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External Debt's Impact on Education Funding in Nigeria

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Abstract: Money borrowed from another country is referred to as external debt. This money must be repaid in the currency in which it was borrowed. Except for a small portion of early childhood and elementary school costs, which are primarily the responsibilities of county communities. Education funding is primarily the responsibility of the government. Credit, donations, grants, savings and taxes all contribute to education funding in Nigeria. The purpose of this study was to assess the impact of external debts on education funding in Nigeria. Secondary data were gathered for this study from the National Bureau of Statistics, the Central Bank of Nigeria statistical Bulletin and the World Development Indicator over a 33-year period (1988 – 2020). The collected data were analyzed using a statistical tool (Ordinary Least Squares). Symptomatic tests were performed, including the Augmented Dickey - Fuller (ADF) Unit root test, Johansen Co-integration and Vector Error Correction (VEC) model. The findings show a significant long-run relationship between external debts and education funding in Nigeria; additionally, external debts have a significant effect. on the funding of education in Nigeria. According to the researchers, external debts are indeed a major hindrance to education funding in Nigeria. The researchers recommend, among other things, that the government allocate more resources to the education sector in order to improve individuals' productive capacity, which will raise the country's GDP in the long run.

Keywords: External debts, Funding, Education sector.

INTRODUCTION

A nation that wishes to improve any of its sectors must devote more resources to education. This is due to the fact that the success of all other sectors is dependent on the proper implementation of educational policies aimed at increasing the productive capacity of both human and material resources in all sectors. Offem *et al.* (2017) as cited in Ekaette, Owan and Agbo (1988) affirms that education is critical for any country's national income preservation and economic growth. Education is a weapon against ignorance and illiteracy. All other sectors of the economy rely on it to survive. It is the foundation of any country with a strong desire to pursue development (Seimogha & Richard, 2019).

Based on this unique feature, education is known to be the most appropriate means of development and transformation (Meenyinikor *et al.*, 2014). As a result, Ubogu, as cited by Ekaette *et al.* (1988), noticed that the need for education is increasing because it is not only an investment in human resources, but also a basic requirement for the nation's overall growth and development. Based on the observations thus far, education is important in eradicating ignorance and illiteracy, equipping citizens with vital skills, eliminating social vices, reducing unemployment, increasing output, and improving the general standard of living of the people. However, as crucial as this sector is, poor funding is a major factor limiting its effectiveness in achieving educational goals. Many schools do not function effectively in terms of achieving their goals and objectives because they lack the necessary resources and facilities. As a result, the products of our educational system fall short of societal expectations (Ekaette *et al.*, 1988).

The issue of inadequate education funding and its unavoidable consequences may be one of the reasons why UNESCO recommends that all developing countries allocate at least 26 percent of their total budget to education, though this is unrealistic in the Nigerian context. Since independence, the budgetary allocation to education has been far below the UNESCO benchmark. The Nigerian government borrows from both internal and external sources due to a lack of resources to finance major projects and address economic concerns. Borrowing from internal sources is referred to as "internal debt," while borrowing from external sources is referred to as "external debt." Thus, debt refers to the financial resources in use in an organization that were not contributed by its owners and it does not in any way conform to them (Udoka & Ogege, 2012).

As the stock of external debt grows over time, so does the corresponding debt service payment for example, as external debt stock increases from $29,624,118,543 in 1988 to $70,570,530,053 in 2020, debt service payment increases from $2,210,430,889 in 1988 to $5,543,881,053 in 2020 (https://tradingeconomics.com/nigeria/debt-service-on-external-debt-total-tds-us-dollar-wb-data.html). As a result, any country that spends more of its resources servicing external debts will have fewer resources available to finance education and other development

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projects internally. This motivates the researchers to investigate the impact of external debts on education funding in Nigeria.

Aim and Objectives of the study

This research aimed to investigate the impact of external debts on education funding in Nigeria from 1988 to 2020. Thus, the objectives are as follows:

1. To investigate the long-run relationship between external debt and education funding in Nigeria.
2. To investigate the impact of external debts on education funding in Nigeria.

Research Hypotheses

The null hypotheses formulated to guide the study are as follows:

- There is no significant long-run relationship between external debts and the funding of education in Nigeria.

THEORETICAL FRAMEWORK

Krugman's Debt Overhang Theory (1988):

Krugman's debt overhang theory, proposed in 1988, attempts to explain a situation in which a country's debt exceeds its ability to pay it off in the future. Debt can overhang for a variety of reasons, with consequences for economic growth, employment, and economic stability. The theory is based on the premise that if a country's debt exceeds its repayment capability by some measure in the future, expected debt service will likely rise as output levels rise. According to Onwe, as cited in Ekaette *et al.* (2019), when a country's debt overhangs, the proceeds from domestic investment are effectively taxed away by existing foreign creditors, and as a result, domestic and new foreign investors are discouraged from investing. This reduces the domestic country's ability to boost its economy, increasing its reliance on foreign debts (Yucel, 2009).

