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An assessment of the impact of fiscal and monetary policies coordination on health outcomes in Nigeria

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Abstract
This study investigates the impact of fiscal and monetary policy coordination on health outcomes in Nigeria from 1980 to 2021. The study adopted an ex-post factor research design hinged on Grossman's health demand and production theory as its theoretical framework with secondary time series data sourced from World Development Indicators (WDI) between1980-2021. The data were analysed using the Autoregressive Distributed Lag Model (ARDL). From the results, while government health expenditure (GHE) has no significant contribution to the improvement in health outcomes, monetary policy impacted significantly on health outcomes in Nigeria. Infant mortality rate (IMR) is shown to have positive and significant effects on past values in the first and fourth lagged with 2.21 and 0.54 coefficients respectively at a 5% significant level. Similarly, government health expenditure (GHE) significantly positively impacts on Infant mortality rate (IMR) 10% level level of significance, which complies with the a priori expectation. The study concluded that both government health expenditure and monetary policy stimulate the reduction in the infant mortality rates in Nigeria. Therefore, the study recommended an integrated approach to ensure the coordination of fiscal and monetary policies in addressing both government health expenditure and health outcomes simultaneously, through increased fiscal spending on healthcare infrastructures such as spending on hospitals, clinics, and healthcare personnel, to enhance the overall health system.

Keywords: Government health expenditure, Healthcare, Healthcare infrastructure, Infant mortality, Money supply

1. Introduction

The major goal of every economy in the world is the maximization of people's welfare through the achievement of sustainable economic growth and development. To accomplish this goal, certain variables which can help the economy to grow and develop will have to be put in place. Good health has been seen as one of the important variables and necessary conditions for the attainment of growth and development of any economy (Hlafa, Sibanda & Hompashe, 2019; Ogunjimi & Adebayo, 2018). A healthy workforce is known to be a productive workforce. Therefore, the quality of health in the economy determines the kind of economic activities that will be inherited in the economy. To Cooray (2013) and Nkpoyen, Bassey, & Uyang (2014), the importance of health in growing the economy of a country has shown that good health raises the level of human capital, promotes the productivity capability of individuals in the country and facilitates the rate of economic growth (Cooray, 2013; Nkpoyen, Bassey, &Uyang, 2014).

The contribution of the health sector to health outcomes cannot be overruled. The sector accommodates healthcare providers that synchronize efforts towards promoting health outcomes of the citizens, thus

justifying government expenditure in the sector. Apart from the use of public expenditure to improve health, the government also has at its disposal monetary instruments to promote health outcomes. Monetary policy is the macroeconomic policy laid down by the Central Bank of Nigeria (CBN) to manage the money supply and interest rates in the economy to achieve price stability and promote economic growth. The CBN implements monetary policy through various tools such as open market operations, reserve requirements, and discount rates. The CBN has been using monetary policy to manage the country's economy and promote sustainable economic growth (CBN, 2021). It involves the combination of different monetary instruments in controlling the volume of money in circulation. According to Folawewo and Osinubi (2006), the CBN policy is a combination of measures designed to regulate the cost, supply, and value of money in an economy in consonance with the expected level of economic activity while Obamuyi (2002) reaffirms that CBN monetary policy is the combination of measures designed to regulate the direction, cost and volume of credit in an economy according to the designed level of economic activities. Piabuo and Tieguhong (2017) submitted that for most Economists, the aims of monetary policy include maintenance of balance of payments, stability, price, equilibrium, promotion of employment, health and output growth, and sustainable development. These aims are essential for the achievement of external and internal balance, and the enhancement of health and economic growth.

The intricate relationship between economic policies and public health outcomes has garnered increasing attention, particularly in a populous and developing nation like Nigeria, where the pursuit of economic growth often intersects with the imperative to improve health indicators. Nigeria faces the dual challenge of achieving economic growth and improving its healthcare sector to enhance the well-being of its citizens. The intersection of economic policies and public health outcomes is a critical nexus that holds significant implications for the holistic development of nations. In the context of Nigeria, a developing nation striving for economic growth and improved health outcomes, the coordination of fiscal and monetary policies becomes an essential consideration. Such coordination plays a pivotal role in shaping the healthcare landscape, influencing access to medical services, healthcare infrastructure, and overall population well-being.

