

## IMPACT OF EXTERNAL DEBT SERVICING ON ECONOMIC GROWTH OF GHANA AND NIGERIA (2000-2015)

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### **Abstract.**

*The aim of this study is to ascertain the impact of external debt servicing on economic growth of Ghana and Nigeria. The specific objectives were to assess the impact of total external debt and also determine the impact of debt servicing on economic growth of Ghana and Nigeria. Ex-post facto research design was adopted for the study. The model proxied real Gross Domestic Product as the dependent variable while total external debt and debt servicing were used as independent variables. Secondary data were obtained from Central Bank of Nigeria statistical bulletin, Debt management office Nigeria and Debt management division of ministry of finance Ghana. The regression analysis based on Ordinary least square (OLS) was used to test the hypotheses. Two hypotheses were tested. Findings from the study revealed that total external debt had a significant negative impact on the economic growth of Ghana while its negative impact in Nigeria was not significant, while debt servicing had a*

*significant negative impact on both Ghana and for Nigeria. The study therefore concludes that the Governments of Ghana and Nigeria should henceforth seek better terms of external loan repayment which include longer period of moratorium ranging from 10 or more years before the maturity of the debts.*

### **Introduction**

External debt is defined by the International Monetary Fund (IMF, 2012) and the World Bank (WB), as debt owed to non-residents. Total external debt is the sum of public, publicly guaranteed and private non-guaranteed long-term debt, short-term debt and the use of IMF credit. Short-term debt includes all debt with an original maturity of one year or less and interest in arrears on long-term debt (World Bank, 2015). Public and publicly guaranteed debt, in contrast to private non-guaranteed debt, comprises the long-term external obligations of public debtors, including national Governments, political subdivisions (or an agency of either) and autonomous public bodies, as well as the external obligations of private debtors that are guaranteed for repayment by a public entity. Public domestic debt, in contrast,

refers to obligations of the same public entities but to lenders within a country (World Bank, 2015).

External debt is a major source of public receipts and financing capital accumulation in any economy (Adepoju, Salau & Obayelu 2007). It is a medium used by countries to bridge their deficits and carry out economic projects that are able to increase the standard of living of the citizenry and promote sustainable growth and development. It also improves total factor productivity through an increase in output which in turn enhances Gross Domestic Product (GDP) growth of a nation. The importance of external debt cannot be overemphasized as it is an ardent booster of growth and thus improves living standards thereby alleviating poverty.

There are many other reasons why countries incur external debt but the basic reason for external debt in developing countries is to fill "saving-investment" gap (Chenery & Strout, 1966). Developing countries facing current account deficits are usually encouraged to borrow from developed countries as well as from the international community to boost their economic growth. Gohar, Bhutto and Butt (2012) observed that countries take debt from external sources for many reasons either that their income is low, with budget deficit or they are having low investments.

Soludo (2003) observed that countries borrow for two broad categories, macro-economic reason (higher investment, higher consumption i.e. education and health) or to finance transitory balance of payment deficit in order to lower nominal interest rate abroad, lack of domestic long term credit or to circumvent hard budget constraint. However, countries that borrow to boost economic growth and reduce poverty do not suffer from macro-economic instability or sizeable adverse shocks. As a result, growth is likely to increase and allow for timely debt payment. When the circle is maintained for a period, growth will affect per capita positively which is a prerequisite for poverty reduction.

Developing countries like Ghana and Nigeria have often contracted large amount of external debts that has led to the mounting of trade debt arrears at highly concessional interest rates. Gohar et al (2012) opined that accumulated debt service payments create a lot of problems for countries especially the developing nations because debt is actually serviced for more than the amount it was acquired and this slows down the growth process in such nations. The inability of the Nigerian economy to meet its debt service payments obligations has resulted in debt overhang or debt service burden that has militated

against her growth and development (Niloy, Emranul and Denise, 2013; Adesola, 2009). (Audu, 2004).

Furthermore, Fosu (2009) observed that high debt service payments shifts spending away from health, educational and social sectors. This obscures the motive behind external borrowing which is to boost growth and development rather than get drowned in a pool of debt service payments which eats up most of the nation's resources and hinders growth due to high interest payments on external debt.

