



Government Funding and Nigeria's External Debt Profile

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Abstract

The study ascertained the relationship between capital expenditures and Nigeria's external debt profile from 2014 to 2023. The specific objectives include the following: to determine the relationship between capital expenditure on health care and Nigeria's external debt, to evaluate the relationship between capital expenditure on transport sector and Nigeria's external debt and to investigate the relationship between capital expenditure on power sector and Nigeria's external debt. Data for the study were collected from Central Bank of Nigeria (CBN) statistical bulletin, National Bureau of Statistics (NBS) Report and Debt Management Office (DMO). Data were analyzed using correlation analysis model. The result showed that there is a weak positive and non significant relationship between capital expenditure on education and Nigeria's external debt. With a P-value of 0.517, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of 0.249% which indicates that increase in capital expenditure on education weakly increases nation's external debt by 24.9%. It also revealed that there is an insignificant and weak negative relationship between capital expenditure on transport sector and Nigeria's external debt. With a P-value of 0.437, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of -0.260% which indicates that increase in capital expenditure on agriculture decreases Nigeria's external debt by -27.8%. It also showed that there is an insignificant and weak negative relationship between capital expenditure on power sector and Nigeria's external debt. Having shown a P-value of 0.866, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of -0.031% which indicates that increase in capital expenditure on health care decreases Nigeria's external debt by -3.1%. The study recommends among others that government at all levels should only seek external borrowing when vital priority projects are being considered and should equally place a limit on external borrowing.

Keywords Government Funding; External Debt Profile; Capital Expenditure; Transport Sector

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Introduction

The function of government capital expenditure is to maintain reasonable degree of price level stability and sustain the rate of economic growth that will enhance the economy to achieve full developmental potential and stabilization (Onoja & Adione 2019). High levels of government expenditure are potential ways to increase the level of employment, investment and profitability via multiplier effects on aggregate demand. Thus, government expenditure can contribute positively to economic growth and lead to economic development. According to the Commission on Macroeconomics and Health (2011), the minimum financial needs per person per year to cover essential intervention is estimated to be between US\$30 and US\$40. In Nigeria, health expenditure is estimated to be US\$8 per capita compared to the international recommendation. While health care needs are increasing, government capital expenditure on health in Nigeria is declining in terms of exchange rate. Umeh et al. (2021) opined that capital expenditure on health sector is a paramount in every country because it is an essential precondition for attaining development in human capital. Good health status of citizens has a multiplier on efficient, productive and skillfulness in human capital which may lead to economic development. Despite the gradual increase in health sector spending, the country still lagged behind compared to that of other countries in Africa. Statistics have shown that the country's capital expenditure on health sector as a percentage of GDP is 4.1% instead of 4.6% in African countries on the average (FMH 2020). Ogunjimi and Adebayo (2018) are of the view that this statistic is indicative of the fact that the expenditure on health is not enough to develop the health system in Nigeria or that appropriate policies are not put in place to improve the sector.

Power generation, transmission and distribution play a major role in socio-economic development of every nation, Nigeria inclusive. Notably, most economic activities in Nigeria depend on electricity supply. According to Ijeoma (2013), the availability of reliable electricity to homes and businesses has attracted government attention but without impressive outcome over the past decades. Nigerian government has invested a lot of fund to generate and supply electricity that will be sufficient to meet the demands of the citizenry but the outcome remains discouraging. This has led to involving direct private investors to solve the problem of electricity in Nigeria. Oluwatoyin et al (2019) posit that the bane of power sector remains the low funding of the sector as well as the inability of revenue to cover cost. The increasing global climate change is becoming a serious threat to the future of power sector in Nigeria. Emodi & Yusuf (2015) argued that the sector generates, transmits and distributes Megawatts (MW) of electric power that is significantly less than what is needed to meet the demands of basic household and industries. In Nigeria, electricity is the most widely used and desirable form of energy. The important observable trend is that the increase in the country's population results in an increase in electricity demand. The power sector shortfalls are rising and are fiscally unsustainable. From 2015 to 2019, the tariff shortfall which the government funds increased significantly as allowed tariff stayed flat while the cost reflective tariff increase the foreign exchange depreciation and inflation. The situation is not fiscally sustainable and takes away resources for human and physical capital investment (World Bank 2020).