While the government's fiscal policies, encompassing taxation, public spending, and investment allocation directly affect the availability of resources for health infrastructure, human resources, and medical supplies; monetary policies, regulating interest rates, money supply, and inflation on the other hand can indirectly impact healthcare through their influence on public and private sector investment in health-related activities. However, the coordination between these fiscal and monetary policies and their effects on health outcomes has been relatively underexplored in the literature and specifically in Nigeria's context. The potential interplay between policies, such as increased government spending on healthcare and appropriate monetary measures to control inflation can either amplify or dampen the desired health outcomes. Additionally, potential conflicts or contradictions between these policies might arise, potentially hindering the effectiveness of efforts to simultaneously promote economic growth and enhance healthcare services.

The efficient operation of a country's healthcare system is not only a cornerstone of its social fabric but also paramount to the overall welfare of its populace. In the case of Nigeria, a nation actively striving for

economic advancement, the imperative lies in the synchronization of fiscal and monetary policies to meticulously allocate resources. Yet, the intricate interplay, or the absence thereof, between these policy realms and their consequential impact on healthcare outcomes has thus far been a largely uncharted territory in research. In essence, a few researchers such as Chuku (2010), Edeme et al (2017), Kim et al (2013) & Maduka et al (2016) have investigated this area, presenting a critical knowledge gap regarding the specific policy interactions between monetary and fiscal policies that influence health outcomes, hindering the realization of sustainable development. To address this gap and promote sustainable development therefore, this study investigates the interactions of monetary policy and fiscal policy in promoting health outcomes in Nigeria.

2. Literature Review

Ajayi & Ojo (2014) emphasized that in developing economies of which Nigeria is a typical example, the emphasis is always on fiscal policy rather than monetary policy. In his study, he estimated the variables of monetary and fiscal policies using the Least Square (OLS) method and found out those monetary influences are much larger and more predictable than fiscal influence; he suggested that greater attention should be placed on monetary action.

Adefeso & Mobalaji (2010) wrote on the fiscal-monetary policy and economic growth in Nigeria. Their major objective was to re-estimate and re-examine the relative effectiveness of fiscal and monetary policies on economic growth in Nigeria using annual data from 1970-2007. The Error correction mechanism and co-integration technique were employed to analyze the data and draw policy inferences. Their result showed that the effect of monetary policy is much stronger than fiscal policy. They suggested that there should be more emphasis and reliance on monetary policy for economic stabilization in Nigeria. Chuku, (2010) uses quarterly data to explore the monetary and fiscal policy interactions in Nigeria between1970-2008. The paper examines the nature of fiscal policies in Nigeria using the vector auto-regression (VAR) model. The evidence indicates that monetary and fiscal policies in Nigeria have interacted in a counteractive manner for most of the sample period (1980-1994) while at other periods no symmetric pattern of interaction between the two policy variables was observed.

Studies on government expenditure on health and the health sector performance are many, with mixed results while some studies argue that government expenditure does not necessarily influence the performance of the health sector, others hold the contrary opinion as reviewed below. Firstly, Xian, et al. (2010) acknowledged that both in the short or long run, government expenditure on health is positively affected by the environmental quality and the country's economy.

Also, Ahmed, Naser, & Deam (2016) confirm that health outcomes, public expenditure, income level on government stability, health, and corruption have a long-run relationship. They employed an Auto Regressive Distributive Lagged (ARDL) to examine the impact of Malaysian public expenditure on health and governance on health outcomes. Their study covered 1984 to2009. However, the results further revealed that health outcomes in the short and long run is affected by corruption. The studies recommended a focus on the imperative of health programs and checking the corruption rate in the country.

