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An Econometrics Analysis of the Impact of External Debt Crisis on Nigeria Economy (1986-2010)

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ABSTRACT
The study examines the impact of external debt crisis on Nigeria economy using time series data from 1986-2010. This study adopted both descriptive and econometric tool for its analysis. Regression analysis was used to examine the relationship between external debt crisis and Nigerian economy. The result revealed a positive relationship. The correlation coefficient (R- squared) is 0.993. This showed the strength of the model, 99% indicate a strong model. The result also showed that the model has a good fit as shown with 0.993% which implies that external debt, external debt service, government capital expenditure, gross capital formation, inflation rate and interest rate accounts for about 99.3% systematic variation in Gross Domestic Product while the remaining 0.7% are other factors which affects the Gross Domestic Product but were not captured in the model, the adjusted R-squared showed that the model still has a good fit of 99.0% whereas the remaining 1% are other factors which affects Gross Domestic Product but were not captured in the model which was earlier represented with the error term. F-test is used to test joint statistical significance among the variables; the result of f-statistics (368.9) showed that there is joint statistical significance between Gross Domestic Product and external debt, external debt service, government capital expenditure, gross capital formation, inflation rate and interest rate as shown with low probability value at 5% level of significance. The Durbin Watson (1.93)-statistics showed that the serial correlation is minimal (that is, there is no evidence to show the presence of autocorrelation). Augmented Dickey Fuller methodology was adapted to test for the stationary of the data used, Error Correction modelling was used to test for the short-run correcting mechanism that can bring the disequilibrium back to equilibrium and the long run relationship was carried out using the Johansen co-integration test. The value of Error correction model given as 0.01% indicates a feedback of or an adjustment of 0.01% from the previous period disequilibrium of the present level of gross domestic product in the determination of causality between the past level of gross domestic product and the present and past level of the explanatory variables. The Johansen co-integration result indicates that there is existence of long run relationship between gross domestic product and the fundamental used in the model. The study therefore conclude that external debt has a great link with the gross domestic product and should therefore be managed effectively through various fiscal, monetary and external debt control policies. The study therefore recommends that spending of external debt on productive self-liquidating investment must be strictly adhered to while projects to be financed with external loan must be properly appraised and that government and regulatory agencies must try as much as possible to reduce both internal and external debt while focusing on capacity building using domestic available resources to promote economic activities.

Keywords: external debt, external debt service, inflation rate, interest rate, government capital expenditure, gross capital formation and gross domestic product.

INTRODUCTION

1.1Background to the Study

Borrowing is part of the world economic process. All civilized and organised societies of the world including developed nations like United States of America (USA), United Kingdom etc and developing nations take loans from International Monetary Fund (IMF), World Bank, Paris Club and other nations to effect their development objectives. Individuals borrow too, in fact since available resources in the world are short of human needs, and borrowing helps to reduce our wants. Borrowing may be considered as a second –best alternative to money creation during periods of unemployment. In this way, it is seen as an instrument of managing the economy.

Foreign borrowing no doubt can lead to growth. However, if government borrows abroad, it must introduce debt management as a major policy concern to effectively manage debt problems. Then to manage external debt efficiently, authorities must project the time of debt obligation; they must accurately forecast export earnings, domestic revenue and future access to finance.

The purpose of these external funds to Nigeria like other developing countries are to accelerate her economic growth up to a point where a satisfactory self sustaining rate of economic growth can be achieved. Economic growth like that of advanced countries is desired by developing countries like Nigeria, hence it resorts to external borrowing to finance viable projects for development and also to break the clutches of abject poverty. These projects include provision of economic infrastructure, education, health facilities as well as heavy industries all of which requires foreign assistance in the face of lower savings in the economy.