The genesis of Nigeria's external debt can be traced back to the pre-independence period when in 1958 a loan of US\$28 million dollars was contracted from the World Bank for railway construction. The debt did not pose a serious burden reason being that it was acquired on soft terms i.e. with low interest or below market rate of interest (Iyoha, 1999). At this period, the need for external aid was relatively low until in 1978 when there was a fall in world oil prices which in turn reduced the nation's oil receipts. Following the fall in oil prices, it became necessary for the government to correct balance of payment difficulties and finance projects. This led to the first major borrowing of US\$1 billion which is referred to as the "Jumbo Loan" in 1978 from the international capital market

The total external debt of the country continued to rise astronomically. Nigeria's external debts especially the bilateral components peaked in 2004 and nose-dived in 2005 after the debt relief with the Paris Club of Creditors that saw the country exit from the debt burden from the Club after paying approximately US\$18 billion in debt settlement. In 2000 the nation's external debt stood at US\$28.347 million and in 2004 it skyrocketed to US\$35.944 million showing an increase of about 26.80%. The debt cancellation of 2005/2006 brought the total external debt down to US\$3.544 million. However, it continued to rise again steadily from 2012 when Nigeria resumed borrowing on bilateral arrangements. In 2015 it has risen back to US\$10.718 million, an increase of about 200%. This increase in total debt and the corresponding increase in debt service payments and interests resulted in mounting of trade debts arrears. The nation's external debt service profile as at year 2000 stood at US\$3.58 million and in 2005 it has already risen to US\$3.41 million, an increase of about 391%. (Debt Management Office, 2012). The sporadic increase in the debt servicing profile continued and in 2015 few years

after the debt relief in 2005/2006 it has risen up again to stand at US\$1.189million. (Debt Management Office, 2015).

Ghana's external debt rose from US\$6,021 million in 2000 to US\$7,549 million in 2004. It then fell to as low as US\$2,177 million by 2006, the result of benefiting from heavily indebted poor countries (HIPC) relief starting from 2004 and from multilateral debt relief initiative (MDRI) in 2006. Subsequently, the debt rose steadily to US\$8.836 million in 2012. In absolute terms, multilateral debt has been the largest. Starting from US\$3,952 million in year 2000, multilateral debt fell to US\$1,327 million post-HIPC and MDRI reliefs, but has since risen to US\$6,543 million by 2015. Bilateral debt in year 2000 was at US\$1,682 million, fell to US\$732 million in 2006, and has since risen to US\$5,988 million in 2015. Similar to Nigeria the external debt service profile of Ghana has equally been on increase over the years rising from US\$6.8million in year 2000 to US\$1.6billion in 2015. The government of Ghana decided in 2001 to opt for the enhanced debt relief in order to stabilize the economy which was characterized by rapid exchange rate depreciation, high inflation and very low external reserves, which resulted from imprudent policies as well as high debt service payments (Bank of Ghana, 2015)

### **Statement of the Problem**

External debt primarily has been incurred to spur economic growth. Debt history of Ghana and Nigeria having shared similar historical and economic antecedents dates back to 1978 and has gradually been on increase over the years. Looking at the huge amount borrowed over the years, one expected that these two countries ought to have migrated from being classified as less developed nations to developed nations if these debts were properly utilized for capital development. But this seems not to be the case. One therefore wonders what should be the solution to this negative trend.

Surprisingly too, interest payments on debt of both countries also grew at a fast rate. Taking a cursory look at the total external debt profile of both Ghana and Nigeria cum the corresponding interest payments between years 2000 to 2005, it could be observed that there is steady increase in debt servicing payments even when the external debts incurred slowed down (Bank of Ghana, 2015; Debt Management Office, 2015). This could be seen as another means for capital flight. Due to the failure in effective utilization of the loans, the return or the economical benefit accruable could not be used to service the

loan thereby becoming another means of draining the economy.

The question on the lips of every concerned financial analyst is should these countries continue in a wild goose chase of accumulating external debt and incurring debt servicing that never translate to economic growth? This calls for an empirical study to establish the impact of external debt and debt servicing on economic growth of Ghana and Nigeria.

Further study is equally necessary as there have been divergent views on the debate. While (kao, and McCoskey 1998), Suleiman and Azeez (2012) found evidence for a positive relationship between external debt and growth basing their argument of positive correlations by pointing at Asian Tigers-Malaysia, Singapore, Indonesia, Taiwan who achieved economic growth through the application of external debt for massive infrastructural and human capital development, investment on technological innovations and strengthening their private sector capacity for optimal productivity. Ayadi and Ayadi (2008) and Baltagi, Griffin, and Xiong. (2000) found evidence for a negative relationship basing their own argument on West African countries where debt servicing has been a burden as

a result of unproductive application of external debts. Based on these divergent views, there is need for further empirical investigation.