Anyanwu & Erhijakpor (2007) examine the impact of government expenditure on health outcomes in Sub Saharan Africa with evidence of the relationship between government expenditure, per capita income and health outcomes in African countries. Using data from 47 Sub Saharan African countries, the researchers found that health

expenditure has a significant impact on infant mortality and child mortality in Africa. Hence, the result laid emphasis to the fact that government expenditure is an important factor that influences mortality rate in the region.

Sanusi (2002) stated that the main goal of CBN monetary policy in Nigeria has been the sustenance of stable exchange rates and domestic price stability since this is vital for the development of health and economic growth (Hohmann and Garenne 2010). Ajisafe and Folorunso (2002) explained that the effectiveness of CBN monetary policy on economic activity in Nigeria can be seen by applying co-integration and error correction modeling techniques and annual series from 1970 until 1998. The research confirmed that CBN monetary policy rather than fiscal policy has a greater effect on health and economic activity in Nigeria (Umezinwa, 2016), and stated that concentrating on fiscal policy by the Nigerian government has resulted to confusion in the economy. Error Correction Mechanism and Co integration technique was adopted by Adefeso and Mobolaji (2010) and Aaron (1981) and also estimates the impact of monetary policy on both health and economic growth by adopting annual CBN data from 1970 until 2007. The empirical outcome indicates that the effect of CBN monetary policy is more effective than CBN fiscal policy and the exclusion of the degree of openness did not reduce the finding. Onyeiwu (2012) and Mbutor (2010) explained the effect of CBN monetary policy on health and economic development in Nigeria using Ordinary Least Squares Method (OLS) from 1981 to 2008 and the result indicated that CBN monetary policy presented by money supply exerts a positive effect on gross domestic product growth and balance of payment but impacted negatively on rate of inflation. In addition, the outcomes of the research buttress the money-prices-output hypothesis for Nigerian economy.

3. Methodology

The study employed descriptive survey research design. The study examined how an independent variable affect the dependent variable. Thus, this study used government health expenditure (proxy for fiscal policy), gross domestic product growth rate, money supply as a ratio of gross domestic product (proxy monetary policies) and interest rate (proxy monetary policies) while we have the dependent variable for this study as infant mortality rate (proxy for health outcomes).

3.1 Data

The study examined the relationship among fiscal policy, monetary policy and health outcomes in Nigeria over the period of 1980 to 2021. This study made use of the period because of the availability of data and for the purpose of further research and findings is an attempt to investigate the relationship among fiscal policy, monetary policy and health outcomes in Nigeria from 1980 to 2021. The variables of interest were sourced from Nigeria Bureau of statistics (NBS)

Functional Model:

IMR = f(GHE, GDPgr, M2_GDP ,INTR)……..……
…(1)

Mathematical Model :

$IMR_t = \beta_0 + \beta_1 GHE_t + \beta_2 GDPgr_t + \beta_3 M2\_GDP_t + \beta_4 INTR_t$ ……(2)

Econometric Model:

$IMR_t = \beta_0 + \beta_1 GHE_t + \beta_2 GDPgr_t + \beta_3 M2\_GDP_t + \beta_4 INTR_t + \mu_t$……..…(3)

Where :

IMR = Infant Mortality Rate

GHE = Government Health Expenditure

GDPgr = Gross Domestic Product Growth Rate

M2_GDP = Money supply as a ratio of GDP

INTR = Interest Rate

3.2 Model estimated

The model of this study expresses health outcomes, which is proxy by infant mortality rate as the function of various components of fiscal policy and monetary

policy. The model is expressed in linear form as in equation 2

Consequently, we transform the relationship expressed in equation (2) above in to a log- log model. All the variables enter the model in their log forms, these variables are equally in their real forms. Specifically, given the time series nature of the data available the postulated long-run model as shown above. Where health outcome is proxy by infant mortality rate, fiscal policy is proxy by government health expenditure and monetary policy is proxy by interest rate and money supply

Table 3.1: Variables a prior Expectation

S/N	Variable	Model
1	Government health Expenditure	Negative
2	Gross domestic product growth rate	Positive
3	Money supply	Negative
4	Interest rate	Positive

There is a priori expectation as determined by the principles of economic theory that is, the sign and magnitude associated with the coefficient of the defined relationship to the above stated model in equation (3) is the intercept of the model and it is not sign restricted, that is, it could be positive or negative based on the results of the estimation, are to the parameters. The summary of the a priori expectations are shown in table 3.1.