Nigeria's debts, like that of most other African countries, appear to be on a ceaseless and perpetual increase. The more we pay, the more we seem to owe doubtful deals, dud projects (white elephants) and dubious debts. Africa is neck deep in the debt trap. Debt has become a millstone (an albatross) on Africa's neck, jeopardizing her economic growth and compromising her social development. We spend a lion's share of our national income servicing debts leaving little money for social services and infrastructural development, and even still much less for investment. In the process, we have paid more than we originally borrowed, yet our debt-like a malignant virus continues to multiply.

The Nigerian economy has not been spared from these severe debt crisis experienced by most African countries. In fact, Nigeria was classified by the then world banks to be among the heavily indebted poor countries(HIPC).The Nigerian economy has undergone considerable strained and severe stresses since the collapse of the oil boom in the early 1980's.The production and consumption patterns that emerged from the era of oil boom could not sustain itself in the face of declining foreign exchange earnings in the years of oil glut thus pressure mounted on the various sectors in the economy resulting in huge deficit government finances, low external reserve and current deficit in balance of payment among others .This led the government to resort to borrowing to fill this resource gap in the Nigerian economy(DMO 2010 Annual Report).

External debt overhang is adversely impacting on the Nigerian economy in the flow of foreign investment. More so the much needed inflow of foreign resources for investment stimulation, growth and employment has been hampered. Despite the numerous efforts by the debt management office, the situation still exacerbates the pains of external burdens as it blocks off the relief that would have been received through speedy economic recovery, growth and development .From the projection of debt management office as stated earlier, it appears the Nigeria's debt overhang cannot be addressed by a succession of flow rescheduling without reduction in stock of debt. Nigeria's external debt crisis is one critical factor of the Structural Adjustment Programme (SAP) introduced in 1986 to revamp the economy to a sustainable path of recovery, that is, the high level of external debt service payment could be reduced, Nigeria would be in a better position to finance a larger volume of domestic investment critical for the promotion of growth and development is jeopardized when the magnitude and structure of external debt service result to capital flight, this no doubt has an enormous effect on the process of achieving growth of the country's economy.

1.2 Statement of the Problem

The issue of external debt in Nigeria has become an immense status bridging the main stream of international economy and politics. Foreign loan and aids are no longer used as instruments of assistance but as a weapon of oppression, suppression and perpetual underdevelopment. The management of external debt has assumed a critical dimension for Nigeria, not in doubt; this can be seen in the rising total of external debt outstanding and the cost of servicing the huge debt. From the comfortable position of lending even from African Development Bank (ADB), Nigeria became one of the biggest debtor nations in the world and is listed among the fifteen (15) most indebted nations in the bankers plan list.

At the end of the civil war in 1970,the country's external indebtedness was relatively low and was of little significance till 1974 but by 1977,external debt of Nigeria was 496.9million and it rose by over 205% to 1265.7million or US$2.2billion and was contracted from the International Capital Market(ICM) in 1978.This skyrocketed to US$32.6billion in December end,1995 (CBN, 2008).With huge debt outstanding, debt service obligation rose astronomically as a result of rising interest rates in the international money market and declining grace period, and grant element leaving little of foreign exchange for import of external raw material and consumer's good.

Principal and interest repayments drain the nation's resources and curtail the possible expenditure of resources on productive ventures. The severe debt management crisis in recent years has caused tremendous setback to the economy as the nation's funds are expended on servicing of this debt instead of productive ventures that would enhance the growth of the economy. Policy makers are also faced with challenges of ensuring that reasonable level of resources are mobilized for debt servicing to avoid the risk of default and to maintain the relationship necessary for debt relief negotiation with the creditor nations.

With the numerous efforts by the debt management policy measures, the rate of economic growth seems to be lagging behind, this is as result of excess funds being allocated to debt servicing of the country. It is against this backdrop that, this work intends to investigate the relationship between external debt crisis and Nigeria economy.

1.3 Objectives of the Study:

The broad objective of this research work is to examine the impact of external debt crisis on Nigeria economy. The specific objectives of the study are to:

(i) analyse the extent external debt crisis has impacted on the economic growth of Nigeria.