### **Objectives of the Study**

The main objective of the study is to evaluate the impact of external debt servicing on Gross Domestic Product of Ghana and Nigeria while the specific objectives are to:

- 1) Investigate the long-term effect of total external debts on Gross Domestic Product of Ghana and Nigeria.
- 2) Evaluate the impact of debt servicing on Gross Domestic Product of Ghana and Nigeria

### **Research Questions**

The following research questions guided the study in the achievement of the research objectives:

1. To what extent has total external debt affected Gross Domestic Product of Ghana and Nigeria?
2. To what extent has debt servicing impacted on the Gross Domestic Product of Ghana and that of Nigeria?

### **Research Hypotheses**

The following hypotheses were formulated for the study in line with the objectives and the research questions,

1. Total external debt have no significant effect on the Gross Domestic Product of Ghana and Nigeria
2. External debt servicing has not significantly impacted on the Gross Domestic Product of Ghana and Nigeria

### **Scope of the Study**

The time-frame of this study is 16 years, from 2000 to 2015. The content scope is limited to external debt and economic growth literature and debt servicing in Ghana and Nigeria. The economic growth was proxied by Real Gross Domestic Product.

### **Review of Related Literature**

#### **Conceptual Framework**

##### **External debts**

External debt refers to money borrowed from a source outside the country. It can be obtained from foreign commercial banks, international financial institutions like IMF, World Bank, ADB etc and from government of foreign nations. Simply put, it is the portion of a country's debt that was borrowed from foreign lenders including commercial banks, governments of financial institutions. These loans,

including interest, must usually be paid in the currency in which the loan was made.

The distinction between external and domestic debt may be debated. However, this study adopts the distinction based on the residence of the creditor, in accordance with international organization best practices, such as those of UNCTAD, IMF and the World Bank. External debt is thus defined in this study, as debt owed to non-residents or based on the place of issuance and the legislation that regulates the debt contract whenever it is issued in foreign countries and under the jurisdiction of a foreign court.

As UNCTAD (2015) noted, the distinction between domestic and external debt is becoming blurred as there has been a shift in debt instruments since the early 1990s away from loans in foreign currency held by non-residents towards bonds that may be denominated in a foreign currency but held by residents. For example, foreign presence in domestic bond, equity and property markets are rising rapidly in developing countries in West Africa, making it more difficult to distinguish domestic from external debt (Akyüz, 2014). A significant share of debt may be considered external under some criteria and domestic under others (UNCTAD, 2015).

### **Debt Servicing:**

This is the cost of meeting interest payments and regular contractual repayments of principal on a loan. Debt service is the cash that is required to cover the repayment of interest and principal on a debt for a particular period. The debt servicing ratio helps to determine the borrower's ability to make debt service payments because it compares the country's total revenue to the amount of principal and interest the firm must pay.

### **The concept of Gross Domestic Product**

GDP first came into use in 1937 in a report to the US Congress in response to the Great Depression after Russian economist Simon Kuznets conceived the system of measurement (Pattilo, Poirson, and Ricci, 2004). At the time, the preeminent system of measurement was the Gross National Product (GNP). GNP differs from GDP in that GNP measures the productivity of a nation's citizens regardless of their locales, as opposed to the GDP's measurement of production by geographical location. After the Bretton Woods conference in 1944, GDP was widely adopted as the standard means for ensuring national economies. Gross Domestic Product (GDP) therefore, is a monetary value of all the finished goods and services produced within a country's overall economic activity.

### **Empirical Review**

Afxentiou & Serletis (1996) in a study investigated the impact of external debt servicing on economic growth in 55 developing countries. The major objective of the study was to identify a statistical relationship between foreign debt servicing and economic growth on 55 developing countries that faced debt service problem. In their study, the authors categorized the 55 countries into four based on per capita income and the level of debt. 14 out of the 55 countries were categorized in one group as indebted middle income countries, 10 as moderately indebted low income countries, 12 as severely indebted middle income countries and the rest 19 as indebted low income countries. The time for the analysis was 1970-1990 and was classified in two sub periods: the first period (1970 – 1980) which is characterized by an alarming growth in foreign debt and the second period (1981 -1990) was the era of debt servicing problem. The analysis is carried out on both time periods using the four categories. For a better analysis, each group was treated as a separate specific case and the effect of six debt indicators on the growth of per capita income was investigated. Result of the study shows that in the first period (1970-1980), there was a negative relationship between

indebtedness and economic growth in all the four groups or at all income levels. According to the authors, at this period developing countries used the foreign debt to overcome the shock from the oil price increase.

The result from the second group showed a negative relationship between indebtedness and economic growth on two groups of the severely indebted developing countries. This is the period where debt forgiveness and rescheduling began. According to Afxentiou and Serletis (1996), the foreign loan was misused by indebted low developing countries. And they faced a debt service problem when they were asked to pay their debt obligation based on the contractual agreements.