3.3 Long -run Co integration analysis

The ARDL approach involves two steps for estimating the long-run relationship (Pesaran, Shin, & Smith, 2001). The first step is to examine the existence of long-run relationship among all variables in an equation and the second step is to estimate the long-run and short-run coefficients of the model. There is a need to run the second step only if we find a co- integration relationship in the first step.

The choice of an ARDL model rather than a static one is motivated by the need to capture all the dynamic responses in the dependent variable brought about by changes in its own lags and the contemporaneous and lagged values of the other explanatory variables and that, starting by directly estimating a static long-run equation may fail to capture any immediate, short-run and long-run responses in the system thus generating imprecise coefficient estimates (M'Amanja & Morrissey, 2005).

For this effect, the study adopted the ARDL framework (the Bounds testing approach) advanced by Pesaran et al (2001) in the estimation of level relationships. The basis for the use of this technique is that the technique proposes that once the lag order of the ARDL model has been recognized. The technique allows for a mixture of stationary and non-stationary variables are independent variables. Unlike most other conventional co-integration methods, the ARDL technique does not essentially require that the order of integration of variables under consideration to be the same.

Given the non-stationarity characteristics of most time series variables, testing the properties of these variables has become relevant to avoid spuriousness of empirical results. In this view, this study commenced its econometric analysis by conducting the stationary properties of the variables using the Augmented Dickey-Fuller tests.

The time series properties of the variables incorporated in the model is examined using the Augmented Dickey-Fuller unit root test in order to determine the long-run convergence of each series to its true mean. The test involves the estimation of equations with drift and trends as proposed by Dickey and Fuller (1988).

4. Results and Discussion

In this study, we have examined the relationship among fiscal policy, monetary policy and health outcomes in Nigeria from 1980 to 2021 by employing the use of Augmented Dickey-Fuller test and Bound tests. The result from the estimation

suggests that government health expenditure has a relationship with the infant mortality rate in Nigeria, as an increase in government health expenditure has no significant contribution to the improvement in health outcomes. The result does not conform with the observations of Gupta et al (2002) included the infant mortality rate in their study and emphasized that government health expenditure decreased the death of infants who is under-five. According to Flimer and Prittchet (1997) found that doubling public spending from 3% to 6% of GDP would improve child mortality by only 9% to 13%. Likewise, Gupta et al. (2003) undertook a cross-country analysis of 56 countries and concluded that increasing public expenditure on health can reduce the mortality rates of infants and children in a population.

Similarly, according to the research of Udude (2014), monetary policy is a deliberate effort by the monetary authorities to control money supply and credit creation to achieve certain broad economic goals. From the estimate, it was revealed that money supply is shown to have positive and negative effects on IMR. The result confirms the study of Orji (2006) examined the efficacy of monetary policy in ensuring price stability using the consumer price index and inflation rate as price measures in Nigeria.

Table 4.1 Descriptive Analysis

Mean	103.5286	491.6172	0.394945	17.35061	16.8609
Median	108.1	167.5392	1.121766	16.92153	13.88719
Maximum	126	2053.608	12.27614	31.65	28.62522
Minimum	70.6	0.469227	-15.6979	8.916667	9.063329
Std. Dev.	19.76735	627.846	5.174797	4.791745	6.166357
Skewness	-0.28282	1.103542	-0.89721	0.361125	0.487951
Kurtosis	1.431523	2.908571	4.917164	3.650124	1.59943
Jarque-Bera	4.865113	8.539268	12.06708	1.652539	5.099467
Probability	0.087812	0.013987	0.002397	0.437679	0.078102
Sum	4348.2	20647.92	16.58768	728.7255	708.1577
Sum Sq. Dev.	16020.67	16161817	1097.919	941.3937	1558.982

Source: Researchers' Computation (2023)

In analyzing the time series data, it is necessary to first examine the descriptive statistic of all the variables in the data set to check if there exists a perfect multicollinearity among the independent variables. This discusses the univariate statistics of the variables which include the mean, median, skewness, Jarque-Bera, and Kurtosis among others reported From Table 4.1, it is evident that the mean and median values are within the maximum and minimum values showing that the variables are statistically independent.

