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Impact of Aggregate Government Expenditure on the Performance of the Education Sector In Nigeria

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ABSTRACT: This study examined the impact of aggregate government expenditure on the performance of the education sector in Nigeria. This was necessitated by the incessant strikes by teachers and lecturers in schools and higher institutions in Nigeria, in spite of the seemingly increase in government budget to the education sector in the country. Two hypotheses were formulated in line with the objectives of the study. The variables for the performance of the education sector were total school enrolment (TSE) and contribution of education sector to gross domestic products (CEGDP) in Nigeria, while aggregate government expenditure to the education sector was used as the independent variable, poverty rate (POVR) was introduced as a control variable. The study adopted ex-post facto research design. The stated hypotheses were analyzed with auto regressive distributive lag method (ARDL). The theoretical framework was rooted on the Keynesian theory, with data on the variables sourced from the Central Bank of Nigeria Statistical Bulletin Covering a period of 43 years (1981-2023). Findings from the study revealed that aggregate government expenditure to education sector on total school enrolment in Nigeria is not significant and aggregate government expenditures to education sector on the contribution of education to gross domestic product in Nigeria are positive and insignificant. It was recommended that Government of Nigeria should increase her expenditures to the education sector as this would assist in the provision of basic educational equipment needed for learning and also facilitate quick development in the education sector. It will also reduce the incessant strikes experienced by the sector and enhance Total School Enrolment in Nigeria

Keywords: Government expenditure, Education Sector Performance, GDP

INTRODUCTION

The total amount of money used by the government to fund the nation's primary, secondary, and post-secondary educational levels is known as government expenditure on the education sector. It is frequently distributed through capital and recurrent expenses. The cost of infrastructure improvements, such as classroom buildings, instructional supplies, dorms, libraries, and

other long-term facilities, are covered by the capital expenditure components. The recurring costs include short-term operating expenses as well as operating charges such as teacher/lecturer salaries and allowances.

It is believed that total government spending on education may have an impact on Nigeria's educational system's performance. The result of education or the degree to which a student, instructor, or institution has met their learning objectives, is the performance of the education sector. Although continuous assessment and total school enrolment are frequently used to measure academic performance, there is disagreement over the most effective methods and the most crucial factors. (Uwaoma, Nwangburuka, & Anwanane, 2022). Based on the foregoing, the study will focus on effect of aggregate government expenditure to the education sector and performance of education sector in Nigeria.

Many factors contribute to the perceived poor performance of Nigeria's educational system, including frequent strikes by primary and secondary school teachers and lecturers in the nation's tertiary institutions. Most of the stakeholders in the education sector attribute these problems to poor funding of the sector by past and current governments, which frequently makes it difficult to pay salaries and other benefits to employees in their respective institutions. Hence, instructors and lecturers have not given their all to the students, and as a result, the institutions have produced graduates who are only partially complete. This is thought to have an impact on the education sector's contribution to Nigeria's Gross Domestic Product (GDP)

Additionally, government excessive involvement in the administration of these institutions, such as the Integrated Personnel and Payroll Information System (IPPIS) issue, the overcrowding of classrooms, and the poor administration of the nation's institutions by some vice chancellors, is thought to have caused staff brain drain and impacted on students and their enrollment in schools as well as the declining quality of the nation's tertiary institutions (Ajibola, 2020).

Objectives of the Study

The broad objective of the study is to ascertain the effect of aggregate government expenditure to the education sector on performance of education sector in Nigeria. The specific objectives are to:

1. Evaluate the influence of aggregate government expenditure to the education

sector on the total school enrolment in Nigeria

2.Investigate the effect of aggregate government expenditure to the education sector on the contribution of education to gross domestic product in Nigeria

2. LITERATURE REVIEW

Influence of aggregate government expenditure to the education sector on the total school enrolment in Nigeria

According to Adewumi and Enebe (2019), the Nigerian government's budget allocation to the education sector has been completely insufficient, or a certain amount that was allegedly budgeted for the sector was not actually spent, and this has contributed to the sector's slow effect. Additionally, Adeyemi (2020) noted that government spending on the education sector has been decreasing over time, as the proportion of total spending to GDP. Nigeria, for example, spent less than 26% of its GDP on education between 1980 and 2010, which is significantly less than the minimum amount that the United Nations Educational, Scientific, and Cultural Organization (UNESCO) recommends. Nigeria's education system has performed poorly over the years due to inadequate government funding, which has also affected the sector's contribution to GDP, per capita GDP, and other measures of human development (Adowa, 2014; Ekwunife, Emuveyan, & Nduka, 2021). Nigeria has not been able to make sufficient investments in the education sector, despite the sector's significant contribution to the country's economy. According to Adowa (2014), enrolment ratio, inadequate funding, the policy environment and quality are the main factors limiting the expansion of the Nigerian education sector.

The majority of Nigerian schools suffer from overcrowding, inadequate management, poor sanitation, and poor intra-sectorial allocation as a result of this inadequate funding. These discrepancies have a number of attendant and combined effects, including the creation of subpar graduates, a lack of educational resources and materials, such as qualified teachers and brain drain to the public sector, a lack of classrooms, a lack of institutional inputs, and many other issues (Eweniyi, 2018).