(ii) identify causes of foreign debt burden.

(iii) examine the relationship between external debt crisis and Nigeria economy.

1.4 Research Hypothesis

This study is hinged on the following hypothesis;

Ho: External debt crisis has no significant impact on Nigeria economic growth

2.0 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptual Framework

2.1.1 External Debt

According to the Oxford dictionary of economics, debt is money owed by one person or organisation to another. Debts may have interest or redemption payments linked to a price index. A debt contract states the terms of borrowing; what interest and redemption payments the borrower must make and what collateral must be provided and also stipulates the currency in which payment is due. Debt is also an amount of money borrowed by one party from another. Many corporations and individuals use debt as a method for making large purchases that they could not afford under normal circumstances. A debt arrangement gives the borrowing party permission to borrow money under the condition that it is to be paid at a later date usually with interest.

An external debt is the portion of a country's debt that was borrowed from foreign lenders including commercial banks, governments or international financial institutions. These loans including interest must usually be paid in the currency in which the loan was made. In order to earn the needed currency, the borrowing country may sell and export goods to the lender's country. Foreign or external debt is that part of the total debts in a country that is owed to creditors outside the country. The debtor can be the government, corporations or private households. The debts include money owed to private, commercial banks, other governments or International Monetary Fund (IMF) and World Bank. It is also a loan contracted by foreign countries for domestic development. It is also the outstanding amount of those actual current and non contingent liabilities that require payment(s) of principal and /or interest by the debtor at some point(s) in the future and that are owed to non residents by residents of an economy (Wikipedia).

2.1.2 External Debt Crisis

Debt crisis refers to inability or unwillingness of major debtors to service their debts, or serious fears of this. A debt crisis occurs if major debtors are unable or unwilling to pay the interest and redemption payments due on their debts, or if creditors are not confident that these payments will be made. These are likely to occur when debts are large, and interest rates rise or the economy slumps. This may also occur if a country with a weak economy is not able to repay external debt due to the inability to produce and sell goods and make a profitable

return. The international debt crisis of the 1980s occurred when several major less developed countries (LDCs) had difficulty meeting their debt obligations.

2.1.3 Economic Growth

Economic growth means an increase in the capacity of an economy to produce goods and services compared from one period of time to another. Economic growth is a process by which a nation's wealth increases overtime. The most widely used measure of economic growth in a country's total output of goods and services gauged by the Gross Domestic Product (GDP).

Economic growth can also be referred to as the increase in per capita gross domestic product or other measures of aggregate income, typically reported as the annual rate of change in the real GDP. Economic growth is primarily driven by improvement in productivity which involves producing more goods and services with the same inputs of labour, capital, energy and materials (Wikipedia, 2009).

Ajayi (1996) perceived economic growth as the increase overtime of a country's real output of goods and services. However, for the purpose of this study, economic growth means an increase in a country's real Gross Domestic Product over a period of time usually one fiscal year.

2.2 Foreign Debt Management and Economic Growth

The advantage of external debt is that it adds resources to the economy; however, excess reliance on external debt may expose the country to certain risks that may trigger a debt crisis.

The problem of extraordinarily high public debt and very large external or foreign debt are the consequences of large and persistent fiscal and current account balance of payments deficits, imprudent use of borrowed resources such as wasteful government spending, resort to borrowing for non-development expenditures, undertaking of low economic priority development projects, and poor implementation of foreign aided projects, weakening debt carrying capacity in terms of stagnation or decline in real government revenues and exports (Masroor A.2007).

In this case of external debt, as long as growth rate of foreign exchange earnings exceeds the rate of growth for debt, the debt burden as a proportion to foreign exchange earnings will not go up, also, if the real rate of growth of debt exceeds the real rate of GDP or revenue, the debt to GDP or debt to revenue ratio will begin to rise and if this excess persists for a long time, the growth in debt burden will assume explosive proportions leaving the growth and welfare of the economy stagnated (Thimphu, Bhutan 2009).