Skewness is a measure of the asymmetry of the distribution of the series around its mean. From the result in Table 4.1 we observe that government health

expenditure, interest rate, and money supply were positively skewed and have their tails to the right while infant mortality rate and gross domestic growth rate were negatively skewed and have their tails to the left. Moreover, Kurtosis measures the peakedness or flatness of the distribution of the series. From Table 4.1, all the variables were below five therefore they are platykurtic. Contrast to these is the probability values and the Jarque – Bera normality test, which is an asymptotic test. It revealed from the table that the residuals are normally distributed at 5% level of significance.

Table 4.2. Correlation matrix

	IMR	GHE	GDPGR	INTR	M2_GDP
IMR	1	-0.91886	-0.26267	0.083226	-0.76784
GHE	-0.91886	1	0.085199	-0.17731	0.783534
GDPGR	-0.26267	0.085199	1	0.444078	0.115391
INTR	0.083226	-0.17731	0.444078	1	-0.12529
M2_GDP	-0.76784	0.783534	0.115391	-0.12529	1

Source: Researchers' Computation (2023)

To observe the relation among our variables of interest, correlation analysis was carried out to preclude the possibility of multicollinearity among the variables in our model. Table 4.2 presents the result from the correlation matrix among the data series. It can be deduced from Table 4.2 that there is no evidence of multicollinearity among the independent variables used in the model. This is because there were no strongly correlated variables in the model. Furthermore, evidence revealed that all the variables were negatively related to the infant mortality rate except the interest rate.

4.3 Econometric Analysis

4.3.1 Unit Root Test

This test tries to examine the properties of the variables. It is used to check for the presence of a unit root i.e. no stationarity of the variables. This test is carried out using the Augmented Dickey-Fuller (ADF) test. This is the first test carried out in the co-integration analysis and is known as the pre-co-integration test. The ADF is carried out using the E-view software package and the results from the tests are tabulated below

Table 4.3 Unit Root Test

Variables	ADF Tests	Test critical values:		Order
Var	Stat	1% level	5% level	*I(0)*
IMR	-0.22061	-3.61559	-2.94115	*I(0)*
GHE	2.704206	-3.61559	-2.94115	*I(0)*
M2_GDP	-2.231371	-3.60099	-2.935	*I(0)*
GDPGR	-2.854235	-3.60559	-2.93694	*I(0)*
INTR	-2.006516	-3.60099	-2.935	*I(0)*

Source: Researchers' Computations 2023

As it is a common practice with time series to ensure a long-run relationship amongst the variables in the model, the researchers engaged the Augmented Dickey Fuller test to assess the stationarity of all the variables in the model to ensure that none is or above. If the variables have the same level of stationarity it presumes a long-run relationship or suggests the existence of co-integration between the variables (Abdullah & Habibullah, 2009). The implication is that the regression results are not spurious, as they involve a similar pattern of movement. Insight from the ADF tests results showed that our variables are of different orders which are combination of variables. The result in table 4.3 justified the adoption of ARDL technique of analysis.

