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Case Study NJEPDM

Macroeconomic Forces: An Experiential Exploration of its Sway on Governance and Sustainable Economic Development in Nigeria

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Abstract

Macroeconomic forces are the variables that promote economic growth and development. Macroeconomic fundamentals are the engine room of the sectorial development in an economy. The study, therefore, examined the impact of macroeconomic fundamentals government and sustainable economic development in Nigeria from 1987 to 2020. Time series were used for the study, which was sourced from the Central Bank of Nigeria statistical bulletin and National Bureau of statistics. Data sourced were analysed using; Trend analysis, descriptive statistics, correlation matrix, unit root test, Cointegration test, long–run coefficient, Auto-regressive distributive lag error correction model, post estimation, and stability test. The study analysis was carried out with selected macroeconomic variables; inflation rate, interest rate, broad money supply, Real Gross Domestic Product, and unemployment rate. Their result of the long-run coefficient of the model revealed that there is a long–run relationship between governance and macroeconomic variables. The Real Gross Domestic product has a positive impact on per capita income at 10% and other variables did not have a significant impact on per capita income. While, short–run ARDL error correction model result indicated that lag three inflation rate, current year interest rate, lag three interest rate and lag two broad money supply have a negative significant effect on per capita income. While the current year's Gross Domestic Product, lag three Real Gross Domestic Product have a positive significant impact on per capita income. However, the variables in the model adjusted slowly (0.11) to change in the long–run equilibrium. The R^2 (0.99) showed 99% of verifications in the per capita income. The study recommended control of the inflation rate, increase in Real Gross Domestic Product, and interest rate stability in Nigeria.

Keywords: Broad Money Supply, Economic Development**,** Inflation, Interest Rate, Real Gross Domestic Product, Unemployment

INTRODUCTION

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Macroeconomic fundamentals are the substance for economic growth and development. This infers that they are variables that are assisting in the development of sectors of the economy. The macroeconomic variables in this study are; interest rate, broad money supply, inflation rate, and Real Gross Domestic Product. The underlined variables' performance determines the level of economic growth and development all over the world. Countries transversely the world try as much as possible to see the functionality of the underlined variables, seeing their prominence in the arrangement of economic presentation.

In view of the above explanations, the Nigerian government had in the past ignored the significance of these variables. This implies that the Nigerian government has been unsuccessful to address issues about the functionality of these macroeconomic variables and therefore, these variables have been unstable in terms of policy implementations by the government. The inability of the variables not to function effectively has caused a total collapse in the economic system or administrations of the government. Comparatively, other developed and developing economies try to solve problems associated with these macroeconomic variables, with the notion that, if not properly handled will affect the development of diverse segments of the economy.

Achievements of governance have witnessed a surge in economic growth and development in recent times in Nigeria. The importance of good governance cannot be over emphasis. Hence, there is a need for stable macroeconomic forces for better sectorial development in the short-run and long run respectively. However, different schools of thought are of the view that the functionality of government institutions depends on the stability of the macroeconomic fundamentals.

In his illustration, Onakoya AB [1] opined that institutions and governance are major channels through which countries all over the world can gain economic growth and development. Therefore, the macroeconomic variables must be functioning effectively for institutions to achieve the purpose for which they are established. The need for good governance attracted more attention in the 1990s in Nigeria. This is the result of the fiscal deficit characterized by the Nigerian budget. The deficit was perceived to be caused by an inflationary situation, high exchange rate, high level of unemployment, and reduction in gross domestic product amongst other macroeconomic factors.

Good governance plays a key role in bridging the gap in per capita income and brings about overriding geography and integration relationships, especially in international trade and foreign direct investment [2]. Notably, countries with perfect knowledge of their macroeconomic environment tend to achieve economic stability because of proper management of macroeconomic fundamentals. An increase in the inflation rate, high exchange rate low level of gross domestic product, and high unemployment rate amongst other macroeconomic problems, gives responsive government sleepless nights, such that policymakers try as much as possible to get to the root cause of the situation to achieve good economic performance in various sectors of the economy.

It is imperative to note that government is broadly defined as the traditional institutions by which authority in a country is exercised. Hence, governance is all about the proper management of the mechanism of the government for the proper socio-economic development of a country. The quality of governance on the other hand determines the success or failure of economic policies that could promote or stimulate economic growth and development [3]. Governance is all about the implementation and improvement of collective choice such as issues on state capacity building, and the inability of the state to coherently and efficiently implement policies and programs with limited corruption leads to national backwardness. Hence, macroeconomic stability is required for faster economic growth in Nigeria.

Statement of the Problem

Nigeria's economic performance over the years had been drastically low. This is a result of institutional imbalance and poor public administration. Nigerian per capita income is drastically reducing compared to other developing nations of the world. In the same vein, in terms of the effectiveness of the educational system and the average number of years a new-born is expected to live appears with serious doubt. Nigeria's life expectancy remains lower than other developing nations irrespective of numerous human and natural resources. This is a reflection of the protracted economic misfortunes of Nigeria that had defiled so many programs and policies. Antwi et al. [4] agreed with the view that the low pace of development in Nigeria is attributed to the mismanagement of human and material resources which is characterized by a high level of corruption and consequently, dysfunctional institutions.