Adesola (2009) empirically investigated the effect of external debt service payment practices on the economic growth of Nigeria. Ordinary Least Square method of multiple regressions was used to examine how debt payment to multilateral financial creditors, Paris club creditors, London club creditors, Promissory Notes holders and other creditors relates to gross domestic product (GDP) and gross fixed capital formation (GFCF) using data from 1981 to 2004. The study provides evidence that debt payment to Paris club creditors and

Promissory Notes holders are positively related to GDP and GFCF while debt payment to London club creditors and other creditors show a negative significant relation to GDP and GFCF.

Hameed, Ashraf & Chaudhary (2008) in their study on the effect of external debt servicing on the growth of Pakistani's economy analyzed the long run and short run relationships between external debt servicing and economic growth. Annual time series data from 1970 to 2003 was obtained to examine the dynamic effect of debt service, capital stock and labour force on economic growth of Pakistan. The result of their study showed that debt service was negatively and significantly related to economic growth of Pakistan while capital stock and labour were positively related to economic growth of the country.

Fonchamnyo (2009) studied the effect of economic and social performance in 60 low-income countries to assess the relative effectiveness of the Highly Indebted Poor Countries (HIPC) Initiative. He divided the 60 low-income countries into four groups based on their 2005 HIPC status: non HIPCs, pre-decision point, decision point and completion point HIPCs. He hypothesized that those countries included in the HIPC Initiative will show better



improvement in economic and social development than those countries not included. To regress this he estimated an investment function and an economic growth function, both by generalised method of moments, and found that his HIPC dummy is positive and significant in both. Thus, he concluded that investment and growth have improved in HIPCs since the institution of the HIPC Initiative, and there was also evidence that health care and education enrolment experienced some improvement in countries that had reached the completion point of the HIPC Initiative.

Fosu (2009) studied the effect of external debt on the growth of 35 countries in sub-Saharan Africa using World Bank data for the period 1980 to 1990. By regressing GDP growth on the growth rates of labour, capital, exports, and external debt, Fosu showed that net outstanding debt had a negative effect on economic growth (for given levels of production inputs). Furthermore, he also found that growth across the sub-Saharan African nations would have been 50% higher during the period of study in the absence of the debt burden. Fosu also found little evidence of a negative correlation between external debt and investment levels.

Alfredo and Francisco (2014) investigated the relationship between external debt and economic growth in some Latin American and Caribbean countries. The result of their study using regression analysis showed that lower total external debts were associated with high growth rates.

Udeh, Ugwu & Onwuka (2016) investigated the impact of external debt on economic growth in Nigeria using time series data of 1980-2013. Data were analyzed using ordinary least square. It was discovered that external debt had a positive relationship with GDP at short-run but a negative relationship at long-run.

Ugwu and Nzewi (2016) in a paper presented at International conference of Faculty of Management Sciences, Nnamdi Azikiwe Awka on Evaluation of the effect of external debt on economic growth indices in Nigeria using ordinary least square method of regression found that there is a positive relationship between external debt on one side and Gross Domestic Product (GDP), exchange rate and capital expenditure.

Uma, Ebo and Obidike (2012) in another study Debt and debt servicing: Implications on Nigeria economic development. The data analysis was done using ordinary least square method and the result showed that total domestic debt and total external debt

are inversely related to gross domestic product but at an insignificant level.

project (when undertaken by this company) negative (Berensmann, 2004).

## **Theoretical Framework**

### **Debt Overhang Theory**

Debt overhang theory popularized by Krugman in 1988 is the condition of an organization (for example, a business, government, or country) that has existing debt so great that it cannot easily borrow more money, even when that new borrowing is actually a good investment that would be self liquidating (Berensmann, 2004).

This problem emerges, for example, if a company has a new investment project with positive net present value (NPV), but cannot capture the investment opportunity due to an existing debt position, i.e., the face value of the existing debt is bigger than the expected payoff. Hence, the equity holders will be reluctant to invest in such a project because most of the benefits will be reaped by the debt holders. In addition, debt holders will not finance the firm if the company cannot convince the debt holders that the project will not fail. The situation emerges if existing debt holders of a company can be expected to lay claim to (part of) the profits of the new project, and this renders the NPV of the

Debt overhang can affect firms or countries that have excessive amounts of debt, but are solvent, in the sense that the value of their assets exceeds the value of their liabilities. Debt overhang also prevents firms that are insolvent, with assets worth less than their liabilities from recovering from their troubles. Bankruptcy which takes the form of reorganization or receivership, for banks, can cure the problems of debt overhang for insolvent institutions. Successful bankruptcy reorganizations allow organizations to reduce their debt levels and allow new private shareholders to bear enough of the gains from new investments that they will pursue new projects that have positive expected net present value (Abrego and Ross, 2011).