According to Nduka, Ananwude, & Osakwe (2019), the Nigerian government has given the educational sector very little attention, according to statistics on the annual percentage of government funds allotted to it.

The history of Nigeria's poor educational status can be linked to the Structural Adjustment Programme (SAP) and the sharp drop in oil prices in the early 1980s, which resulted in a decrease in government spending on the education sector. The country's literacy rates declined as a result of this problem, which also led to unpaid teacher salaries, deterioration of education at all levels, and resurfaced industrial actions in universities and schools (Ibrahim and Awang, 2018; Logan, Okanya, Nduka, Manasseh, Ede, Onoh, Omeje, Ozioko, & Agu, 2025).

Contribution of Education Sector to gross domestic product in Nigeria

The gross domestic product depends on a workforce that is highly educated and skilled. Researchers generally agree that education reduced the incidence of poverty, social imbalances, and income inequality, which in turn impacted economic growth. Additionally, it improves the lives of the needy and impoverished.

Reducing poverty and achieving faster economic growth continue to be Nigeria's top macroeconomic goals. It is necessary to identify certain factors that have the capacity to accelerate growth in order to accomplish this noble goal. Human capital is a key driver of economic growth and higher productivity among all the contributing factors (Adamu, 2003 cited in Aigbedion, et al., 2017). Therefore, a major factor in economic growth and increased productivity in developing nations like Nigeria is the efficient investment in human capital through the delivery of high-quality education.

Poverty Rate

Measuring poverty is difficult and differs between nations and areas, claims Beja (2021). The poverty line, an income threshold established by governments or international organizations to define who is deemed poor, is the most widely used indicator. But poverty is a multifaceted problem, and other metrics like the Multidimensional Poverty Index (MPI) and the Human Development Index (HDI) consider more than just income (Beja, 2021). According to the National Bureau of Statistics' (NBS) 2022 Multidimensional Poverty Index survey, 133 million Nigerians, or 63% of the country's population, live in multidimensional poverty. When people or communities do not have the means, skills, or opportunities to meet their basic needs and

maintain a respectable standard of living, it is referred to as poverty. Poverty is a complex

problem that extends beyond the mere lack of money or material belongings. It includes a variety of deprivations, such as insufficient access to clean water, sanitation, education, healthcare, housing, nutrition, and work opportunities (Lahouij, 2017; Ogunewe, Ananwude, & Nduka, 2020; Gabriel, Afamefuna, & Baridam, 2016).

According to Ohio-Ehimiaghe (2012), there are two types of poverty: absolute poverty and relative poverty. The most extreme kind of poverty is absolute poverty, which is defined by a lack of basic necessities like clothing, food, and shelter. Conversely, relative poverty describes a situation in which the living standards of individuals or households are substantially lower than the average for their society.

Theoretical Framework

The Keynesian Theory

Keynes introduced Keynesian theory in 1936. According to Keynesian theory, increases in government spending have an expansionary impact on employment and income by increasing aggregate demand. On the other hand, government spending discourages private investment by raising interest rates, which eventually slows economic growth and lowers the rate of capital accumulation. Keynes also thought of government spending as an exogenous factor that supports economic expansion. Therefore, through the multiplier effects on aggregate demand, an increase in government spending would probably result in an increase in output, profitability, and employment. Keynes' introduction of government expenditure (G) broadens the model used to determine national income and becomes

$$AD=C+I+G$$

Where:

AD represents aggregate demand which equals the sum of consumption (C), Investment (I), and government expenditure (G). The government expenditure has direct and positive impact on the GDP. An increase in government expenditure will boost aggregate demand, resulting in higher level of national income. All things being equal, an increase in government spending has an expansionary effect on output and income while a decrease has contractionary effect on output and income.

The neoclassical growth models argued that government fiscal policy does not have positive effect on the growth of an economy. On the contrary a significant number of

scholars have agreed that fiscal policy is a potent tool in promoting growth and

improving failures arising from the inefficiencies of the market. Hence, government fiscal policy could be a vital tool of militating against failure arising from market inefficiencies (Johnson and Wasiu, 2016)

Empirical Review

Onoghware and Olele (2024), examined the effects of government recurrent and capital health and education expenditure on the growth process of the Nigerian economy from 1980 to 2022, using the ECM test approach to cointegration. Annual data were sourced from the National Bureau of Statistics, Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank Indicators (various issues). The Augmented Dickey Fuller test was used to check the level of stationarity while the ECM test to cointegration was adopted to justify the long-run relationship. The existence of a positive relationship was found between government health and education expenditure and RGDP growth of the Nigerian economy. Therefore, an improved health sector due to increased budgetary allocation would trigger a positive growth on the educational sector. The study recommends that for quality human capital development, the government should increase her spending on health and education and ensure that policies are implemented with high level of transparency, honesty and accountability in Nigeria. Furthermore, an increase in government spending on the anti-corruption agencies would encourage the arrest and prosecution of those who divert and embezzle public funds in the country.