Oseni, et al (2020) opined that movement of people and goods from one place to another is critical to maintaining strong economic and political ties between regions in the same country. With a land area of 910,768sq.km and population estimate of 200 million people, the centrality of effective public transportation system in Nigeria is very necessary. Adebosin et al (2019) also emphasized that Nigeria's transportation infrastructure falls below standard when compared with other developing countries in Sub-Sahara Africa. Globally, Nigeria ranks very low in the quality of her transportation system which impacts negatively on the ease of doing business. Capital expenditure on transport has been surrounded with the belief of making available public infrastructure to ease transportation problems. It is also guided by the thoughts of private sector inability to provide public goods to the economy. Capital expenditure on transport sector is critical to the economic well-being of Nigeria. These investments enhance mobility and provide our people with increased business and work opportunities. Advancing integrated, multi-modal networks provide travel options that improve connectivity, affect the health and well-being of urban and rural communities. Continuous reinvestment in the sector allows companies to establish lean supply chains and deliver competitively priced products and services while at the same time achieving healthy profit margins (Onokala & Olajide 2020),

The general view is that public expenditure can enhance growth although the financing of such expenditure can be growth retarding, due to the negative effects associated with excessive debt. Gohar et al (2012) opined that external borrowing has a significant impact on the infrastructural development of a nation up to a point where high levels of its servicing sets in and affects growth as the focus moves from financing capital projects to repayment of debts. Accumulated debt service payments create a lot of problems for the developing countries because debt is serviced for more than the amount it was acquired and this could slow down economic activities in such nations. Udoka and Ogege (2012) suggested that managing external debts deserve a very conscientious attention of any government as external debt often have the priority attention on the resources of any nation and it also plays an important role within the overall development strategy of a country since as an erratic and uneven debt repayments can undermine long term development strategies. The economic growth and development in Nigeria had been volatile and highly discouraging despite the huge external loan profile. External debt is an essential source of finance mainly used to augment the local sources of funds for supporting development and other needs of a country. Usually, external debt is incurred by a country which suffers from shortages of domestic savings and foreign exchange needed to achieve its developmental and other national goals. However, if the external debt is not profitably and productively used, the effort of a debtor country in paying the debt becomes a critical concern as such may result to bad debt (Bahuli & Bala 2020).

Statement of the Problem

In Nigeria, there has been a sharp rise in government expenditure due to increased demand for public goods and services such as good roads, power, education, health care, security and even food. Unfortunately, this increase in government expenditure has not translated to meaningful growth and development in terms of standard of living of the citizens. Furthermore, the problem of the increase in Nigeria's external debt profile is also a major obstacle facing the country's economic development. Apparently, greater revenues of the country were devoted to servicing her debt, thus playing down on capital investment which invariably affects macroeconomic indicators such as balance of payment, inflation rate, exchange rate and national savings. Although capital expenditure on various sectors of the economy is crucial for growth and productivity, but many have questioned the effectiveness and consequences of such expenditures. There have been arguments on whether external debt is a veritable instrument for promoting capital expenditure in debtor nations. Empirical findings in this area vary. Some scholars are of the opinion that capital expenditures have no significant relationship with the countries debt, whereas others believe that there is a significant relationship between them. It is against this backdrop that a study to investigate the relationship between capital expenditures and Nigeria's external debt profile is carried out.

Objective of the Study

The broad objective of the study is to determine the relationship between capital expenditure and Nigeria's external debt profile. The Specific objectives of the study will be:

1. To evaluate the relationship between capital expenditure on health care and Nigeria's external debt
2. To determine the relationship between capital expenditure on power sector and Nigeria's external debt.
3. To analyze the relationship between capital expenditure on transport sector and Nigeria's external debt.