2.3: The Impact of Nigeria's External Debt

The issue of debt involves liquidity or solvency problems. The liquidity refers to the inability of a country to service or offset her debt when due, even when the country has the financial capacity to do so. Solvency on the other hand relates to the question of whether or not the value of a country's liability exceeds her ability (capability) to pay at any point in time (Roddick J.1988).

Unlike the case of solvency in financial accounting which associated with equitation, the insolvency of an economy is openly referred to as the situation where the real interest rates or marginal external debt service exceeds. The increase in the national income made possible by the loans. An economy's liquidity problem means the country's inability to make debt service payment on schedule.

The inability of country to service her debt as at when due depends on the following;

1. Her domestic policies and programs.

2. The scope of effective mobilization of her inputs.

3. The scope of her export promotion.

At the world trade level, it is established that if real interests are made low, and the growth of the world trade is sustained and is held strongly such that protecting it is not a problem, then debt problems would be resolved. However this study would emphasize the extent of economic of economic activities and the level of living

standard which may be considered minimum, the struggle to generate the needed foreign exchange for debt servicing in Nigeria and still make Nigeria relevant to the global markets.

From the foregoing discussion, one could say that Nigeria's situation can be regarded as an insolvent on, though it was more of liquidity problem from the start. Another very good way of determining insolvency is when debt value exceeds the expected present value of the borrower's income stream when compared with the amortization (Anyanwu 1997).

In recent studies, it has been revealed that export growth poses to be the main variable for measuring the income stream. Thus the simple rule for solvency is that export growth rate (X) should be greater than the interest rate (R) i.e. X>R=solvency (s), (Eaton and Taylor 1986). For Nigeria, there was no insolvency in the period 1970 to 1988.The year 1988 Nigeria experienced difficulty in debt servicing. Lack of inequality entails when a country does not have enough cash to pay current obligation, when the maximum income lies below a debt service obligation in some particular period.

2.4 Causes of External Debt Burden

Debt burden is a situation of irredeemable debt. Countries that are faced with debt crisis are heavily indebted and they cannot pay the principal debt they owe. They use greater part of the GDP in servicing debt with little left for domestic social services. Consequently, the indebted countries source more external finance in form of loans to meet their basic needs. The causes of external debt burden are outlined as follows; inefficient trade and exchange rate policies; Adverse exchange rate movement; Poor tending and inefficient loan utilization, Accumulation of arrears and penalties.

The causes of foreign debt burden outlined above have over the years been the brain behind foreign debt crisis in Nigeria. In 1999 when Nigeria transited from military to civil rule, the country was enamoured with an external debt of over $36billion, accumulated over the period of 40 years. The bulk of the country's external debt accrued through accumulated penalties and compound interest loans which the world richest countries extended to previous administrations, mostly military dictators. Indeed borrowing by Nigeria has been put at about $10billion. In spite of the fact that Nigeria has paid about $35billion in annual debt service payment over the years, the country still owed $36billion.As at 2005 ending, Nigeria had achieved debt cancellation with the Paris club group of creditors. On the terms of this agreement, out of the debt of $30billion, the Paris club cancelled $18billion (including moratorium interest) representing 60% of the debt after the remaining $12.4billion was bought back by Nigeria with payment. (CBN, 2007)

Despite the cancellation of debt by Paris club, Nigeria has fully returned to foreign debt with fresh "frivolous" borrowing from external creditors including China and World Bank. As it stands, Nigeria's external debt stock has increased to $4.57 billion in December 2010 and is gulping a reasonable portion of the annual budget (CBN, 2010).

2.5 Strategies to Reduce Nigeria's External Debt Crisis Burden:

Debt burden according to Oxford dictionary of economics (second edition) is the cost of servicing debt. From the period of 1986 to 2010, Nigeria's foreign debt has increased considerably to over $4,578.77 million in 2010 with a low rate of debt service payment of about $354.41million in 2010 ((CBN, 2010).