4.4 Results of the Bounds Test

Test statistic	Value	K
F-statistic	5.41	6
Critical Value Bounds		
Significance	Bound	Bound
10%	2.26	3.35
5%	2.62	3.79
1%	3.41	4.68

Source: Researchers' Computation 2023

The construction of the co-integration bounds test entails the evaluation of F-statistic against the critical values; in this case, we use the one generated by Narayan (2010) due to the short period covered by the data. The results revealed that the test is highly significant at 5% level. This warrants the rejection of the null hypothesis of no co-integration, irrespective of whether the series are strictly at or a mix of both. Similarly, the results also confirm the presence of a long-run relationship between the regressors and regressant, which suggests the co-integration exists between the dependent variable and independent variables with F- statistic of 5.41, which exceeds the upper critical bound value.

4.3.2 Autoregressive Distributed Lag (ARDL)

In this section, the data presented were transformed in testable forms. This is to mitigate the problem associated with heteroskedasticity, and also conform to the assumption of linearity which posits that all data must be in the same state (Gujarati & Porter, 2013).

4.5 Short-run ARDL Results

Dependent Variable: IMR

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
IMR(-1)	2.219418	0.142931	15.52786	0.00000*
IMR(-2)	-1.001547	0.383502	-2.611584	0.0141**
IMR(-3)	-0.749046	0.394774	-1.897406	0.0678***
IMR(-4)	0.543984	0.155474	3.498868	0.0015*
GHE	0.000259	0.000141	1.845106	0.0753***
GDPGR	0.007651	0.008361	0.915043	0.3677
M2_GDP	0.01444	0.011082	1.30308	0.2028
INTR	0.00453	0.008338	0.543329	0.5911
C	-2.003818	0.846009	-2.368554	0.0247

***p < 0.01, ** p< 0.05, *** p< 0.1*

***Note: p-values and any subsequent tests do not account for model selection**

Source: Researchers' Computation

Table 4.5 depicts that the error correction term in this relationship represents the speed of the adjustment mechanism, which reverts to equilibrium in the dynamic model. The coefficient is at 5% significant level and this signals how fast the variables adjust to equilibrium and it is expected to have a statistically significant negative sign. Meanwhile, Azman-Saini (2013)

argued that a highly significant error correction mechanism or term is a further indication of a stable long-run relationship which explains a restoration of any shock within a year that arises in the system (Pesaran & Pesaran, 2009). Notice that the coefficient of the dependent variable has a negative sign as expected and is significant at 1% probability level

4.3.2.1 Long Run and Short Run Estimates

Table 4.6 Long-Run ARDL Results

Dependent Variable: IMR

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
IMR(-1)	2.238157	0.245058	9.133188	0*
IMR(-2)	-1.010005	0.631467	-1.599458	0.1337
IMR(-3)	-0.749427	0.641852	-1.167601	0.2639
IMR(-4)	0.523753	0.249602	2.098352	0.056***
GDPGR	-0.00033	0.014509	-0.022725	0.9822
GDPGR(-1)	0.005131	0.011709	0.438256	0.6684
GDPGR(-2)	0.004206	0.010334	0.406947	0.6907
GDPGR(-3)	-0.00796	0.01188	-0.670079	0.5145
GDPGR(-4)	0.005617	0.010782	0.520971	0.6111
GHE	0.000438	0.000234	1.875636	0.0833***
GHE(-1)	-8.29E-05	0.000265	-0.312863	0.7593
GHE(-2)	0.000212	0.000276	0.768707	0.4558
GHE(-3)	-0.00031	0.000287	-1.081376	0.2992
GHE(-4)	-5.32E-05	0.00032	-0.166174	0.8706
INTR	0.009927	0.019471	0.509829	0.6187
INTR(-1)	-0.002688	0.017981	-0.149473	0.8835
INTR(-2)	-0.000713	0.014306	-0.049837	0.961
INTR(-3)	0.001237	0.01536	0.080553	0.937
INTR(-4)	-0.003846	0.013976	-0.275192	0.7875
M2_GDP	0.005939	0.02404	0.247051	0.8087
M2_GDP(-1)	-0.007983	0.027326	-0.292142	0.7748
M2_GDP(-2)	0.002871	0.025958	0.110594	0.9136
M2_GDP(-3)	-0.018503	0.026816	-0.689995	0.5023
M2_GDP(-4)	-0.002165	0.013673	-0.158314	0.8766
C	-0.286372	2.884654	-0.099274	0.9224
R-squared	0.999973	Mean dependent var		101.3711
Adjusted R-squared	0.999922	S.D. dependent var		19.56056
S.E. of regression	0.172594	Akaike info criterion		-0.432593
Sum squared resid	0.387254	Schwarz criterion		0.644767
Log likelihood	33.21926	Hannan-Quinn criter.		-0.049277
F-statistic	19801.05	Durbin-Watson stat		2.686357
Prob(F-statistic)	0			