The concept of debt overhang has been applied to sovereign governments, predominantly in developing countries (Krugman, 1988). It describes a situation where the debt of a country exceeds its future capacity to pay it. Debt overhang in developing countries was the motivation for the successful Jubilee 2000 campaign. The problem of debt overhang was used as a justification by governments to inject capital into banks around the world after

the collapse of Lehman Brothers in September 2008 and the subsequent falls in stock markets worldwide. Nevertheless, many governments in the financial crisis of 2008, including the United States, primarily bought newly issued preferred stock. Preferred stock is similar to debt in that it gets paid before common stock; it also pays regular dividends that are similar to interest. Thus, the capital infusions of Troubled Assets Relief Program's Capital Purchase Program (TARP CPP) in the United States may have done little to cure debt overhang problems in the United States largest banks (World Bank, 2015).

According to debt overhang theory, a certain level of external debt has a direct positive effect to economic growth until a certain point where by an additional debt will have a negative effect to growth. The debt overhang theory shows that if there is some likelihood that in the future debt will be larger than the country's repayment ability; expected debt-service costs will discourage further domestic and foreign investment because the expected rate of return from the productive investment projects will be very low to support the economy as the significant portion of any subsequent economic progress will accrue to the creditor country. To Elbadawi, Benno, & Njuguna (2007) this eventually will further reduce both domestic and

foreign investments and hence downsizes economic growth.

## **METHODOLOGY**

### **Research Design**

The research design adopted in this study is ex-post facto design. The study hypothesized that external debt and debt servicing do not have a significant effect on the economic growth of Ghana and Nigeria. The model proxied Real growth of Gross Domestic Product (RGDP) as the dependent variable to measure economic growth while external Debt (TEXD), debt servicing (DS), were used as independent variables. Inflation (INF), Exchange Rate (EXR) and Gross Capital Formation were controlled in the study.

### **Population of the study**

The population of the study includes eighteen West African countries with a population of about 340 million people. Data on External Debt (ED) and Gross Domestic Product (GDP) for selected countries in West Africa for the period 2000 – 2015 were used.

### **Sample size and sampling technique**

Ghana and Nigeria were selected for the study through a purposive sampling technique. Ghana and Nigeria were chosen because both countries share similar

historical, political and economic antecedents.

**Model specification**

The model used aggregate production function to explain the relationship between an economic output and inputs of labour and capital as expressed in the equation below;

$$Y = f(A, K, L, H)$$

Where Y = Output or Production

A = Technology

K = Capital

L = Labour

H = Human resources.

Since external debt comes in the form of needed capital fund as contained in the dual gap theory, then capital in the above could be replaced with external debt while Output or production is replaced with economic growth (i.e. real growth in Gross domestic product) Hence, we have

$$RGDP = f(EXD, L, H, A)$$

Where RGDP = Real growth in Gross domestic product and EXD = External debt.

Replicating the Augmented Production function above  $RGDP = f (TEXD, DS,$

INF, EXR, GCF) and to make the mathematical relationship estimable, we log the variables as seen below.

The econometric form of the base model is specified as;

$$RGDP = f (TEXD, DS) \dots \dots \dots (1)$$

The econometric equation becomes;

$$GDP = \beta_0 + \beta_1 TEXD + \beta_2 DS + \beta_3 INF + \beta_4 EXR + \beta_5 GCF + \mu \dots \dots \dots 2$$

The a priori expectation for the coefficients in the model are  $\beta_1, \beta_2, > 0$  while  $\beta_3, \beta_4, \beta_5 < 0$

Where;

RGDP = Real growth of gross domestic product

$\beta_0$  = Intercept of relationship in the model/constant

$\beta_1 TEXD$  = coefficient of Total external debt

$\beta_2 DS$  = coefficient of debt servicing

$\beta_3 INF$  = coefficient of inflation

$\beta_4 EXR$  = coefficient of exchange rate

$\beta_5 GCF$  = coefficient of gross capital formation

u = stochastic or error term

Transforming the variable into their log forms, we have the equation below:

Dependent Variable is Annual Growth in Gross Domestic Product (Y<sub>a</sub>)