It is sad to note that since the 1990s Nigerian institutions and governance have not fared better. Nigeria has failed to reverse its economic failures due to a lack of significant role of institutions and good governance which is necessary to fast-track its economic growth and development. Similarly, if the macroeconomic forces are weak in the system of governance, there is the possibility or tendency that such governance will face crises because of the non-functional macroeconomic fundamentals. Between 1960 to 1999 only a few macroeconomic variables have been stable. This has caused instability in the economic system [5].

Fundamentally, the inability of the Nigerian government not to get the right people for the right position to manage macroeconomic forces has contributed to the mismanagement of resources and consequently, has brought the country to this level of political and economic decay. The Nigerian government over the years had introduced programs and measures to better the political and economic system:

Government Reforms

This reform is to manage and control the macroeconomic variable- interest rate. That is ensuring that interest rates accommodate foreign and local investors so that banks can give loans that can bring about investment and improve sectorial performance in Nigeria.

Banking Sector Reform

This reform is about financial stability. This implies making sure that money laundering is drastically reduced as well as having a capital base of twenty-five billion naira to reduce distress in the banking sector. Banks are also encouraged to give loans to responsible investors as a way to promote a high level of investment and consequently, increase the gross domestic product in Nigeria.

Trade Openness

This is a situation where international trade is encouraged between countries. This situation increased the use of varieties of goods that are not produced in Nigeria. Trade liberalization brings about a reduction in unemployment as a result of an increase in the number of industries due to foreign direct investment.

But regrettably, all these policies and reforms could no achieve the purpose for which they were introduced, because of the institutional problem; corruption which is one of the cardinal problems facing Nigeria today has brought a low level of economic growth and development in Nigeria. Granted the fact that a whole lot of researchers have carried out studies in this respect, but the importance of good governance and macroeconomic stability will continue to gain wider knowledge because of the need for government improvement in the scheme of things. There is so much interest in the subject matter because of the gap in the literature, especially in the area of broad money supply and real gross domestic product. Therefore, the inclusion of a broad money supply and real gross domestic product amongst other variables makes this study holistic. In the same vein, the study covers the range of 1987 to 2020 for a comprehensive study of the impact of macroeconomic fundamentals on governance and sustainable economic development in Nigeria.

Objectives of the Study

The main aim of this study is to investigate the impact of macroeconomic fundamentals on governance and sustainable economic development in proxy, per capita income in Nigeria. But the specific objectives are to:

- Examine the impact of inflation rate on governance and sustainable economic development proxy in per capita income in Nigeria.
- Investigate the impact of interest rate on sustainable economic development proxy in per capita income in Nigeria
- Evaluate the impact of broad money supply on governance and sustainable economic development proxy in per capita income in Nigeria.

- Examine the impact of Real Gross Domestic Product on governance and sustainable economic development in proxy per capita income in Nigeria
- Investigate the impact of unemployment on governance and sustainable economic development proxy, per capita income in Nigeria.

Hypotheses

This study is guided by the following hypotheses:

Ho$_1$: Change in inflation rate has no impact on governance and sustainable economic development in Nigeria

H$_1$: Change in inflation rate has a positive significant impact on governance and sustainable economic development in Nigeria

$H_1, = \beta_1 < 0$

Ho$_2$: Change in interest rate has no impact on governance and sustainable economic development in Nigeria

$H0_2 = 0$

H$_{12}$: Change in interest rate has a negative significant impact on governance and sustainable economic development in Nigeria

$H_{12} = \beta_2 > 0$

Ho$_3$: Change in broad money supply has no impact on governance and sustainable economic development in Nigeria

$H_{03} = 0$

H$_{13}$: Change in broad money supply has a negative significant impact on governance and sustainable economic development in Nigeria

$H_{13} = \beta_3 > 0$

Ho$_4$: Change in Real Gross Domestic product has no impact on governance and sustainable economic development in Nigeria

$H_{04} = 0$

H$_{14}$: Change in the Real Gross Domestic Product has a positive significant impact on governance and sustainable economic development in Nigeria

$H_{14} = \beta_4 < 0$

Significance of the Study

This study holistically carried out an empirical analysis of the subject matter. Therefore, it will contribute to the existing literature concerning governance and macroeconomic fundamentals. The study will give the government and policy maker a sense of reasoning and directions on the way to manage macroeconomic forces. Because government performance largely depends on a good macroeconomic environment. It becomes imperative for this study to provide qualitative and quantitative measures to address socio-economic problems in the country. However, the knowledge got from this study will enable investors to know when and how to invest in different sectors of the economy, especially during the inflation period, and high exchange rates amongst other macroeconomic variables. Above all the study will also be used as a reference point for those in academics for further research, especially where a gap is created.

Scope of the Study

The study examines the relationship between macroeconomic fundamentals, governance, and sustainable economic development in Nigeria. The need for this study is born out of the dwelling nature of the Nigerian governance situation. The study limits its scope to the Nigerian context. The selected macroeconomic forces were tested to know the degree of responsiveness in governance and sustainable economic development between 1987 – 2020 which is the baseline for the study.