In a bid to check the rate of increase in Nigeria foreign debt burden, various policies and measures have been put in place in recent time. The strategies though have yielded different effects on the local debt stock; however none has successfully achieved the desired effects of complete elimination of the debt. Some of the policies or measures used by Nigeria over the years include: embargo on new loans, limitations on debt services payment (CBN, 2002).

Embargo on New Loans

According to Anyanwu (1997), embargo is the imposition of measures to check the escalation of the level of total stock and minimize the problem additional to debt burden. In order to check the alarming rate of increase of the Nigerian foreign debt stock and equally minimize the problem of foreign debt, this policy was adopted in 1984 on the borrowing of state government from external sources. In 1978, the limit on loans stock was pegged at 50 billion Naira for federal government while in 1982 it stood at 200million Naira maximum for state government, since then the federal government has continued to fix the maximum level of debt commitment per

annum for both the federal and state government. This policy was used in 1984 and this is noted to have not been effective as the quest for external loans have remained unabated.

Limitations on Debt Service Payment

This measure requires setting aside a proportion of export earnings to meet debt service obligations to allow for internal development. For instance in 1980, all state governments were obliged to spend 10% maximum of their total income on debt service payment in order to avoid pressure and burden of indebtedness on the citizens. The policy measure provided that the defaulting state is called out 18% necessary by the federal ministry of finance and the amount involved would be deducted at source from the budgetary allocation to such state at more convenient time. In the case of the federal government, a maximum of 30% of export earning was fixed for debt servicing (Anyanwu, 1997).

Debt Restructuring

The term "debt restructuring" is used to describe the conversion of an existing debt into another category of debt through debt rescheduling, buy-back and collateralization and refinancing of trade arrears (Fakiyesi et al, 2005)

Debt Rescheduling

This means changing the maturity level of a debt. According to the oxford dictionary of economics by john black, debt rescheduling entails a revision of a debt contract deferred to a later date than those originally agreed. It involves spreading over a long period of time than it was initially or earlier scheduled to be finally offset. For instance in 1986, the foreign debt worth $1.6million from London club (official creditors) and payable in 1987 was rescheduled to a later date. The rescheduling of debts involves changing the maturity structure of the debt. It is spread over a longer period until it is financially liquidated (Anyanwu 1997).

Debt Buyback and Collateralization

The buyback agreement implies the offer of a substantial discount to pay-off an existing debt (Anyanwu 1997).During this period an argument was concluded in February 1992 when Nigeria bought about $3.4billion commercial debt due to the London club at 60% discount rate. The sum of $2.054billion was a collateralized amount. The par bound was therefore issued at zero coupons.

Refinancing of Trade Arrears

A refinancing agreement involves the procurement of new loans by a debtor country to pay off an existing debt. Particularly, in short term trade debt. The new loan may be contracted from the same sources or a new set of creditors. Nigeria put in place her first refinancing arrangement by July 1983 when $2.1billion worth of trade arrears as contained in the documentary letters of credit were refinanced at 1.5% interest rate above the London inter-bank offers at(LBOR) and this was fully paid in 1986.Nigeria accepts the offer and loans were fully paid on schedule.

Debt Conversion

This is the exchange of monetary instrument (promissory note) for tangible finance assets. It is a mechanism for reducing a country's external debt burden by changing the characters of the debts. Debt Conversion is a process of changing the character of a country's debt; it involves changing an existing external debt for some form of investment, it was practised since 1988 in Nigeria.

Debt Equity Swap:

This is the transformation of obligation into equity share in favour of the creditor country within the debtor country (Ojowu, 1987); Debt equity swap was proposed in Nigeria by Aluko as a means of easing the Nigerian debt burden and attracting foreign capital. The climate under which such policies would operate successfully is where there is liberation of investment, ownership control and inflow of capital.