Review of Related Literature

Capital Expenditure on Health Care

Alola and Ozturk (2021) are of the opinion that health is wealth and financial stress severely affects the health of the population. A high degree of debt repayments can behave as an active source of anxiety that leads to poor physical and mental health and psychological distress that in turn might worsen overall welfare. Indebted economies tend to enlarge additional debt to pay for good quality health and food care services to the masses. Debt accumulation can minimize the accessibility of forthcoming resources for health-related investments and tend to a vicious phase,

where largely accumulated debt could be a consequence and cause of poor health conditions. Adesoye (2017) opined that health is an indicator of the welfare status of every economy. This is the reason why health sector is primarily established for the prevention of disease, and improvement of living standard of the people. In developing countries, the health sector is facing challenges especially that of financing the inputs that will produce the required outcome. The major challenges are health facilities and personnel, inadequate drug-manufacturing plants, remigration of professional health workers to developed countries, poverty social development are budgetary deficit. It is based on this belief that Sustainable Development Goals (SDGs) was set to achieve the significant health status/ outcomes in developing countries.

Capital Expenditure on Power Sector

Osabohien et al (2019) opined that when there is poor electricity power or in general energy sources, human capacities in the area of physical products remain just at breakeven level. Globally, approximately 1.2 billion individuals have limited access to electricity, out of these people, about 1 billion of them depend on solid fuel, like wood, coal and charcoal as an alternative source of energy, these alternative sources of energy have caused noxious indoor air pollution for cooking. The United Nations sustainability on energy has three goals for 2030 which are; to attain worldwide admittance to cleaner energy, ensure energy supply adequacy and increment in the proportion of renewable energy in the international energy mix. In spite of the huge amount of money that the Nigerian government had expended on the power sector, the supply of electricity had been very erratic. From 1999 to 2015, the government spent about \$1.6b on the power sector with no noticeable improvement in the megawatts of electricity generated in the country (Central Bank of Nigeria, 2016).

Capital Expenditure on Transport Sector

The significance of transport infrastructure development has not been higher than in recent times because of the growing demands and the need for a subsequent supply of goods and services across the world. The road and belt initiative of the Chinese government, which aims to link the significant part of the world by road is an excellent example of the recent effort to increase the transport infrastructure around the world. Infrastructure provision is crucial for developing countries to keep transport costs low and possibly to enhance the attractiveness and competitiveness of their economies. Recent decades have been extremely difficult for governments owing to strict budget constraints imposed by fiscal adjustments and policy rules that have significantly reduced the propensity to invest (Adebosin et al 2019). Hassan and Abdullah 2017 opined that rail transportation offers much potential because of its relative safety, reliability, lower cost to the users and being singularly capable of transforming the national economy through mass movement of people, goods and services. Within this context, the demand for an effective railway system, and the enormous potentials for profitable investment in rail infrastructure in Nigeria, is indisputable. As at today, the rail network in the country stands at 3,557 kilometers with 3,505 kilometers still on the narrow gauge.

Nigeria's External Debt

External debt is the portion of a country's debt that was borrowed from foreign lenders including commercial banks, governments or international financial institutions. Pattillo Economics theory suggests that reasonable levels of borrowing by a developing country are likely to enhance its economic growth (Pattilo, Poirson & Ricci 2002). This means that unreasonable borrowing may have a negative impact on the economic development of a nation. Idris & Ahmad (2017) also posit that the government borrowing for the purposes of carrying out its fiscal policies represents outstanding liabilities called national debt. Borrowing to offset macroeconomic crises is not a problem in itself especially when the means to pay is available. However, it becomes an issue when a nation borrows without corresponding means to pay. Sometimes debts are difficult for countries to pay especially in situations where borrowings are not judiciously used for economic advancement, thus resulting in bad debts.

Theoretical Framework

This section gives an insight into the theory to which the study is based. There are several theories supporting this research but the work is anchored on debt overhang theory

Debt Overhang Theory

The concept of debt overhang theory was developed by Krugman (1988). It has been applied to sovereign governments, predominantly in developing countries. The concept describes a situation where the debt of a country exceeds its future capacity to pay. Borensztein (1990) stated that the theory is based on the premise that if debt exceeds the country's repayment ability, expected debt service is likely to be an increasing function of the output level. Debt overhang is also scenario in which a debtor country benefits very little from the return of additional investment because of debt service obligation. This creates a disincentive to investment from the point of view of the global interest of the debtor.