The significance of this theory to the current research work is that the burden of debt of any nation is capable of influencing the indebted nation's economic activities, including education funding. It should be noted that this theory does not rule out borrowing from external sources; rather, it points to a situation in which a country's debt burden becomes intolerable if there are no agencies for repaying funds borrowed. Borrowing from a third party is beneficial if the funds are used to address macroeconomic issues and for productive purposes (Ekaette *et al.*, 1988).

Empirical Studies

Ekaette *et al.* (1988) conducted research on "external debts and the financing of education in Nigeria" From 1988 to 2018, data on external debt stock, external debt service payment Gross Domestic Product, and government education funding were collected and analyzed using Ordinary Least Squares. Symptomatic tests were carried out, including the Augmented Dickey - Fuller (ADF) unit root test, Johansen Co-integration, Vector Error Correction (VEC) model, and Granger Causality test. External debts have a significant influence on education financing in Nigeria, according to the findings. They concluded that external debt is a significant impediment to education financing in Nigeria and recommended that the government use funds obtained from external sources for investment purposes, including education investment.

Adesola (2009) conducted an empirical study on debt servicing and economic growth in Nigeria between 1981 and 2004. The collected data were analyzed using the least squares multiple regression method. The outcome demonstrates that debt payments to London club creditors, Paris club creditors, promissory note holders, and other creditors have a significant impact on GDP and Gross fixed capital formation. According to the study, the government should ensure that any loan deal with the London Club or other creditors opens Nigeria up to more trade and investment and stimulates the private sector.

Sunday *et al.* (2016) conducted a study on the "impact of public sector borrowing on prices, interest rates, and output in Nigeria." To investigate the effect, the study employs a vector Autoregressive framework, the Granger Causality test, impulse response, and variance decomposition of the various innovations. The findings show that a shock to the external debt stock raises the prime lending rate, but with a lag. However, the rate of domestic and external debts had no significant effect on the general price level and output during the study period. Sulaiman & Azeez (2012) also conducted research on the topic "effect of external debts on Nigerian economic growth from 1970 to 2010." Diagnostic tests included the Augmented Dickey Fuller (ADF) unit root test, Johansen co-integration, and the Error Correction model. The Ordinary Least Squares estimation method was used. The Co-integration test demonstrates that the variables have a long-run equilibrium relationship. The Error Correction Model results show that external debts contribute positively to the Nigerian economy.

According to the review so far, researchers are more concerned with the country's external debts and economic growth. Only one study links external debt to education spending in Nigeria. However, the scope of the work is 31 years (1988-2018), whereas this study covers 33 years (1988-2020), putting this study in a more current context. Furthermore, this study included inflation in the independent variables, which had not been included in previous studies. As a result, this study adds to the literature by investigating the impact of external debts on education funding in Nigeria.

METHODOLOGY

Data source

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Secondary data were used, which included annual observations from 1988 to 2020. These figures were obtained from the National Bureau of Statistics (NBS, 2020), the Central Bank of Nigeria (CBN), and the World Development Indicator (WDI, 2020). Government Expenditure on Education (EXPEDU), External Debt Stock (EDS), External Debt Service Payments (EDSP), Real Gross Domestic Product (RGDP), Official Exchange Rate (EXR), and Inflation Rate are the variables used in this study (INFR). Furthermore, prior to estimation, the entire data set, excluding the Inflation Rate (INFR), was logged in order to reduce the potential for noise and ensure that the results retain clear economic interpretations.

Model Equation

This study looked at the impact of external debt on education funding in Nigeria from 1988 to 2020. The study used models from Ekaette *et al.* (1988) simple macroeconomic debt growth model, as well as models from Ajayi & Oke (2012) and Utomi (2014). In its functional form, the specified model is:

$$EXPEDU = f(EDS, EDSP, RGDP, EXR, INFR)$$

…….(1)

Where:

$EXPEDU$ = Expenditure on Education (Proxy for the funding of education)

EDS = External Debt Stock

EDSP = External Debt Service Payment

EXR = Official Exchange Rate

INFR = Inflation Rate

Mathematically the above model can be specified as;

$$EXPEDU = \beta_0 + \beta_1 EDS + \beta_2 EDSP + \beta_3 RGDP + \beta_4 EXR + \beta_5 INF$$

…….(2)