The Nigerian government established Debt Conversion Committee (DCC) by July 1988 to take charge of Nigeria's debt conversion programme and the country's debt stock. By 1994,the total amount of debt redeemed stood at $823.4million,other financial benefits associated with debt conversion arrangement as above include cash gift and a total discount of $380.2million,leading sectors like agriculture, manufacturing and building

constitution, through the "tackle down process" benefited from the programme. However, it has on the minds of many scholars to the long run effect of debt equity conversion on the Nigerian economy. According to critics of the programme, debt equity swap rather than hold prospect for Nigeria's economic independence would promote both political and economic dependence.

Debt for Cash

This is an arrangement between a debtor country and a creditor country about local and foreign loans which the creditor country is liable to pay in the debtor country. In some instance, it becomes easier for foreign investment through debt for cash to secure local currency as working capital to debtor nations.

Debt for Export

This entails the usage of items of exports to pay the government's external debt while the exporter acting for the government will be paid really in the local currency by the government.

Debt for Nature

In this case, external debt is converted into some found proceeds used in supporting conservation programmes on natural resources such as wildlife forest and the likes.

The above discussed form the strategies that can be used to reduce Nigeria's external debt burden crisis.

2.6: Theoretical Framework

There has been a lot of theoretical and literature review on both economic growth and external debt crisis. There are numerous theories on economic growth and external debt crisis as it affects the economy. This research work considered a few of them which are of great importance to the subject matter, which supports growth and kicks against external borrowing. In this study, two theories will be considered

2.6.1: Debt Management Theories

System-Stabilizing Theory (SST)

This theory combines the development cycle models of Beenstock,el tal and Jhingan, 2006. The theory states that nations like individuals tend to acquire debt during their youthful phase of life or development cycles. However just as individuals repay or retire their debt as they mature, so nations should reduce their indebtedness and their trade surpluses as they reach the mature phase of their development cycle. This implies that the system stability theory support debts especially at the early stage of development cycle of a nation. The borrowed funds add up to the locally available capital to foster economic growth in form of supporting domestic investment as well as infrastructural development. However, failure to repay the debts acquired as they fall due pushes the country to a situation of debt overhang.

This theory recognises that the debt crisis arose from policies that have wasted resources and living standards and development. These policies have no doubt led to distortions in relative prices and have encouraged capital flights-as seen in substantial external liquid funds of private citizens of debtor countries in foreign banks. It recommended a complete halt of further funds to defaulting countries, a ban on debt rescheduling to provide the right moral fibre and signal to these countries. It insists that the cost of debt crisis should be borne by debtor countries themselves primarily and by the bank. It advocates reforming the economies of debtor countries to get their prices right, privatize part of economies and reorient them to the global economy.

In Nigeria, before independence, there was a need to upgrade infrastructure in the country. This was however limited by the fact that the resources available at that time were grossly inadequate. Against this background, Nigeria in 1959 acquired a loan which was used for construction of railway across the country to repay wholly this debt coupled with the problem of debt service has combined to generate a situation of debt overhang as predicted by the stability theory.

Debt Overhangs Theory

A situation in which the external debt stock of a country exceeds the country's capacity to repay such debts in the immediate future is referred to as a debt overhang. This situation is often synonymous with a country's

precarious economic imbalance, when the cost of sustaining her external debt stock impacts negatively on her trade balance, infrastructural build-up and political imbroglio and stability.

Hjertholm's "narrow or traditional theory" (1998) subscribed the negative impacts such external debts can bring to bear on the borrowing nation's economy. Chenery (1966)in his two-gap theory approach stipulates that external debt stocks on their own have no bearing with the debtor nations development, but what actually matters is the use to which such loans have been put. Invariably, he meant how well the borrowed funds (loans) are managed, can translate to national development.