Ihugba, Ukwunna and Obiukwu (2019), conducted a study on government education expenditure and its impact on primary school enrolment in Nigeria. The study was analysed with bounds testing (ARDL) approach to cointegration. The study covered from 1970 to 2017. The findings of the study revealed that the variables of interest are bound together in the long-run when primary school enrolment as the dependent variable, there was an insignificant relationship between government education expenditure on primary school enrolment. The study recommended that government policies directed at improving the expenditure towards education should largely be increased and money meant for the education sector should be disbursed with high degree of transparency

Eravwoke and Blankson (2019), examined the effect of tertiary school enrolment on economic growth in Nigeria. The study was analysed with Ordinary Least Square

estimation techniques, unit root test, co-integration test and the variance decomposition. The findings of the study revealed that tertiary enrolment is veritable tools through which appreciable economic growth can be enhanced in Nigeria. The study equally observed that tertiary school enrolment and government recurrent expenditures are statistically significant in explaining growth in the Nigerian economy. It was recommended that government should as a matter of urgency give immediate employment to all NCE graduates, this will encourage and increase the number of people seeking enrolment in the colleges

Muideen and Egerue (2019), conducted a study on the relationship between government spending on education sector and economic growth in Nigeria. The study covers the period - 1981 to 2016. The study adopted ordinary least square regression method to analyse the hypotheses of the study. The study adopted ex-post facto research design. The finding of the study revealed that education funding by the Nigeria government has a positive and significant impact on economic growth in Nigeria, and capital expenditure on education has a greater impact. It was recommended that the government should allocates a significant proportion of its budget to education sector, and while the United Nations sets the yardstick at 26% of the government budget for effective funding of education, a higher proportion of the Nigeria government budget was recommended to boost the effectiveness of the Nigeria economy through improved education.

Gap In The Literature

From the empirical works reviewed above there exist a gap in the analytical aspect of the work. Most of the past related works done, adopted multiple regression only and other analytical techniques such as chi-square and correction coefficient. However, this study adopted Autoregressive distributed lag (ARDL) and E-view 10 to analysed the data. Also, most of the works reviewed adopted literacy rate as a proxy for education performance, this study considers total school enrolment. Hence, these are the gaps the study intends to fill.

3. METHODOLOGY

The study adopted *ex-post facto* research design. This was because the study dealt with secondary data. The study area is Nigeria. The secondary data used was obtained from the Central Bank of Nigeria (CBN) statistical bulletin for the period 1981-2023. The reason for the choice of secondary data and its source was based on the fact that the data are

assumed to be reliable, suitable and adequate for the nature, scope and objectives of the study and therefore assumed to be error free.

Model Specification

For hypothesis 1,

TSE = F(AGEE, POVR)…….3.1

The mathematical regression model for the equation above is transformed to the econometric model: thus:

$TSE = \beta o + \beta_1 AGEE + \beta_2 POVR + Ut$……..…….3.2

Where:

TSE = Total School Enrolment in Nigeria

AGEE = Aggregate Government Expenditure on Education

POVR = Poverty Rate

βo = Intercept

β_1-β_2 = Parameter estimates

U_t= error terms

For hypothesis 2

CEGDP = F (AGEE, POVR) …….3.3

The mathematical regression model for the equation above is transformed to the econometric model: thus:

$CEGDP = \beta o + \beta_1 AGEE + \beta_2 POVR + Ut$……..……3.4

Where:

CEGDP = Contribution of Education to Gross Domestic Product in Nigeria

AGEE = Aggregate Government expenditure to Education

POVR = Poverty Rate

βo = Intercept

β_1-β_2 = Parameter estimates

U_t= error terms

Estimation Technique

Pre estimation test

Descriptive statistic

A descriptive statistic (in the count noun sense) is a summary statistic that quantitatively describes or summarizes features from a collection of information, while descriptive statistics (in the mass noun sense) is the process of using and analyzing those statistics. Descriptive statistics is distinguished from inferential statistics (or inductive statistics) by its aim to summarize a sample, rather than use the data to learn about the population that the sample of the data is thought to represent. This generally means that descriptive statistics, unlike inferential statistics, is not developed on the basis of probability theory and are frequently non-parametric statistic.

Correlation coefficient

This test was carried out to ascertain the relationship between the stated variables in the study. The figure spans from +1 to -1.

Multiple regression

The test was carried out to ascertain the causes and effect of the relationship that exist between variables.

Unit root test

In regressing a time series variable on another time series variable(s), one might obtain a high R^2 even though there is no meaningful relationship between the variables. This situation shows the problem of spurious or nonsense regression according to Gujarati (2007). The time series variables when used in their explosive form often leads to spurious regression results which mislead policy. In order not to obtain spurious regression results, the variables will be tested for stationarity employing the Augmented Dickey — Fuller (ADF) test.

Co-integration test

This test was employed to establish whether the variables have a long-term stable equilibrium relationship between them. The Engle Granger (2015) two — step approach was used. First, the residuals were generated, then, using the ADF technique, a test for the stationarity of the generated residuals. If found stationary, then it will be concluded that there is cointegration.

Error correction model

The error correction mechanism (ECM) as developed by Engle and Granger is a means of reconciling the short- run behavior of an economic variable with its long-run behaviour (Gujarati and Porter, 2009). According to Hylleberg and Mizon (2016), the error correction formulation will provide an excellent framework within which it is possible to apply both data information and

the information available from economic theory.