Variable	Ghana			Nigeria		
	Coefficient	t-statistics	Prob.	coefficient	t-statistic	Prob.
Constant	5.19843	6.69**	0.0053	6.6778	8.83*	0.0000
TEXD	4.55432	5.34**	0.0089	3.6534	-1.34	0.3437
INF	0.10065	2.44**	0.0001	1.65549	-1.02	0.0001
EXR	0.19874	2.34	0.0003	1.2977	-1.50	0.0563
GCF	1.23000	12.98***	0.0000	1.23455	3.99**	0.0000
AR(1)	-	-	-	0.40016	-	-
R-squared	0.63987	-	-	0.71005	-	-
Adjusted R-Squared	0.61665	-	-	0.68888	-	-
Durbin-Watson	1.43321	-	-	1.36852	-	-
F-statistic	28.445	(0.0001)	-	24.230	-	-
(probability)	-	-	-	0.000	-	-

$$\log GDP = \beta_0 + \beta_1 \log TEXD + \beta_2 \log DS + \beta_3 \log INF + \beta_4 \log EXR + \beta_5 + \log GCF + \mu \dots \dots \dots 3$$

To check the speed adjustment of the dependent variable on changes in the independent variables, the vector error correction model (ECM) was introduced in the equation (3)

Stating the error correction model (ECM) from equation (3), the model becomes;

$$\log GDP = B_0 + \beta_1 D \log TEXD_{t-1} + \beta_2 \log DS_{t-1} + \beta_3 \log DINF_{t-1} + \beta_4 \log DEXR_{t-1} + \beta_5 \log DGCF_{t-1} + \pi_{ecm} \dots \dots \dots (4)$$

Where; ECM = Error Correction Term  $\pi$  = is the adjustment parameter

The hypothesis for the co-integration test is stated thus;

Null hypothesis (H<sub>0</sub>):  $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$  (No co-integration)

**Findings and Discussion.**

**Hypothesis One**

**H<sub>01</sub>:** Total external debts have no significant effect on Gross Domestic Product of Ghana and Nigeria

**Table 1: Result of OLS Estimation on the Impact of Total External Debts on Economic Growth of Ghana and Nigeria**

\*: indicates significant at 1% level; \*\*: indicates significant at 5% level, \*\*\*; indicates significant at 10% level  
 Authors computation.

The decision rule is rejecting  $H_0_1$  if the probability is less than 0.05. With a coefficients of  $-4.55432$ ,  $p=0.0089 < 0.05$  for Ghana and  $-3.65344$ ,  $p=0.3437 > 0.05$  for Nigeria, it is indicative that total external debts had negative impact on economic growth of Ghana and Nigeria for the period 2000 – 2015. The study therefore rejects the null hypothesis for Ghana but do not for Nigeria. The study therefore concludes that total external debts have significantly impacted on economic growth in Ghana but have not in Nigeria

This result is against a priori expectation. As remarked by Ayadi and Ayadi (2008), indiscriminate borrowings, coupled with non-servicing of debt, and its cumulative impact took effect on Ghana and Nigeria when the total external debt stock significantly depressed GDP growth in both countries. Indeed, Ghana had to be bailed out under the HIPC relief in 2000 while Nigeria exited the Paris Club in a historic debt relief package in 2005. However results of similar studies in Ghana and Nigeria were consistent with (Samuel and Emeja 2009, Ndekwu 1998, Nnanna and Dogo 1999, Nwaogwugwu, 2008; Frimpong and Oteng-Abayie, 2006) with our finding. All these works remarked that though total external debts have increased substantially in Ghana and

Nigeria over the years, it has impacted negatively on the growth of gross domestic product in both countries.

### Hypothesis Two

$H_0_2$ : External debt servicing has not significantly impacted on Gross Domestic Product of Ghana and Nigeria

**Table 2: Result of OLS Estimation on the Impact of Total Debt Service on**

Dependent Variable is Annual Growth in Gross Domestic Product ( $Y_t$ )

Variable	Ghana			Nigeria		
	Coefficient	t-statistics	Prob.	coefficient	t-statistic	Prob.
Constant	5.4978	7.88*	0.00	6.08554	7.22*	0.0
	8	*	65			000
DS	-	-	0.00	-4.44321	-2.02	0.0
	2.8875	6.94*	34			007
	4	*				
INF	-	-	0.00	-1.88540	-1.33	0.0
	0.8765	4.45	06			000
	4	8***				
EXR	0.1432	-3.99	0.00	-1.99987	-1.98	0.0
	3		03			002
GCF	0.1129	10.9	0.00	1.26666	2.10663	0.0
	9	8***	01		**	000
AR(1)	-			0.35678		
R-squared	0.5123			0.64887		
Adjusted R-squared	0.4899			0.61665		
Durbin-Watson	1.4887			1.32111		
F-statistic	142.44			138.236		
(probability)	(0.0001)			(0.0000)		