The econometric form of the model can be specified as;

$$EXPEDU = \beta_0 + \beta_1 EDS + \beta_2 EDSP + \beta_3 RGDP + \beta_4 EXR + \beta_5 INF + \mu_t$$

……..(3)

Where:

μ_t = Error term

β_0 = Intercept of relationship in the model

$\beta_1 - \beta_5$ = Coefficients of each variable in the model

By linearizing equation (3), the model will take the form:

$$LogEXPEDU = \beta_0 + \beta_1 LogEDS + \beta_2 LogEDSP + \beta_3 LogRGDP + \beta_4 LogEXR + \beta_5 LogINF + \mu_t$$

…. (4)

Where:

Log = Natural log from equation

Thus, equation (4) represents the time series forms of the model.

Techniques of Estimation

The data from 1988 to 2020 (33 years) was computed using the phillip-perron (pp) and Augmented Dickey - Fuller (ADF) unit root tests to determine the stationarity of the variables; the Johansen co-integration method was used to determine the long-run relationship between the variables. The Vector Error Correction Model was used to examine the speed of adjustment from short-run to long-run equilibrium, while Ordinary Least Squares was used to reveal the impact of external debts on education funding in Nigeria. The econometrics software E-views V9 was used for computations at the 5% level of significance.

RESULTS AND DISCUSSIONS

Table 1. Phillip-Perron (PP) unit root test results for all the variables

Variables	At Level			At First Difference		
	ADF	**PP**	**Order of Integration**	**ADF**	**PP**	**Order of Integration**
EXEDU	-4.132110	-3.929413	I (0)	-	-	-
EDS	-	-		-6.788085	-8.160129	I(1)
EDSP	-4.132110	-3.929413	I(0)	-	-	-
EXR	-	-	-	-5.199146	-4.220077	I(1)
INFR	-	-	-	-4.592527	-5.001830	I(1)
RGDP	-	-	-	-2.999405	-8.306098	I(1)

Source: Researchers' computation from EViews 9

The Phillips-Perron and the Augmented Dickey-Fuller (ADF) unit root test results in Table 1 indicate that all the variables are either stationary at level or integrated of order one, which is consistent with the modeling framework adopted in this study.

Table 2. Test for Johansen Co-integration Using Max-Eigen Value

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistics**	**0.05 Critical Value**	**Prob.****

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None *	0.656900	0.656900	95.75366	0.0390
At most 1	0.555182	0.555182	69.81889	0.1308
At most 2	0.416059	0.416059	47.85613	0.2597
At most 3	0.354599	0.354599	29.79707	0.2800
At most 4	0.245823	0.245823	15.49471	0.3876
At most 5	0.000593	0.000593	3.841466	0.8920

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

At 5%, the maximum Eigenvalues Table 2 shows that there is only one co-integrating equation. As a result, the null hypothesis that there is no co-integrating equation is rejected. This suggests that there is a significant long-run relationship between external debt and education funding. As a result, estimation of the Error Correction Model is required to determine the model's short-run dynamics.

Table 3. Results of Vector Error Correction Model (VECM)

Error Correction:	**D(EXPEDU)**	**D(EDS)**	**D(EDSP)**	**D(RGDP)**	**D(EXR)**	**D(INF)**
Coint Eq1	-0.085895	-0.004138	-0.008729	-0.191905	6.37E-11	-6.15E-11
	(0.08154)	(0.01176)	(0.00320)	(0.12333)	(2.8E-11)	(2.2E-11)
	[-1.05342]	[-0.35187]	[-2.72616]	[-1.55609]	[2.23578]	[2.76592]

Source: Computation of researchers from E-Views 9

In table 3 above, the results of Vector Error Correction Model (VECM) is presented with the standard errors and t-statistics in parentheses ( ) and [ ] respectively. The a priori for the VECM is that it must be negative. Thus, the results in Table 3 met the assumption indicating that 8.5% of the errors are corrected in the long-run while allowing for short-run adjustment dynamics.

Table 4: Regression Results Obtained from Ordinary Least Squares

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
EDS	-0.419617	0.374279	-1.121135	0.2721
EDSP	-0.351009	0.191370	-1.834192	0.0777
R_GDP	0.243537	0.107584	2.263688	0.0318
EXR	1.478688	0.131973	11.20450	0.0000
INF	0.058562	0.127820	0.458156	0.6505
C	-12.79314	3.620879	3.533159	0.0015
R-squared	0.817451	Mean dependent var		10.69400
Adjusted R-squared	0.802165	S.D. dependent var		0.954301
S.E. of regression	0.298493	Akaike info criterion		0.582822
Sum squared resid	2.405641	Schwarz criterion		0.854914
Log likelihood	-3.616565	Hannan-Quinn criter.		0.674373
F-statistic	60.01593	Durbin-Watson stat		2.336969
Prob(F-statistic)	0.000000			