Operational Definition of Variables

The operational variables are defined and described in the table below:

Table 3.1 Operational definition of variables

Variables		Code	Proxy	Source
Independent Variable	Aggregate Government expenditure to Education	(AGREE)	Aggregate Government expenditure to Education	Adesiyan (2016) and CBN (2022)
Dependent Variable	Performance of the Education Sector	(TSE) and CEGDP	Total school enrolment Contribution of Education to Gross Domestic Product in Nigeria	(Ajibola, 2020) and CBN (2022)
Moderating Variable	Poverty Rate	(POVR)		(Uzochukwu, 2015).

Data Presentation, Analysis And Discussion Of Findings

Table 4.1 Descriptive Analysis

	TSE	CEGDP	AGEE	POVR
Mean	32769.31	725.6247	153.0925	23.97000
Median	29071.58	233.0600	71.74500	25.00000
Maximum	118486.7	2910.230	664.6385	40.00000
Minimum	15752.58	3.400000	0.170000	10.20000
Std. Dev	18691.37	993.0625	186.3798	10.52697
Skewness	2.528410	1.206440	1.030587	0.036690
Kurtosis	12.03254	2.895063	2.796853	1.469736
Jarque-Bera	178.5969	9.721665	7.149506	3.911820

Probability	0.000000	0.007744	0.028022	0.141436
Sum	13107720	29024.99	6123.698	958.8000
Sum Sq. Dev	1.36E+10	38460752	1354760	4321.864
Observations	40.00000	40.00000	40.00000	40.00000

Source: Researcher Computations from E-Views 10

The descriptive analysis of the data collected from the study was carried out and the results are shown in table 4.1, total school enrolment (TSE), contribution of education sector to gross domestic product in Nigeria (CEGDP), aggregate government expenditure on education (AGEE) and a control variable - poverty rate (POVR) have JarqueBera probabilities of less than 0.05 and therefore are not normally distributed, all the series were transformed in order to standardize the magnitude of the variables.

Table 4.2: Correlation Coefficient

	TSE	CEGDP	POVR	AGEE
TSE	1.000000			
CEGDP	0.982807	1.000000		
GCEE	0.990227	0.994805		
GREE	0.984954	0.998001		
POVR	0.996256	0.986594	1.00000	
AGEE	0.986181	0.997888	0.99056	1.0000

Source: Researcher Computations from E-Views 10

Correlation coefficient measures the nature of relationship that exists between two or more variables. It should be noted at this point that correlation measures nature of relationship and not causality. This means that correlation cannot be used to test for cause-effect relationship. Correlation can be positive (>0) or negative (<0). A positive correlation means that two variables move in the same direction while a negative correlation means they move in opposite direction. Therefore, in examining the association among the variables, we employed the Pearson correlation coefficient (correlation matrix) and the significance of the relationship between variables, total school enrolment (TSE), contribution of education sector to gross domestic product of Nigeria (CEGDP), poverty rate (POVR) and aggregate

government expenditure on education (AGEE).

The above result shows that there exists a strong positive relationship between total school enrolment (TSE) and contribution of education sector to gross domestic product of Nigeria (CEGDP) (TSE/CEGDP= 0.982807). There also exists a strong positive association between TSE and other explanatory variables such as TSE/POVR and TSE/ AGEE, (0.984954, 0.996256 and 0.986181) respectively. In the case of, CEGDP/POVR and CEGDP/AGEE (0.986594 and 0.997888), there exists a strong positive relationship between the stated variables. There also exists a strong relationship between GCEE/AGEE with (0.997904) respectively. Finally, there is strong relationship between POVR/AGEE with 0.990558. This result shows that all the variables were positively related to each other.

Unit Root Test (Based on Linear Trend For Each Series)

The test for unit root test of the data was carried out based on the Augmented Dickey Fuller (ADF) unit root technique to ensure that none of series is integrated beyond order one i.e. I(1). The result obtained from the unit root is as follows

Table 4.3: Unit Root Test based on Linear Trend for each Series

Variables	Order of Integration	t-statistic @ 5% level	Prob.	REMARK
Total school enrolment (TSE)	Level	-3.529758		I(0)
Government capital expenditure	Level	-3.533083	0.2460	
on education (GCEE)	1st Different	-3.536601	0.0004	I(1)
Government recurrent expenditure	Level	-3.529758	0.9796	
on education (GREE)	1st Different	-3.580623	0.0064	I(1)
Contribution of education sector to gross domestic product of Nigeria (CEGDP)	Level	-3.548490	0.0015	I(0)
Aggregate government	Level	-3.529758	0.9738	
expenditure on education (AGEE)	1st Different	-3.221728	0.0489	1(1)
Poverty rate (POVR)	Level	-3.529758	0.2329	
	1st Different	-3.533083	0.0000	1(1)

Source: Researcher's Compilation from E-View 10.

From the unit root test based on linear trend, it is found that some of the variables achieved stationality at level, that is total school enrolment (TSE) and contribution of education sector to gross domestic product of Nigeria (CEGDP) while government capital expenditure on education (GCEE), government recurrent expenditure on education (GREE), aggregate government expenditure on education (AGEE) and poverty rate (POVR) as a control variable, were all stationary after first difference I(1). Having identified the mixed order of integration in the model, 1(1) and 1(0), the Unit Root Test Results based on constant, linear trend.