### Economic Growth of Ghana and Nigeria

\*:indicates significant at 1% level; \*\*:indicates significant at 5% level, \*\*\*;indicates significant at 10% level

Authors' computation

The decision rule is rejecting  $H_0$  if the probability is less than 0.05. The result of the test analysis showed that debt servicing impacted negatively on economic growth of Ghana and Nigeria for the period of study. The resultant coefficients were negative and significant for both countries. With a resultant coefficients of -2.88754,  $p=0.0034<0.05$  for Ghana and -4.44321,  $p=0.0007<0.05$  for Nigeria, it is clear that external debt servicing had negative impact on economic growth of Ghana and Nigeria for the period 2000 – 2015.

This result meets a priori expectation under the debt overhang theory. The coefficient associated with debt service is statistically significant in both countries. This is a strong validation of the debt overhang and crowding out theory in Ghana and Nigeria. All the variables of external debt and debt service negatively and significantly affect growth of gross domestic product in both countries.

### **Conclusion and Recommendations**

Sequel to the findings, the study therefore, concludes that external debt and debt servicing did not improve the growth of Gross Domestic Product (GDP) of Ghana and Nigeria but rather had negative impact for the period 2000-2015.

The study therefore recommends that

1. The Governments of Ghana and Nigeria should henceforth, seek better terms of external loan repayment which include longer period of moratorium ranging from 10 or more years before the maturity of the debts. The principal vulnerability of Ghana and Nigeria's debt servicing problem was the open-ended burden of higher interest payment in the event of an increase in international interest rate. Ghana and Nigeria should therefore seek fixed interest rate in future debt contracts.
2. The Governments of Ghana and Nigeria should ensure that henceforth, terms of external debt contracts should be well spelt out, gazetted and allowed for public debate before execution. Debts negotiations also should eschew policies that could lead to stern conditions like compounding of interests. To this end, both Governments of Ghana and Nigeria should seek for multi-year rescheduling of future external debts rather than year by year basis.

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### Appendix 1: Nigeria's External Debt Service Profile (US\$'000)

Year	Multilateral	Percentage	Bilateral	Percentage	Total
2000	1,854,816	51.75	1,729,269	48.24	3,584,091
2001	2,254,307	47.73	2,468,036	52.26	4,722,350
2002	1,476,880	50.80	1,430,094	49.19	2,906,979
2003	1,631,344	50.052	1,627,893	49.94	3,259,242

2004	1,710,307	50.075	1,705,136	49.92	3,415,449
2005	1,807,145	10.26	15,800,310	89.73	17,607,455
2006	6,710,138	50.035	6,700,516	49.96	13,410,676
2007	1,010,498	50.21	1,002,005	49.78	2,012,506
2008	669,447	61.96	410,894	38.03	1,080,343
2009	732,992	64.57	402,121	35.42	1,135,115
2010	859,138	75.17	283,762	24.82	1,142,903
2011	503,185	60.42	329,609	39.57	832,796
2012	407,250	61.80	251,708	38.19	658,959
2013	620,737	62.77	368,101	37.22	988,840
2014	702,825	72.67	264,306	27.32	967,131
2015	902,120	75.85	287,120	24.14	1,189,243

Source: Nigeria's Debt Management Office, External Debt Service Stock (Various Years)

### Appendix 2: Values of Exchange Rate and Inflation Rate

Year	Exchange Rate	Inflation
2000	102.1052	6.93
2001	111.9433	18.87
2002	120.9702	12.88
2003	129.3565	14.02
2004	133.5004	15.00
2005	132.1470	17.86
2006	128.6516	8.24
2007	125.8331	5.38
2008	118.5669	11.58
2009	148.8802	11.54
2010	150.2980	13.72
2011	153.8616	10.84
2012	157.4994	12.22
2013	157.3112	8.48
2014	158.5526	8.06
2015	197.2303	9.66

Source: Central Bank of Nigeria  
Statistical Bulletin (Various Years)