LITERATURE REVIEW

Conceptual Clarifications

Government as an Institution

The study of government as an institution has gained worldwide attention because of its importance to the socio-economic development of a nation. All over the world institution is seen as a paradigm that influences not just political and economic issues but aid in the decision for which implementations are carried out in different sectors of the economy. Consequently, only efficient institutions can influence government performance [6]. Good governance is mostly a result of a better functional institution that attracts achievement of capital formation, educational attainment, high level of productivity, and increased per capita income across countries. Gatawa et al. [7] were also of the view that a country may be endowed with different human and natural resources, but the fact remains that it is only a functional institution that can lead to the proper utilization of resources. Hence, the type of institutions that have been associated with economic performance is those that commonly relate to the measure of government appropriation which is regulatory quality in the area of rule of law, bureaucratic quality, which implies government effectiveness, corruption-free, civil liberties, and trade openness.

The Concept of Inflation Rate and Its Link to the Good Governance in Nigeria

Inflation rates continue to imply a consistent rise in the price of goods and services over a given period. Countries all over the world try as much as possible to control the inflationary situations because of their inherent tendencies. Government cannot function effectively with a high inflationary rate. This is because inflation controls the price of goods and services, interest rates, broad many supply, savings, and investment amongst other economic activities. Therefore, an inflationary situation can influence the functionality of the government. Thus, in this instance, the responsive government try to ensure inflation does not rise to double-digit. Inflation reduces the purchasing power of money. Thus, responsive government ensures that the inflation rate is reduced to a reasonable extent so that the policies and programs will be achieved.

Concept of Interest Rate and Its Link to the Good Governance in Nigeria

This is the rate in which all financial institutions depend on. This implies that monetary transactions that require repayment attract interest which must be paid within the stipulated time. Interest rates also influences stock exchange and treasury bill rates in an economy. Hence, the rate for which a certain amount is paid for the money borrowed is called an interest rate. Studies have shown that financial institutions are sensitive to the interest rate. Saymeh AA [3] advocated that interest rate has a direct relationship with investment in an economy. The reason is that interest rate determines the level of investment investors can embark on. This is because the rate of interest paid will discourage or motivate investors. The fact remains that, in most cases funds are been borrowed for investment. If the interest paid on the fund borrowed from private individuals, corporate organizations or financial institutions is low it will increase the level of investment and consequently, increase Gross Domestic Product and Sectorial Economic Performance. But in the other way round, there will be the tendency or possibility that high-interest rates will discourage investors as well as the reduction in economic growth and development. This is why countries all over the world maintain some level of interest rate to encourage foreign and domestic investors that wishes to invest in the country as the case may be.

Concept of Broad Money Supply and Its Link to The Good Governance in Nigeria

This idea is all about the quantity of money in circulation which also includes bank deposits. This is why broad money supply is measured on the premise of M_1 and M_2 respectively. The broad money supply is an important macroeconomic force in the economy, because if not well controlled and managed will great tendency or possibility for an inflationary situation. Therefore, sensitive governments try as much as possible to control the broad money supply to avoid an inflationary situation of too much money chasing a few goods.

Concept of Real Gross Domestic Product and its Link to the Good Governance in Nigeria

Good governance or a responsible government is measured by the level of real gross domestic product. The Real Gross Domestic Product is an inflation-based measurement. This implies that inflation influences the general measurement of gross domestic product. Factually, the value of the product is determined by the price index. If the producers can gain from their productivity, the gross domestic product becomes beneficial to the economy since profit can be generated from the production. This is why countries all over the world measure good governance based on the level of inflation rate as it concerns purchasing power of the domestic currency. Real Gross Domestic product is mostly used as comparison between countries on the sectorial performance. This means that an increase in Real Gross Domestic Product shows that sectors of the economy are functioning very well, which could be attributed to good governance.

Theoretical Advocacy on the Significance of Macroeconomic Fundamentals and Government Institutions

The Neoclassical Theory on Macroeconomic and Government Institutions

This school of thought is made of neoclassical theory, Keynesian theory, and Ricardo's theory. they advocated that institutions and macroeconomic variables are closely related. This implies that without the functionality of macroeconomic variables, government institutions may not function the way they ought to perform. Though other exogenous variables may affect government institutions. For instance, legal limits and property right amongst others. Notwithstanding good performance of macroeconomic variables makes it possible for structural changes which can typify the economy and agents in some specific ways. This assumption is based on the rational homogenous agent that makes decisions by maximizing their profit and utility. Though, the theory maintained that due to the heavy hand of the state, less developed countries cannot ordinate the allocation of resources in suitably efficient ways to sustain economic development. Therefore, the theory advocates proper management of macroeconomic forces for proper functional government administration.

Empirical Evidence on the Relationship Between Macroeconomic Fundamentals and Governance in Nigeria

Anumadu [8] investigated the link between some selected macroeconomic forces; inflation rate, exchange rate, unemployment rate, the balance of payment, and government institutions in Nigeria from 1987-2015. Time series were used for the analysis. The econometric method adopted in the study was ordinary least square because of its property; best linear unbiased estimator (Blue). The study revealed that there is the positive significant effect between the underlined variables and governance in Nigeria. Therefore, the paper recommended that there should be proper management of macroeconomic variables and government institutions especially policymakers that need to encourage investment in the productive venture to reduce the inflationary situation, and encourage the export of goods and services amongst others.