Co-Integration Test

Table 4.4: Co-integration Test Result.

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.432549	43.41654	47.85613	0.1227
At most 1	0.294631	21.88571	29.79707	0.3049
At most 2	0.202827	8.622429	15.49471	0.4015
At most 3	0.000223	0.008469	3.841466	0.9263

Source: Researcher's Compilation from E-View 10.

From the co-integration table above, trace statistic indicates no co-integrating equation at 5% degree of freedom and this implies that there exists a no long-run relationship among explanatory variables. Since, there is no cointegration, we go for error correction model to determine the short-run coefficient (marginal effect) that is, the existence or otherwise of short-run relationship between dependent variable and independent variables, speed of adjustment from short to long run equilibrium ie, whether the model is capable of adjusting towards long-run equilibrium. First, we conduct the unit root test on the error correction Term (ECT).

Model 1: $TSE = \beta o + \beta_1 AGEE + \beta_2 POVR + Ut$

$H0_1$: Analysis of the influence of Aggregate Government expenditure to education sector on the total school enrolment in Nigeria is not significant

Error Correction Mechanism

The outcome of the error correction mechanism (ECM) of the ARDL model was presented in Table below:

Table 4.5: Error correction mechanism

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-1.070724	0.160529	-6.669955	0.0000

Source: Author's computations using EViews 10.0

The estimated error correction coefficient of -1.070724 (0.0000) was significant, has the correct sign, and imply a fairly high speed of adjustment to equilibrium after a shock. Approximately 107% of disequilibria from the previous year's shock converge back to the long-run equilibrium in the current year.

ARDL Bounds Test For Co-Integration

The results obtained from the bounds test was presented in Table as shown below:

Table 4.6: Bounds test results for co-integration

Test Statistic	Value	K
F-statistic	10.24402	2
Critical Value Bounds		
Significance	N =1000 1(0)	I(1)
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5

Source: Author's computations using EViews 10

The computed F-statistics was 10.24402. Since, F-stat (10.24402) is greater than the upper-bound 1(1) at 5% critical value, the null hypotheses of no long run relationship among the series is rejected. The study concludes that long run relationship exists among the series; hence, the long run estimate should be reported and interpreted.

ARDL LONG-RUN COEFFICIENT ESTIMATES

The long-run coefficient estimates of the ARDL model was presented in Table below:

Table 4.7: Long-run coefficient estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26401.48	10276.28	2.569168	0.0146
TSE(-1)*	-1.070724	0.167654	-6.386524	0.0000
AGEE**	53.16439	30.39640	1.749036	0.0891
POVR**	29.38530	520.7966	0.056424	0.9553
C	26401.48	10276.28	2.569168	0.0146

Source: Author's computations using EViews 10.0

The result of the estimated coefficients of the long-run relationship in table 4.7 indicated that aggregate government expenditure to education sector (AGEE) has positive effect on school enrolment in Nigeria. The estimated coefficient of aggregate government expenditure to education sector (AGEE) (53.16439) implies that 1% increase in aggregate government expenditure to education sector (AGEE) will increase total school enrolment in Nigeria (TSE). by approximately ₦53.16439million all things being equal.

Table 4.7 above shows that aggregate government expenditures to education sector has a t-statistics of 1.749036 and probability of 0.0891. Since the P>0.05, do not reject HO_1. We therefore concluded that the aggregate government expenditure to education sector on the total school enrolment in Nigeria is not significant

Table 4.8: **Post estimation Test**

Test Conducted	Result Obtained	Remarks/Conclusion
Linearity	Probability of t-value from Ramsey Reset test = 0.9985	Since P(0.9985) > 0.05, the linearity assumption is desirable, meaning that there is model is correctly specified
Serial Correlation /Autocorrelation	Probabilities of obs-chi square (2) (0.5925) >0.05	There is no problem of serial/auto correlation in the series
Heteroscedasticity	Breusch-Godfrey Test probability of Obs Chi-square of 0.5925	Since 0.5202> 0.05, we conclude that there is no problem of heteroscedasticity

Source: Author's computations using E Views 10.0

The post estimation diagnostic tests indicate that there are no problems of serial correlation and heteroskedasticity and that stability diagnostic show no specification error.

The cusum test for model stability was employed to check for the stability of the parameters in the model. The result of the stability test is shown below