### Appendix 3: Ghana's External Debt

Year	Multilateral	% of Total	Bilateral	% of Total	Others	% of Total	Total Debt
2000	3,951.64	65.63	1,681.26	27.92	388.10	6.44	6,021.00
2001	3,916.64	65.00	1,756.92	29.15	353.00	5.85	6,025.56
2002	4,046.00	65.98	1,861.51	30.36	223.80	3.65	6,131.31
2003	5,057.76	66.99	2,222.84	29.44	268.30	3.55	7,548.90
2004	5,307.27	82.05	921.99	14.25	238.62	3.68	6,467.88
2005	5,565.12	87.66	602.51	9.49	180.18	2.83	6,347.82
2006	1,326.86	60.94	732.03	33.62	118.35	5.43	2,177.24
2007	1,667.92	46.45	992.64	27.64	929.80	25.89	3,590.36
2008	2,028.31	50.26	1,168.22	28.95	838.54	20.78	4,035.07
2009	2,461.76	49.15	1,687.25	33.69	858.86	17.15	5,007.87
2010	3,081.94	48.76	2,211.06	34.98	1,027.67	16.26	6,320.08
2011	3,891.78	51.27	2,712.32	35.73	985.35	12.98	7,589.45
2012	4,225.14	47.81	2,906.53	32.89	1,703.89	19.28	8,835.56
2013	4,876.99	42.54	3,877.12	33.82	2,708.56	23.62	11,462.67
2014	6,004.88	46.30	3,985.33	30.73	3,005.23	23.17	12,968.44
2015	6,543.00	47.50	5,998.77	43.55	1,231.25	8.93	13,773.02

### Service Profile (US\$'000)

Year	Bilateral	Percentage	Multilateral	Percentage	Total
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2000	294,805,000	75.20	392,016,000	57.07	686,821,000
2001	169,539,000	60.24	281,410,000	62.40	450,949,000
2002	162,032,000	79.71	203,275,000	55.64	365,307,000
2003	178,392,000	39.09	456,346,000	71.89	634,738,000
2004	227,988,000	80.76	282,287,000	55.32	510,275,000
2005	274,383,000	82.67	331,899,000	54.74	606,282,000
2006	253,383,000	88.37	286,717,000	53.08	540,100,000
2007	197,636,000	84.50	233,879,000	54.19	431,515,000
2008	263,860,000	88.66	297,608,000	53.00	561,468,000
2009	242,020,000	87.97	275,097,000	53.19	517,117,000
2010	304,485,000	84.07	362,158,000	54.32	666,643,000
2011	294,128,000	85.96	342,134,000	53.77	636,262,000
2012	439,494,000	84.24	521,660,000	54.27	961,154,000
2013	832,924,000	88.98	936,079,000	52.91	1,769,003,000
2014	685,487,000	88.03	778,640,000	53.18	1,464,127,000
2015	705,433,000	71.40	987,988,000	58.34	1,693,421,000

Source: Bank of Ghana (Various Years)

### Appendix 4: Ghana's Total External Debt, 2000-15 (US\$' Millions)

Source: Bank of Ghana (Various Years)

### Appendix 5: Nigeria's External Debt Profile (US\$ Million)

Year	Bilateral	Multilateral	Others
1988	14,400.00	2,838.00	26,755.00
1989	15,871.00	3,171.00	12,544.00
1990	17,171.00	3,842.00	12,086.00
1991	17,793.00	4,016.00	11,921.00

1992	16,454.70	4,518.00	6,592.10	27,564.80
1993	18,160.50	3,694.70	7,689.18	28,718.20
1994	18,334.32	4,402.27	6,692.27	29,428.86
1995	21,669.60	4,411.00	6,504.20	32,584.80
1996	19,091.00	4,665.00	4,304.00	28,060.00
1997	18,980.00	4,372.68	3,735.12	27,087.80
1998	20,829.93	4,237.00	3,707.31	28,773.54
1999	20,507.33	3,933.23	3,598.5	28,039.21
2000	21,180.00	3,460.00	3,389.91	28,273.88
2001	22,092.93	2,797.87	3,334.99	28,347.00
2002	25,380.75	2,960.59	2,594.37	30,991.87
2003	27,488.92	3,042.08	2,353.18	32,916.81
2004	30,847.81	2,824.32	2,225.03	35,944.66
2005	15,412.40	2,512.19	2,553.38	20,477.97
2006	0.00	2,608.30	936.19	3,544.49
2007	0.00	3,080.91	573.30	3,654.21
2008	0.00	3,172.87	547.49	3,720.36
2009	0.00	3,222.30	725.00	3,947.30
2010	0.00	4,152.27	381.92	4,534.19
2011	0.00	4,545.18	1,088.53	5,633.71
2012	703.03	5,267.42	556.92	6,527.07
2013	850.42	5,887.10	1,526.82	8,264.34
2014	1,412.08	6,799.36	1,500.01	9,711.45
2015	1,685.00	7,560.43	1,473.00	10,718.43

**Source: Debt Management Office, Nigeria's External Debt Stock (Various Years)**