Ojede et al. [9] examined the impact of macroeconomic forces on government and policies in Nigeria. Secondary data were used for the study- 1980-2020. The econometric tool applied for the study was Auto-regressive distributed lag (ARDl) because of the order of integration from the augmented Dickey Fuller test result, where some variables attained stationary at levels and first difference. The variables used for the study were; the inflation rate, unemployment rate, the balance of payment, and exchange rate. The result of the study showed that some variables do not influence governance; unemployment, and balance of payment while the inflation rate and exchange rate have a positive significant impact on good governance in Nigeria. The paper recommended that the Nigeria government should increase the production of goods and services to increase GDP as well as reduce the inflationary situation for a better functional government.

Olawale [10] investigated the relationship between some selected macroeconomic variables and financial institutions in Nigeria. The selected macroeconomic forces used for the study were interest rate, exchange rate, and production price index. Secondary data were used for the study; from 1990 to 2014. Unrestricted vector autoregressive model which was impulse response function (IRF). The study indicated that there is a long-run co-integration positive relationship and Auto-regressive distributed lag, and a short run error correlation models were carried out in the study. The result of the analysis revealed that there is a positive relationship between the selected macroeconomic variable and financial institutions in Nigeria. The paper recommended proper management of interest rates and exchange rates to encourage local and foreign investors for sectorial development.

Adeyemi PA [11] evaluated the impact of macroeconomic variables and governance in Nigeria. Secondary data were used from 1980 to 2000. The variables in the model were the inflation rate, exchange rate, and production price index. The econometric method adopted was Auto-regressive distributed lag (ARDL) based on the result from the Augmented Dickey-Fuller test (ADF) where it was revealed that some variables attained stationary at a level and first difference. The result of the study indicated that there is a long-run relationship between the underlined variables and government performance in Nigeria within the period of study. The study recommended for management of macroeconomic forces for good governance.

METHODOLOGICAL FRAMEWORK

There are several approaches that attempted to explain the relationship between the macroeconomic variables inflation rate, interest rate exchange rate amongst others, and government performance. Those that approached the explanation of these variables and government performance include; Neoclassical theory and Keynesian theory.

Model Specifications

Governance and sustainable economic development is the dependent variable (proxy, per capita income), and macroeconomic fundamentals; inflation rate, interest rate, broad money supply, and Real Gross Domestic Product are independent variables. Thus,

PC1 = F (Inflr, Inter, bms, rgdp)—3.1

Given the functional relationship, the econometric model is specified below;

$PC1 = a_0 + a_1\, inflr + a_2\, inter + a_3\, bms + a_4\, rgdp + Ɛi$ –3.2

Where PCI = Per Capita Income
inflr = Inflation Rate
inter = Interest Rate
bms = Broad Money Supply
rgdp = Real Gross Domestic Product
Ɛi = Error term in the Model
a_1, a_2, a_3, a_4 are coefficient of the variables

DATA ANALYSIS

The empirical analysis, necessary to ascertain the relationship between macroeconomic variables and sustainable economic development, was carried out using econometric tools.

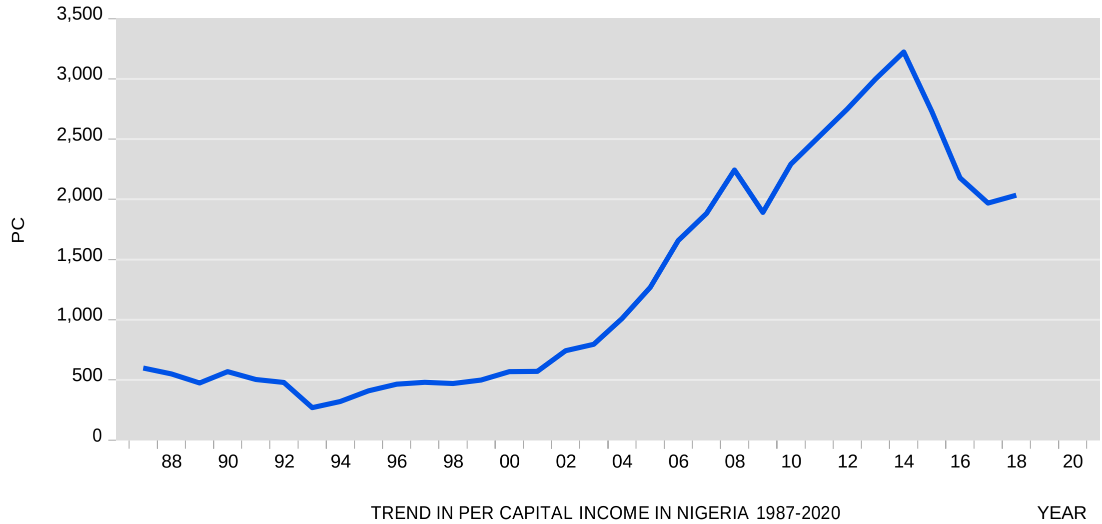

Figure 1. Trend analysis on per capita income.

Figure 1 shows that there have been fluctuations in per capita income in Nigeria with rising movement from 1988 to 2002 and a fall in 2006 as well as rise in 2008. There were fluctuations in a rising direction in 2014 and fell in 2016 and maintained to a certain level in 2020 respectively.