Stability Test

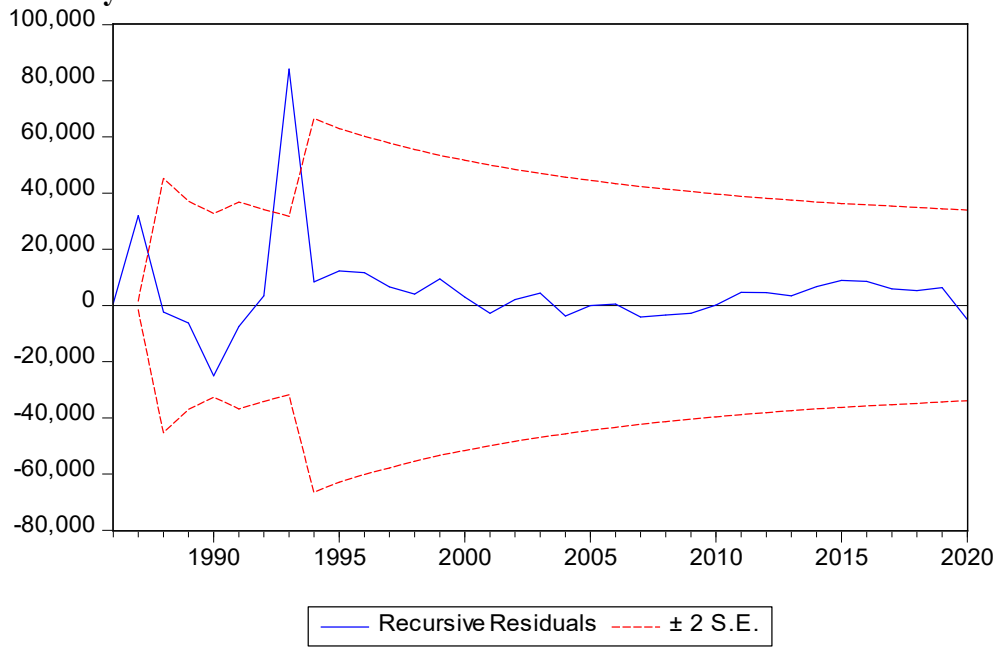
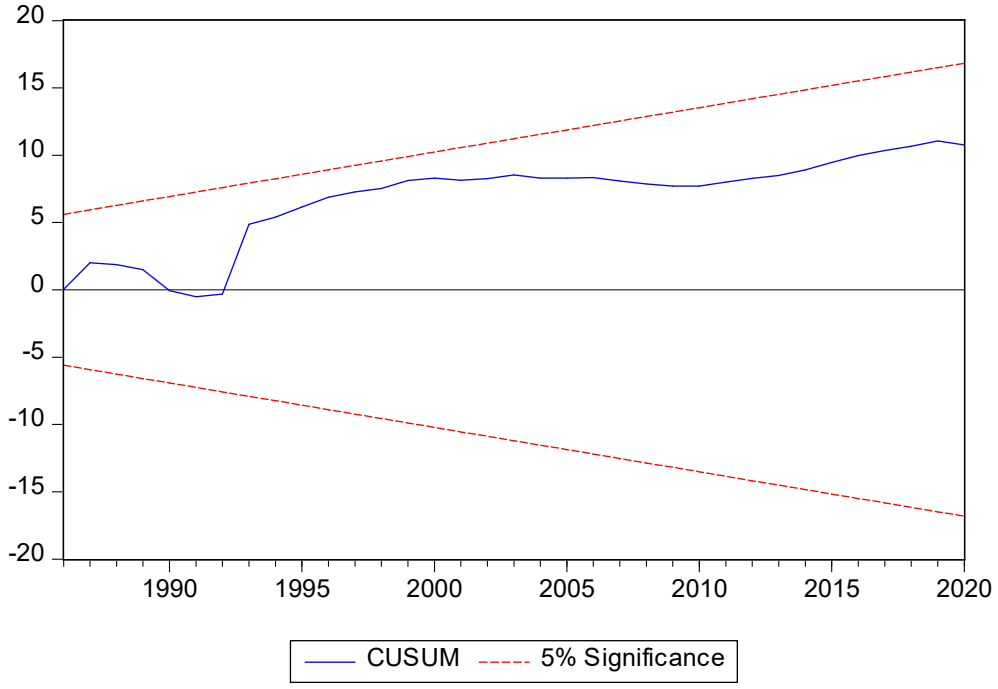