Source: computation of researchers from EViews 9

The results presented in Table 4 above show that the constant term has a coefficient of -12.79314, indicating that when all of the independent variables are held constant, the expenditure on education will be -12.79314. The estimate for EDS is negative (-0.419617), indicating an inverse relationship between external debt stock and education spending. This means that every unit increase in external debt stock results in a -0.419617 decrease in education spending. The EDSP coefficient is also negative (-0.351009), indicating an inverse relationship between external debt service payments and education expenditure in Nigeria. This means that every unit increase in external debt service payment reduces education financing by -0.351009

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units. RGDP has a positive relationship (0.243537) with education expenditure, such that a unit increases in real Gross Domestic Product increases education expenditure by 24.43 percent. The exchange rate has a positive relationship (1.478688) with education expenditure, implying that a unit increase in the exchange rate increases education expenditure by 1.47 percent units. The results in Table 4 also revealed that the F-p-value statistic's of 0.000000 is less than the 0.05 level of significance. With this result, there is still enough statistical evidence to reject the null hypothesis and keep the alternative hypothesis. This implies that external debts have a significant impact on education spending in Nigeria (F= 60.01593, p.05). The results revealed that external debt stock (t=-1.121135, p>.05) and external debt service payment (t=-1.834192, p>.05) have no significant effect on education expenditure. However, real GDP (t=0.0318, p.05) and exchange rate (t=0.0000, p.05) have a significant impact on education expenditure in Nigeria. In Nigeria, the inflation rate (t=0.6505, p.05) has no effect on education spending. The Durbin-Watson value of 2.336969 indicates that the variables have a negative autocorrelation. The Adjusted R square of 0.802165, on the other hand, indicates a good model fit and suggests that all of the independent variables in the model could be held responsible for 80.2 percent of the variation in education funding in Nigeria. Other independent variables not included in the model explain the remaining 19.8 percent of the variance.

FINDINGS

The aim of this study was to investigate the impact of external debts on education funding in Nigeria from 1988 to 2020. This study discovered a significant long-run relationship between external debts and education spending in Nigeria; however, this finding is supported by Olasode & Babatunde (2016); Paul (2017); Onwe (2018); & Ekaette *et al.,* (1988), who also discovered a long-run relationship between external debts and education spending in Nigeria. However, this study's findings contradict that of Utomi (2014); & Udeh *et al.* (2016), who found no significant long-run relationship between external debt and economic growth in Nigeria.

The second finding of this study revealed that external debts have a significant impact on education financing in Nigeria. External debt stock and external debt service payment are both negative and insignificant predictors of education financing in Nigeria. While real GDP, exchange rate, and inflation rate are all positive and significant predictors of education funding in Nigeria. This finding is consistent with Paul's (2017) findings, which also revealed that debt service payment has a negative and insignificant impact on Nigeria's economic growth. Onwe (2018) also discovers a negative relationship between external debt financing and economic growth. According to Udeh *et al.* (2016), external debt service payment has a negative relationship with GDP, whereas the exchange rate has a positive relationship with it. This finding is consistent with reality because external debt stocks and external debt service payments are all channels of capital outflows from Nigeria that are paid in goods, currency, or services. As a result, if there were no external debts, such outflows would have been channeled into productive capital projects that would benefit the country in the short and long run. In this study, RGDP was found to be positive, implying that an increase in RGDP means an increase in production in Nigeria, leading to an improvement in the balance of payment, an increase in citizens' income, an increase in spending, and an increase in school attendance. The multiplier effect on the government will be balance of payment surpluses and a high exchange rate; exports will be expensive while imports will be cheaper for Nigeria. Based on the findings, this study concludes that external debt is a significant impediment to education funding and, as a result, Nigeria's economic growth. External debt has a significant long-run relationship with education financing. External debt stock and service payment are both negatively and insignificantly related to education funding in Nigeria. As a result, the more Nigeria spends to service its debts, the fewer funds are available to finance education, other sectors, and economic development.

Recommendations

Based on the study's findings, the researchers make the following recommendations

- The funds borrowed from external sources by the government should be invested in education, health, agriculture, manufacturing, and other sectors of the economy with the potential for high returns in the future.
- The government should allocate more resources to education, even beyond the UNESCO 26 percent benchmark, in order to improve individuals' productive capacity, which will boost the country's GDP in the long run.
- The government should only borrow from organizations with low interest rates.
- The government should borrow if necessary, but not beyond its future repayment capacity.

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