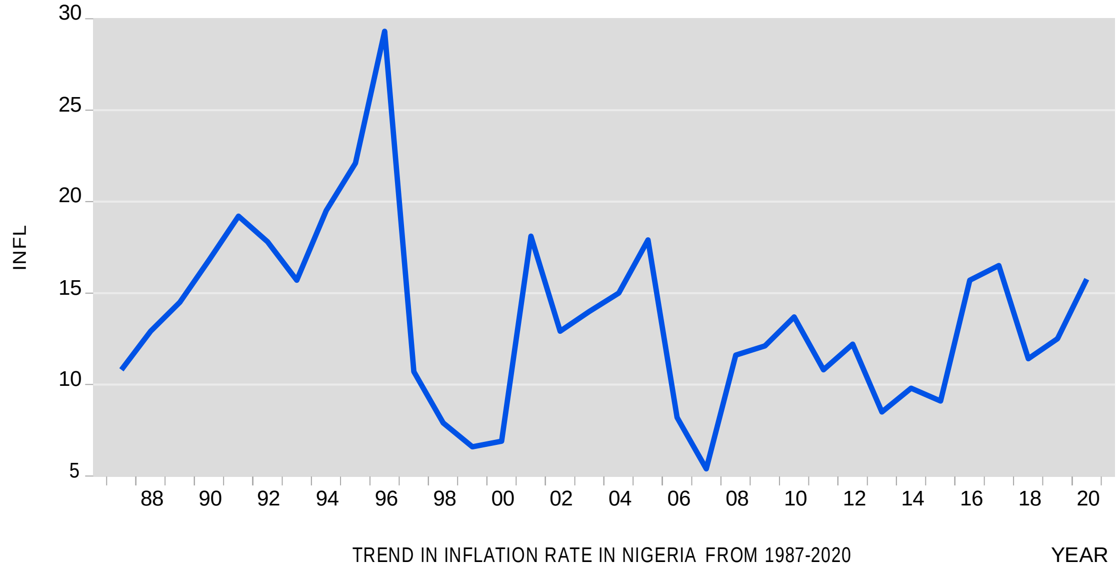

Figure 2. Trend analysis on inflation rate.

Figure 2 revealed that inflation rates were characterized by fluctuations within the period of study. This implies that the inflationary situation started in 1988 and slowed down in 1992, but rose again from 1998 and fell with fluctuations till 2000, as well as increased in 2020. This analysis implies that the government will be faced with the production of goods and services to reduce the price of goods and services.

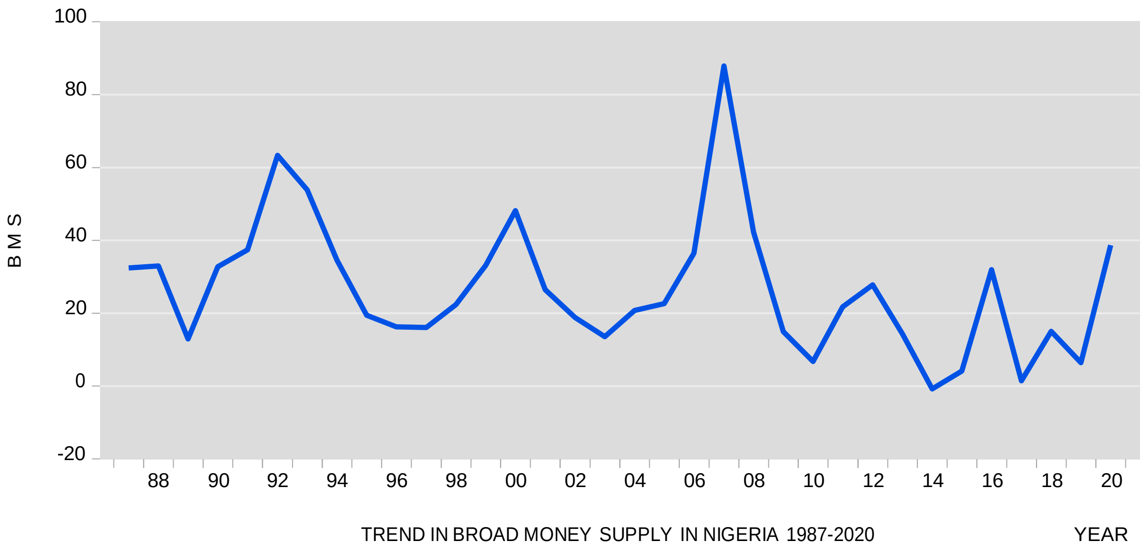

Figure 3. Trend analysis on broad money supply.

Figure 3 shows that the broad money supply was stable over time. Though there was a rise in the broad money supply which started from 1998 to 2020. In this instance, it shows that there is a high level of the broad money supply which tends an inflationary situation if there is no adequate production of goods and services. Therefore, the government should ensure an increase in the production of goods and services.