Fig 4-1: Result of the Recursive residuals



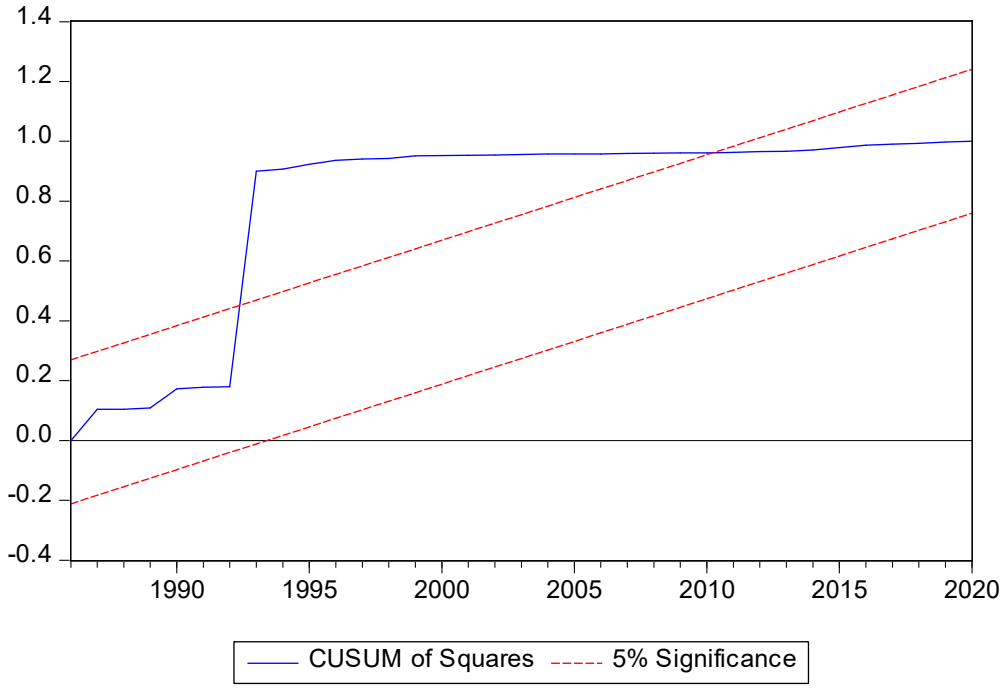


Fig 4-2: Result of the Stability Test

MODEL 2: CEGDP = AGEE + POVR

$H0_2$: Analysis of the effect of Aggregate Government Expenditures to Education sector on the Contribution of Education to Gross Domestic Product in Nigeria

UNIT ROOT TEST FOR ERROR CORRECTION TERM

The unit root test of the data was carried out based on the Augmented Dickey Fuller (ADF) unit root technique to ensure that none of series is integrated beyond order one i.e. I(1). The result obtained from the unit root is as follows:

Table 4.9: Unit Root Test based on Error Correction Term

Variables	ADF stat. (Levels)	5% critical Value	ADF.stat. First Difference	5% critical Value	Remark
Error correction term (ECT) with constant	-3.059322	-2.963972			I(0)

Error correction term (ECT) with constant linear trend	-3.809352	-3.568379			I(0)

Source: Author's computations using E-Views 10.0

Since Error correction term (ECT) is stationarity at level 1(0) for constant and constant linear trend, we proceed to run the short-run model as stated below,

ARDL SHORT-RUN COEFFICIENT ESTIMATES

The short-run coefficient estimates of the ARDL model was presented in Table 4.15 below:

Table 4.10: Short-run coefficient estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AGEE)	-0.220389	0.398518	-0.553023	0.5838
D(POVR)	-0.053793	7.260687	-0.007409	0.9941
ECT(-1)	-0.142374	0.063981	-2.225266	0.0326
C	75.40385	18.71734	4.028557	0.0003
R-squared	0.161032			
Adjusted R-squared	0.089121			
F-statistic	2.239311			
Prob(F-statistic)	0.100902			
Durbin-Watson stat	0.390994			

Source: Author's computations using E-Views 10.0

The result of the short-run dynamic coefficients associated with the long-run relationships obtained from the error correction model was given in table 4.15. The estimated error correction coefficient of 0.142374(0.0326) was highly significant, has the correct sign, and imply a fairly high speed of adjustment to equilibrium after a shock. Approximately 14.2% of disequilibria from the previous year's shock converge back to the long-run equilibrium in the current yea

ARDL BOUNDS TEST FOR CO-INTEGRATION

The results obtained from the bounds test was presented in Table 4.16 as shown below:

Table 4.11: Bounds test results for co-integration

Test Statistic	Value	K
F-statistic	6.915861	2
Critical Value Bounds		
Significance	N =1000 1(0)	I(1)
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5

Source: Author's computations using EViews 10

The computed F-statistics as shown in table 4.11 was 6.915861Since F-stat (6.915861) is greater than the upper-bound 1(1) at 5% critical value, the null hypotheses of no long run relationship among the series is rejected. The study concludes that long run relationship exists among the series hence the long run estimate should be reported and interpreted.

ARDL LONG-RUN COEFFICIENT ESTIMATES

The long-run coefficient estimates of the ARDL model was presented in table 4.12 below:

Table 4.12: Long-run coefficient estimates

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	26401.48	10276.28	2.569168	0.0146
CEGDP (-1)*	1.070724	0.167654	-6.386524	0.0000
AGEE**	1.016439	1.739640	0.584281	0.4891
POVR**	1.138530	1.207966	0.942518	0.2553

Source: Author's computations using EViews 10.0

The result of the estimated coefficients of the long-run relationship in table 4.12 indicated that Aggregate Government Expenditure on Education (AGEE), has a positive effect on Contribution of Education Sector to Gross Domestic Product of Nigeria (CEGDP) in

long run. The estimated coefficient of poverty rate (POVR)(1.138530) implies that 1% increase in poverty rate will increase on Contribution of Education sector to Gross Domestic Product of Nigeria (CEGDP) by approximately 1.138530 units in long run all things being equal.Table 4.12 above shows that aggregate government expenditures to education sector has a t-statistics of -0.584281 and probability of 0.4891. Since the P> 0.05, so accept HO_2 and concluded that aggregate government expenditures to education sector on the contribution of education to Gross Domestic Product in Nigeria are positive and insignificant.

Table 4.13: **Post estimation Test**

Test Conducted	Result Obtained	Remarks/Conclusion
Linearity	Probability of t-value from Ramsey Reset test = 0.1197	Since P(0.1197) > 0.05, the linearity assumption is desirable, meaning that there is model is correctly specified
Serial Correlation /Autocorrelation	Probabilities of obs-chi square (2) (1.375196) >0.05	There is no problem of serial/auto correlation in the series
Heteroscedasticity	Breusch-Godfrey Test probability of Obs Chi-square of 0.3948	Since 0.3948 > 0.05, we conclude that there is no problem of heteroscedasticity

Source: Author's computations using EViews 10.0

The post estimation diagnostic tests indicate that there are no problems of serial correlation and heteroskedasticity and that stability diagnostic show no specification error.

