or otherwise the core assumptions of Ordinary Least Square with respect to normality, heteroscedasticity, autocorrelation, and functional form are shown in table 6 below:

Table 6 Summary Results of Short-Run ECM Analysis

Tests	**LM-version**	
	Statistic	**P-value**
Breusch-Pagan-Godfrey serial Correlation test	$\chi2$ (2) = 9.58	0.1125
Breusch-Pagan- Godfrey Heteroscedasticity test	$\chi2$ (6) = 5.87	0.5911
Jarque-Bera (Normality) Test	$\chi2$ (2) = 3.96	0.1052
Ramsey Reset(Functional Form) Test	$\chi2$ (1) = 0.12	0.1005

Source: Author's Computation using E-views

We implored the use of Breusch-Pagan-Godfrey test following challenges associated with the use of DW test for distributed lag (Breusch, (1978). The result of Breusch-Pagan- Godfrey serial Correlation LM test in table 4.5 above shows that the null hypothesis of 'No serial correlation of any order' is accepted with p-values of 0.1125 being greater 0.05 significant level. This implies that the error terms are free of autocorrelation problems. Also, the result of heteroscedasticity test shows that with corresponding p-value of 0.5911 < 0.05, the null hypothesis of homoscedasticity is accepted leading to the conclusion that the distribution has constant variance. Further results for normality and model functional form revealed that the observation is normally distributed, and there is no model misspecification.

5. Conclusion

This study empirically examines the impact of stabilization policies proxied by selected fiscal policy and monetary policy variables on human development index in Nigeria from 1990 – 2021 using data sourced from both the Central Bank of Nigeria Statistical Bulletins and UNDP Human Development Report for various years within the study period. Pre-diagnostic tests applied using ADF revealed mixed order of integration; and Bound Cointegration test further shows the existence of long run relationship among the variables. The fulfilment of this pre-condition, led to our empirical analysis using ARDL estimation technique, and the long run results revealed that GEX, TRE and BMP have positive and statistically significant relationships with HDI, while MPR and inflation rate have negative but statistically significant relationships with HDI in the long run. Also, the short run analysis revealed that the error correction term is not only negatively signed, but it is equally statistically significant implying that 32 percent of the disequilibrium in HDI is corrected within one year.

Therefore, we infer from the results of our analyses that there is need for the synthesis and convergence of fiscal and monetary policy framework without loss of monetary independence and fiscal discipline since they are both crucial in improving HDI in Nigeria. However, in comparative terms, fiscal policy variables proxied by government expenditure (GEX) and Tax Revenue (TRE) are more potent in their impacts on HDI than monetary policy variables. Also, the study concludes that sustained high inflation rate will continue to negatively frustrate welfare maximization in view of its negative multiplier effects as a high interest rate trigger among others.

Policy Recommendations

Government expenditure budgets should be properly structured to allocate more resources to capital expenditure that will deepen the benefits of government spending on general welfare maximization in Nigeria. Also, to stimulate and fully optimize the benefits of government spending, effective tax policies should be adopted since government power to spend is fueled by revenue. The tax policy must be designed to eliminate identified areas of multiple taxation that discourages tax payment and encourages evasion; streamline tax collection process for optimal returns and adopt a transparent approach that ensures accountability on monies generated from taxation. Also, to optimally harness the significant impact of broad money supply on HDI, effective regulatory framework should be put in place to limit, to the globally acceptable range, the magnitude of unregulated money in the informal economy. This is because effective control and regulation of money stock will ultimately help deepen policy thrusts targeted at controlling spiraling inflation rate and usher in positive era of accommodative interest rate driven by market forces that will spur economic activities and improve social welfare. Finally, proper coordination and complementarity of monetary and fiscal policy frameworks is advised for consolidated gains of from the use of stabilization policy toolkits for sustainable development in Nigeria.

Contribution to Knowledge

The study contributed to knowledge by extending the knowledge base of studies on the impacts of stabilization policies to general welfare mirrored in human development index in Nigeria. The study further strengthened the call for neoclassical synthesis and the coordinated use of monetary policy and fiscal policy frameworks for consolidated macroeconomic gains in Nigeria.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflicts of interest.

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