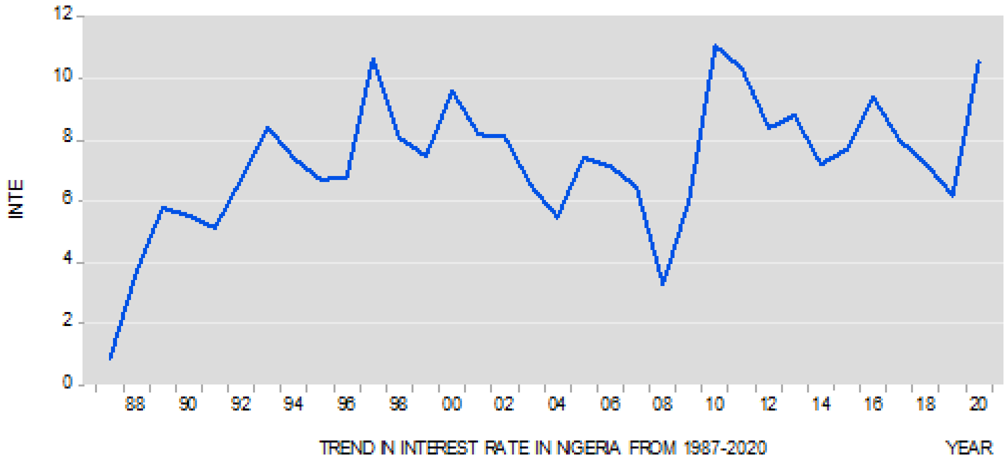

Figure 4. Trend analysis on interest rate.

Figure 4 indicates that there was an increase in interest rates from 1987 as well as fluctuations. Interest rates became very high in 2020. The trend shows instability in the interest rates and consequently, discourages foreign and domestic investors from borrowing and the resultant effect is the rating of government performance low in the management of monetary policies.

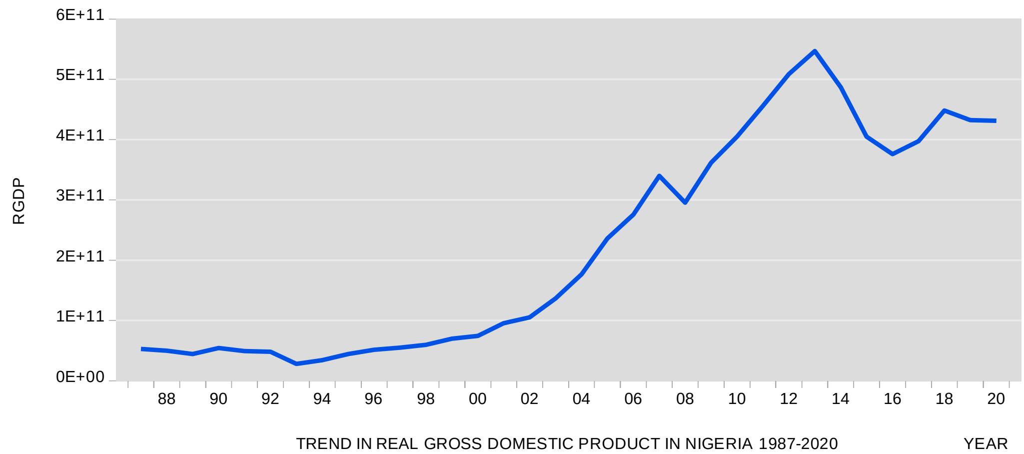

Figure 5. Trend analysis on real gross domestic product.

Figure 5 indicates that the real gross domestic product is characterized by rising fluctuations with a slow rise from 1987 to 2008. It fell a little bit in 2009 and rose from 2010 to 2014. With fluctuations in falling and rising in 2020. The implication is that it will influence the per capita income since the situation might affect the production of goods and services as a result of low sectorial performance based on the inefficiency of industries.

Table 1. Descriptive statistics.

	PC	**INFL**	**INTER**	**BMS**	**RGDP**
Mean	1293.438	13.55000	7.166875	26.88438	198.8106
Median	768.5000	12.90000	7.300000	22.45000	100.1450
Maximum	3223.000	29.30000	11.06000	87.80000	546.7000
Minimum	270.0000	5.400000	0.870000	-0.800000	27.75000
Std. Dev.	941.4966	5.058433	2.117066	18.39444	173.7914
Skewness	0.592275	0.860353	-0.712068	1.253462	0.626818
Kurtosis	1.850897	4.195977	4.204809	5.223149	1.825483

Jarque-Bera	3.631462	5.854919	4.639638	14.96942	3.934789
Probability	0.162719	0.053533	0.098291	0.000562	0.139821
Sum	41390.00	433.6000	229.3400	860.3000	6361.940
Sum Sq. Dev.	27478892	793.2200	138.9411	10489.02	936306.5
Observations	32	32	32	32	32

Table 1 shows the descriptive statistic of the time series in the above table revealed that between 1987-2020, Pc, Inflr, Inter, bms, rgdp, averaged, 1293. 438, 13.55000, 7.166875, 26.88438 and 198.8106 respectively. The range of variable over the period of study is 270.000 to 3223.000 for Pc, 5.400000 to 29.30000 for Inflr, 0.870000 to 11.06000 for Iner, 87.8000 to 22.45000 for Bms, 27.75000 to 546.7000 for rgdp. The result of the descriptive statistic shows instability in the per capita income and the selected macroeconomic variables in the period of study in Nigeria. This is evidenced in the standard deviation minimum and maximum. Therefore, this called for a probe of the feature of the data by employing other econometric tools for the analysis.