Stability Test

The cusum test for model stability was employed to check for the stability of the parameters in the model. The result of the stability test is shown below:

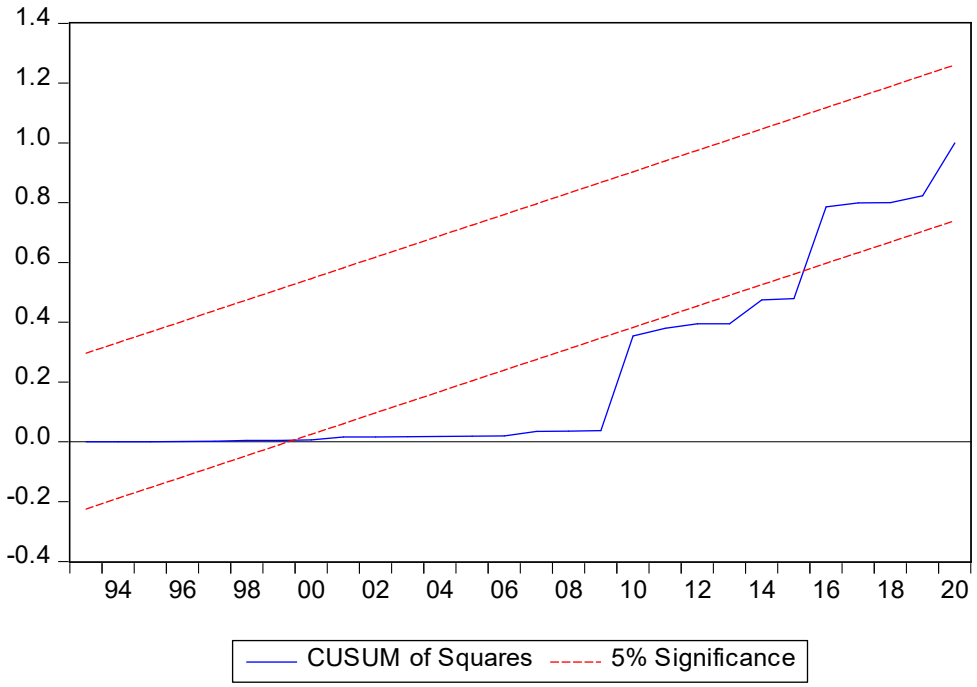


Fig 4-3: Result of recursive residuals

The recursive residuals indicates that the model is largely stable since the blue line lies within the red ridge lines except in the earlier period of the study (1990 to 1995)

Discussion of Findings

The result of first hypothesis revealed that the influence of aggregate government expenditure to education sector on the total school enrolment in Nigeria is not significant. The result holds on the ground that over the years there were calls from the major stakeholder on the government to increase the education's budget for it to be commiserated with the total school enrolment in Nigeria so as to be able to take care of the need of the education sector. However, past and the present governments for some years have not yielded to the calls. This also has effect on the total school enrolment in Nigeria. The result is in line with the finding of Ihugba *et al*, (2019) who agreed that aggregate government expenditure to education sector on the total school enrolment in Nigeria is not significant

The result of the second hypothesis revealed that the effect of aggregate government expenditures to education sector on the contribution of education to gross domestic product in Nigeria are positive and insignificant. The result holds on the ground that over the years Nigeria government past

and present have been allocating funds to the education sector to enhance the growth of the sector. The result is in line with the finding of Anyanwu and Erhijakpor (2007) who supported that, aggregate government expenditures to education sector on the contribution of education to Gross Domestic Product in Nigeria is significant while Ihugba *et al*, (2019) disagreed that aggregate government expenditures to education sector on the contribution of education to Gross Domestic Product in Nigeria is significant

Implications to Research and Practices

The findings of the study revealed that:

1.Aggregate government expenditure to education sector on total school enrolment in Nigeria is not significant. This implies that the seemingly huge spending by government to this sector is not impactful. There has been calls from major stakeholders on the government to increase her spending to this sector.

Also, this accounts for lack of infrastructures in most public schools and students/pupils studying under trees.

2. Aggregate government expenditures to education sector on the contribution of education to Gross Domestic Product in Nigeria are positive and insignificant. This implies that though government has been allocating funds to the sector, these make no meaningful impart as there are apparently not enough

CONCLUSION

In conclusion, the status of the Nigerian education sector appears unattractive, low in quality, limited in its reach and troubling in its future. Nigeria needs to get its priorities in the education sector right. Investment in the education sector has a short run and long run economic effect as it plays vital role in other sectors of the economy as well as protecting the environment and controlling population growth. To avert the impending ruin on Nigeria's future, the nation requires a conscious and fast groundbreaking rescue of her education system. The decay appears so deep that nothing short of massive mobilization of funds through the public and private sectors and a large barrage of institutional policy and legislative reforms can be an adequate remedy

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