From tables 4.5 and 4.6, the short-run analysis of the relationship between infant mortality rate and GHE is quite revealing. Infant mortality rate is shown to have positive and significant effects on past values in the first and fourth lagged with 2.21 and 0.54 coefficients respectively. From the estimated results, if IMR increases by about one percent in the previous year (lagged 2 and 3), the present IMR coefficients will decrease by -1.0015 and -0.749 at 5% and 10% significant levels

respectively. The effect of GHE on IMR is positive and statistically significant at 10% level. But surprisingly, an increase in GHE by one unit will increase the IMR by 0.000259 which shows a non-compliance with *a priori* expectation. The estimated result shows that the contemporaneous effect of government health expenditure on infant mortality rate in the first previous year (lagged 1) is negative but not statistically significant. The positive effect of the GHE is not significant in the previous third year (lagged 3). From the estimated co-efficient, IMR estimated decreases of -0.00031 percent for every one percent decrease in GHE in the previous third year. The relationship is shown to be statistically significant given that the p-value of the estimated coefficient (0.000438) of 0.0833% is less than 0.1 allowable for this study. From the estimated results, the gross domestic product growth rate is shown to have a negative contemporaneous effect on IMR. The IMR decreases by about -0.007641 percent as a result of a 1 unit change in GDPGR. The money supply as a ratio of GDP (M_2_GDP) is revealed to have a positive effect on IMR, but not significant, IMR rises by 0.005939 percent. This immediate effect is statistically insignificant given the p-value.

Finally, the result indicates that the contemporaneous effect of interest rate on IMR is positive, but not statistically significant. The result shows that the effect of INTR, from the result, INTR rises by about one unit, IMR will increase by 0.009927 percent and this rise in IMR is statistically insignificant at all levels.

5. Conclusion and Recommendation

Following an extensive inquiry into the relationship between fiscal-monetary policy coordination and health outcomes in Nigeria, this study concludes that government health expenditure can reduce the infant mortality rates of children under-5 population. Additionally, it is concluded from the study that money supply has a positive impact on the infant mortality rate in Nigeria.

However, despite the use of instruments of monetary and fiscal policies such as money supply, interest rates, and government expenditure via an increase in allocation to the health sector, much impact has not been felt in health outcomes such as life expectancy, infant mortality, under five and maternal mortalities are still on the increase in Nigeria. From our results, the statistical analysis is worrisome and showed that Nigeria has failed to make significant progress in curbing the rising rate of under-five mortality as statistics revealed that up to 20% of child deaths among the under-five in sub-Saharan Africa still occur in Nigeria.

Policy Recommendations

1. The following recommendations were made based on the aforementioned findings
2. There must be an integrated approach to ensure the coordination of fiscal and monetary policies in addressing both government health expenditure and health outcomes simultaneously.
3. Recommend increased fiscal spending on healthcare infrastructure, including hospitals, clinics, and healthcare personnel, to enhance the overall health system.
4. Encourage fiscal policies that create or strengthen social safety nets to support vulnerable populations, ensuring access to healthcare services and necessities.
5. Suggest that central banks consider policies that support health-related initiatives, possibly through favorable interest rates for healthcare investments or targeted funding mechanisms.
6. Propose the establishment or improvement of coordination mechanisms between fiscal and monetary authorities to ensure alignment in goals and strategies.

7. Emphasize the importance of data-driven decision-making in policy formulation, considering both economic and health indicators to create effective and targeted policies.

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