Table 2. Correlation matrix.

	PC	INFL	INTER	BMS	RGDP
PC	1	-0.3945456481487794	0.2491684517828096	-0.2992913203351874	0.991738011358011
INFL	-0.3945456481487794	1	-0.1071328971051464	-0.1407976461657394	-0.3674804697394418
INTER	0.2491684517828096	-0.1071328971051464	1	-0.2049316593281238	0.2870445467967488
BMS	-0.2992913203351874	-0.1407976461657394	-0.2049316593281238	1	-0.336556623013917
RGDP	0.991738011358011	-0.3674804697394418	0.2870445467967488	-0.336556623013917	1

Table 2 shows the correlation between the dependent and the independent variables. the table revealed that the variables have a weak relationship with per capita income. Except for real gross domestic product and inflation rate. There is the absence of a weak correlation among the explanatory variables. In this instance, all the independent variables can be included in the model for further clarification

Table 3. Unit Root Test Augmented Dickey fuller (ADF) unit root test result for per capita model.

Variables	**Variables at levels**	**Variables at first difference**	**Order of integration**
PC1	-3.105969		1(0)
Inflr	-3.427464		1(0)
Inter	-3.888639		1(0)
BMS		-3.427362	1(1)
Rgdp	-3.399248		1(0)

The result in Table 3 indicates that per capita income (PC1) the inflation rate (Inflr), and interest rate. (Inter) and real gross domestic product (Rgdp) attained stationary at levels 1(0) while, broad money supply attained 5% stationary at first difference 1(1).

Table 4. Cointegration test.

F-Bounds Test		**Null Hypothesis: No levels of relationship**		
Test Statistic	*Value*	*Sign if.*	*I(0)*	*I(1)*
			Asymptotic: n=1000	
F-statistic	4.648400	10%	2.2	3.09

K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	29		Finite Sample: n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
			Finite Sample: n=30	
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

Table 4 shows the bound test result for the per capita income model. The result revealed that there is a long-run relationship between the dependent variable (per capita income) and explanatory variables given the F statistic and critical value. This situation shows that there is a bound among the variable. This is a confirmation of the estimation of an error correction in the per capita model.

Table 5: Long-run Coefficient of the Variables

Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
INFL	-32.91157	60.21054	-0.546608	0.6081
INTER	49.52481	184.0688	0.269056	0.7986
BMS	2.574380	5.944407	0.433076	0.6830
RGDP	7.746417	5.497648	1.409042	0.2179
C	97.29381	969.6304	0.100341	0.9240

Table 5 result shows that real gross domestic product has a positive significant effect on per capita income at 10%, while, other variables do not have a significant impact on per capita income, within the period of study, the result implies that real gross domestic product brought about an increase in per capita income within the period of study.

Table 6: Short-run ARDL Error correction model.

ARDL Error Correction Regression				
Dependent Variable: D(PC)				
Selected Model: ARDL(2, 4, 4, 4, 4)				
Case 2: Restricted Constant and No Trend				
Date: 03/02/23 Time: 04:26				
Sample: 1987 2020				
Included observations: 28				
ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PC(-1))	-0.721022	0.119884	-6.014325	0.0018
D(INFL)	-1.569796	0.434807	-3.610331	0.0154
D(INFL(-1))	-0.093464	0.509780	-0.183341	0.8617
D(INFL(-2))	-0.771921	0.505148	-1.528107	0.1870
D(INFL(-3))	-6.913062	0.622078	-11.11286	0.0001
D(INTER)	-27.16638	1.962797	-13.84065	0.0000
D(INTER(-1))	-13.55253	2.335770	-5.802169	0.0021
D(INTER(-2))	-3.953326	1.496884	-2.641037	0.0459

D(INTER(-3))	-12.80124	1.729291	-7.402592	0.0007
D(BMS)	0.373647	0.130589	2.861250	0.0354
D(BMS(-1))	-0.051211	0.144843	-0.353563	0.7381
D(BMS(-2))	-0.988913	0.164055	-6.027932	0.0018
D(BMS(-3))	-0.299729	0.134668	-2.225688	0.0766
D(RGDP)	6.765149	0.066380	101.9157	0.0000
D(RGDP(-1))	3.946640	0.810431	4.869807	0.0046
D(RGDP(-2))	-0.112900	0.085860	-1.314928	0.2456
D(RGDP(-3))	0.583989	0.103097	5.664465	0.0024
CointEq(-1)*	0.114816	0.006932	16.56334	0.0000
R-squared	0.999503	Mean dependent var		52.32143
Adjusted R-squared	0.998658	S.D. dependent var		240.8502
S.E. of regression	8.822641	Akaike info criterion		7.448615
Sum squared resid	778.3900	Schwarz criterion		8.305032
Log likelihood	-86.28060	Hannan-Quinn criter.		7.710430
Durbin-Watson stat	3.587033			

Table 6 result indicates that, lag three inflation rate, current year interest rate, lag three interest rate and lag two broad money supply have a negative significant impact on per capita income. While, current year real gross domestic product, lag three real gross domestic product have a positive significant impact on per capita income in the period of study. The result shows that variables in the model adjusted slowly (0.11) to changes in the long-run equilibrium. The R^2 (0:99) shows 99% of verifications in per capita income attributed to the explanatory variables in the model.