Empirical Review

Expenditure on Health care and External Debt

Ma et al (2022) carried out research on the impact of FDI and external debt on health outcome in emerging Asian economies from 1991 to 2019. To that end, we have collected data for seven economies: Bangladesh, Malaysia, Philippines, Thailand, Sri Lanka, China, and India. We have relied on the panel ARDL (PARDL) method for empirical analysis. The study's findings confirmed that the debt has increased infant mortality and decreased life expectancy in emerging Asian economies in the long run. On the other side, the FDI causes infant mortality to fall and life expectancy to rise in the long run in emerging Asian economies. Similarly, the health expenditures also reduced the infant mortality rate, though the impact is insignificant, and improved the life expectancy in emerging Asian economies. The causal analysis confirmed the two-way causality between health expenditure, infant mortality, and health expenditure and debt.

Umeh et al. (2021) assessed the impact of government deficits on the public sector output over a period of thirty-nine years from 1980 to 2018. It specifically examined of government budget deficits on the public health sector and the impact of external borrowing on the public health sector in Nigeria. The methods of data analysis range from Augment Fuller Unit Root test, Johansen Co-integration test and Error Correction Method. The results show that government budget deficits have positive insignificant impact on public health sector output in Nigeria. It also reveals that external borrowing of financing budget deficit has negative insignificant impact on health sector output in Nigeria.

Expenditure on Power sector and External Debt

Ibrahim & Suleman (2022) investigated Debt Servicing and Federal Government Expenditures in Nigeria. This study tested crowding out hypothesis among federal capital, non-debt servicing recurrent and debt servicing expenditure components using Auto Regressive Distributive Lag (ARDL) Bound-Testing technique to Co-integration and Toda-Yomamota test of Granger non-causality over the period 1961-2018. Long-run and short-run parameters estimates show that, a one percent rises in debt servicing expenditure component decrease federal non-debt servicing recurrent expenditure by about 0.18 and 0.15 percent and capital expenditures by about 0.23 and 0.28 percent respectively; 1percent increase in federal non-debt servicing recurrent expenditure reduced capital expenditures by about 0.52 percent and a 1 percent increase in federal capital expenditure can increase federal non-debt servicing recurrent expenditure by almost 0.34 percent in the long-run. These results are further confirmed by Toda-Yomamota test of Granger non-causality, which suggest bidirectional causality among the three expenditure components. Overall, evidences are in support of crowding-out hypothesis among the three expenditure components in Nigeria.

Tashevskia and Trpkova-Nestorovska (2020) used panel regression analysis to test whether social protection expenditure has crowded-out expenditures on other purposes in the European Union over the period 1995-2018. The results provide some evidence of crowding-out of infrastructure and education spending. Additionally, deficit financing and rising government debt have a significant adverse effect on spending on infrastructure, education and core public services.

Expenditure on Transport sector and External Debt

Sie et al (2021) analyzed the impact of Public Spending on Private Investment in Malaysia from 1980 to 2016 via Vector Error Correction model. Empirical results suggested crowd-in effect of education and defense expenditure as well as crowd-out effect of health and transportation expenditure components on private investment respectively.

Chadana et al (2021) investigated the impact of government expenditure on economic growth in Nigeria from 1970 to 2019. The paper employed ARDL model for analysis. The key findings are that capital expenditure has positive and significant impact on economic growth in the short run and long run while recurrent expenditure does not have significant impact on economic growth in the short run and short run. The government should increase share of capital expenditure especially on meaningful projects that have direct bearing on the citizen's welfare. Government should also improve the spending patterns of recurrent expenditure through careful reallocation of resources towards productive activities that would enhance human development in the country.

Methodology

The design for this study will be ex-post factor research design. This is appropriate for the study because data will be collected after the events under investigation had taken place. Data for the study is secondary data. Data for capital expenditure on health care sector, capital expenditure on power sector and capital expenditure on transport sector were collected from Central Bank of Nigeria (CBN) statistical bulletin, National Bureau of Statistics (NBS) Report and Debt Management Office (DMO). Data were analyzed using correlation analysis model. Correlation Analysis is a statistical method that identifies the strength of a relationship between two or more variables.