Table 7: Post estimation Diagnostic Test for Per Capita Income Model

Diagnostic Test	**F Statistic**	**Probability**
Jarque Bere test for normality	0.693	0.706
Breusch Godfrey serial correlation limited test	5.765	0.093
Heteroskedasticity test	3.026	0.11
Ramsey present test for specification error	0.151	0.88

Table 7 reveals that the residual is normally distributed around the mean. Therefore, there is no evidence of auto-correlation in the model as revealed by the serial correlation LM test probability value of 0.706. The result of the heteroskedasticity test shows that there is a constant presence of variance. The Ramsey preset result indicates that no variable is missing in the model as indicated by a probability value of 0.88. This indicates that the model is properly specified and also good for prediction.

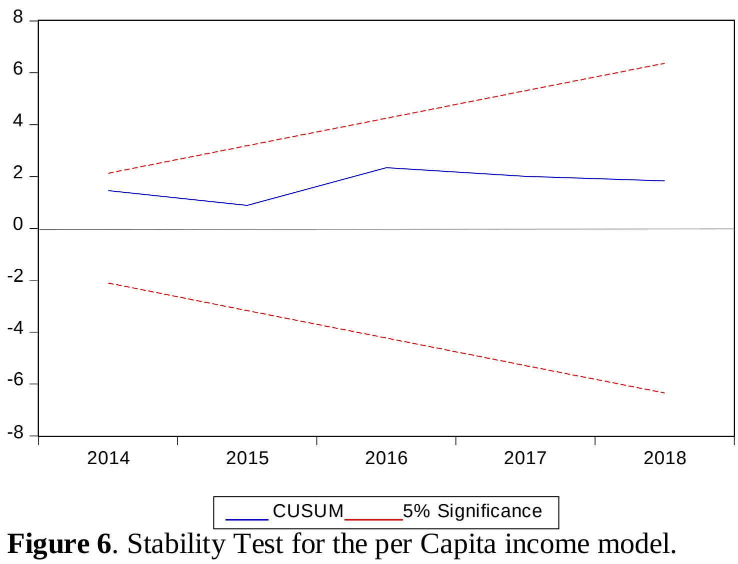

Figure 6. Stability Test for the per Capita income model.

Figure 6 Stability test is conducted to show that the variables (dependent and independent) are connected in the long run and short run. In carrying out a stability tests it is important to corporate the short-run dynamics and stability in the long run parameters of the model. In doing this the study adopted the cumulative sum of recursive residual for the stability of the short-run dynamics and long-run parameters of the model. It is a necessary condition that the cusum residual value stays within the 5% critical bound represented by the strength line as shown above. The cusum did not cross the 5% critical line, therefore, one can conclude that estimated parameters in the short-run and long-run of the per capita income model existed and were relatively stable throughout study.

CONCLUSION

The empirical investigations on the relationship between macroeconomic fundamentals in governance and sustainable economic development revealed as follows; There is the long-run relationship between governance and macroeconomic variables as revealed in the co-integration test conducted in the analysis. This implies that change in the selected macroeconomic variables will influence government administration, especially in the areas of policy implementations in respect of interest rate and monetary policy, broad money supply, and inflationary stationary situation as the case may be. Hence, proper management of macroeconomic variables will promote efficiency in government administration. Similarly, in the long run, inflation rate, interest rate and broad money did not impact per capita income. Above all, proper management of interest rate will encourage investors to borrow funds for investment and consequently, create employment opportunities as well as reduce poverty rate in Nigeria. Therefore, the government of Nigeria should ensure that interest rate does not fluctuate. In the same vain, the broad money supply should be controlled as much as possible, especially the M1 and M2. Considering the fact that too much money chasing few goods, this will bring about an inflationary situation which will lead to a low purchasing power of the local currency. In this instance, there is need for the improvement in gross domestic product which will increase per capita income as well as encourage of the export of goods in Nigeria.

Recommendations for Policies

Control of Inflationary Situation

Because the inflationary situation is mostly caused by too must money Chasing few goods. It becomes imperative for a responsive government to embark on massive production of goods and services. Local investors can be given grants and aid for their support to enhance productivity and consequently, reduction of the inflationary situation which Is not healthy for any government.

Increase in Real Gross Domestic Product

Based on the analysis, real gross domestic product determines the level of government performance in Nigeria and another part of the world. It becomes imperative for government to support sectorial development to increase real gross domestic product. Reduction of unemployment increases productivity since more people are involved in the labour force. In this instance, there is the tendency or possibility of reducing the inflationary situation which is one of the cardinal objectives of good governance all over the world.

Interest Rate stability

Interest is one of the macroeconomic variables that influence good governance. This means that a stable interest rate regulates the activities of the financial institutions as it concerns credit facilities. The interest rate in an economy has a multiplier effect since interest paid in loans or credit facilities is transferred to the consumer through goods and services. Therefore interest rate which has a relationship with the government, based on the empirical analysis requires proper management by the government for better administration and sectorial performance in Nigeria.

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