Data Analysis

Diagnostic Tests

Table 3: Collinearity Statistics

Variable	VIF	1/VIF
CEHC	2.02	0.496128
CEP	1.86	0.536905
CET	1.18	0.844920

Mean VIF | 1.68

From the table above, the TV ranges from 0.496128 to 0.844920 which suggests non multi-collinearity feature. The VIF which is simply the reciprocal of TV ranges from 2.02 to 1.18 also indicates non multi-collinearity feature.

Breusch Pagan/Cook Weisberg Heteroskedasticity for the Model

. estathettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of EXT

chi2(1) = 0.23

Prob>chi2 = 0.6317

The above result was obtained from the test for heteroskedasticity. The probability value of 0.6317 resulting from the test for heteroskedasticity implies that the model is free from the presence of unequal variance. Thus implies that our probability values for drawing inference on the level of significance are reliable and valid. The absence of

heteroskedasticity validates the regression model results, which means there is no need for robust or weighted least square regression.

Test of Hypotheses

Table 4: Correlations					
		CEE	CEA	CEHC	EXTD
CEHC	Pearson Correlation	1	-.045	.643*	.239
	Sig. (2-tailed)		.923	.045	.507
	N	10	10	10	10
CEP	Pearson Correlation	-.035	1	.278	-.278
	Sig. (2-tailed)	.923		.437	.437
	N	10	10	10	10
CET	Pearson Correlation	.643*	.278	1	-.026
	Sig. (2-tailed)	.045	.437		.944
	N	10	10	10	10
EXTD	Pearson Correlation	.239	-.278	-.026	1
	Sig. (2-tailed)	.507	.437	.944	
	N	10	10	10	10
*. Correlation is significant at the 0.05 level (2-tailed).					

Discussion of Findings

The result of the analysis of the study using Pearson Coefficient of Correlation is expressed as follows:

H₀₁: There is no strong relationship between Capital Expenditure on healthcare and Nigeria's external debt.

In view of the above analysis as shown on table 4, the result shows that there is a weak positive and insignificant relationship between capital expenditure on healthcare and Nigeria's external debt. With a P-value of 0.507, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of 0.239% which indicates that increase in capital expenditure on healthcare weakly increases nation's external debt by 23.9%. Based on this, we rejected the alternate hypothesis and accepted the null hypothesis which contends that there is no strong relationship between Capital Expenditure on healthcare and Nigeria's external debt.

The outcome of the analysis is in accordance with the results of Ma et al (2022) and Umeh et al (2021).

H₀₂: Capital Expenditure on Power sector does not have a strong relationship with Nigeria's external debt.

In view of the above analysis as shown on table 4, the result shows that there is an insignificant and weak negative relationship between capital expenditure on power and Nigeria's external debt. With a P-value of 0.437, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of -0.278% which indicates that increase in capital expenditure on power decreases Nigeria's external debt by -27.8%. Based on this, we rejected the alternate hypothesis and accepted the null hypothesis which contends that capital expenditure on power does not have a strong relationship with Nigeria's external debt.

The result of the analysis is in line with the findings of Ibrahim & Suleman (2022) but contradict Tashevskia and Trpkova-Nestorovska (2020)

H₀₃: There is no strong relationship between Capital Expenditure on transport sector and Nigeria's external debt.

In view of the above analysis as shown on table 4, the result shows that there is an insignificant and weak negative relationship between capital expenditure on transport and Nigeria's external debt. With a P-value of 0.944, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of -0.026%

which indicates that increase in capital expenditure on power decreases Nigeria's external debt by -2.6%. Based on this, we rejected the alternate hypothesis and accepted the null hypothesis which contends that there is no strong relationship between Capital Expenditure on power and Nigeria's external debt.

The outcome of the findings agrees with the results of Chadana et al (2021) but disagree with Sie et al (2021).

Conclusion and Recommendations

The outcome of the analysis revealed that there is no strong relationship between Capital Expenditure on healthcare, power, transport sectors and Nigeria's external debt. The study recommends among others that government at all levels should only seek external borrowing when vital priority projects are being considered and should equally place a limit on external borrowing.

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