Finance theorists such as Krugman (1988), Sachs (1989) and Ndulu (1991) have ferociously argued that such external borrowing only amount to a future tax on return to capital, and at the same time if it has been judiciously managed can actually inspire and instigate developmental purpose for the debtor nation. On the other hand, some financial experts argued that debt overhang brings or develops institutional disincentive for private investments. When investment is low, economic growth is stagnant and the nation would need to rely more on the external loans and aids of sustenance, and the cycle goes on unabated.

In another development, Seriaux and Samy in Krugman (2001) subscribed to it that a good number of sub-Saharan African countries have attempted to counter the effects of debt overhang, pointing out that some of the mechanisms used in this respect include debt equity swap or scrap, reduce debt servicing, debt rescheduling and organized pleas for corporate debt relief. Unfortunately, many successes have been recorded from the relief from the debt overhang from these mechanisms beside the 2005 debt relief granted to Nigeria by the Paris club of creditor nations.

The theory then concludes that ,if and when debtor nations adopt and implement appropriate domestic macroeconomic policies even with or without a debt relief package, economic growth could still be stimulated to reposition such debtor nations along the path of economic recovery.

2.7: Empirical Review

Many empirical studies have been carried out to examine the impact of external debt on Nigeria and other developing countries. Among these studies are:

Ajayi and Oke (2012) examine the effect of external debt burden on economic growth and development of Nigeria. The study used regression analysis of Ordinary Least Squares (OLS) on secondary data. The findings indicate that external debt led to devaluation of the nation's currency, increase in retrenchment of workers, continuous industrial strike and poor educational system. Based on this finding, the study suggests that debt service obligation should be invested in profitable venture(s), which will generate a reasonable amount of money for debt repayment.

Adepoju et al (2007) investigates the effects of external debt management on sustainable economic development taking lessons from Nigeria. The research used descriptive statistics for the analysis. The result of the research showed that availability of access to external finance strongly influences the economic growth process of any nation. However, failure of any owing country to service her debt obligation results in repudiation risk preventing such to obtain new loans since little or no confidence will be placed on the ability to repay. The result concludes that, it will undermine the efforts to obtain substantive debt relief over the medium term with a tremendous increase in interest arrears and other penalties. This will subsequently depress the economy both in the long and short runs. Best arrangement in debt payment must put in place from time to time in response to changes in the economy and the polity. Debt can only be productive if well managed so as to make the rate of return higher than the cost of debt servicing.

Nigeria's economy has for a long period been characterized by a high degree of openness, with its major sector depending on foreign sources for a wide range of consumption and investment goods, the problem of external borrowing and the resultant indebtedness have strong consequences on the economy.

Adesola (2009), conducted a study on debt servicing and economic growth; an empirical investigation. He employed the ordinary least square multiple regression method. He reviewed and analysed the effect of external debt payment practices on sustainable economic growth and development with particular emphasis on Nigeria between 1981-2004.The study shows that debt payment to Nigerian creditors affect the economic growth both positively and negatively.

Morriset (1991), did a research on the topic, "Can debt reduction restore economic growth in highly indebted countries?" He examined the effect of debt reduction within a macro economic framework and tested at various direct and indirect relationships between external debt investment and economic growth. He estimates models and carried out simulations for Argentina between 1962 to 1986 using the three stage least squares method. This study saw that foreign assets often lead to an increase in domestic interest rate, reducing private investment. The result showed that the effect of 30% debt relief is 2-43% and 5.4% on GDP level for the first and fifth year respectively. Since debt reduction includes a liquidity effect, the reduction in net transfer and the incentive effect comes from decline in the stock of debt.

Amakom (2003), examines the effect of public debt on economic growth and poverty in Nigeria from 1972-2002. The study found that, reasonable level of external debt would help finance investment which can enhance economic growth and improve poverty status. But excessive borrowing has a negative effect on the growth and poverty. The research also found that, external debt service rates play very crucial roles towards poverty escalation in Nigeria.

Studies carried out in Nigeria reviewed that, external debt on its part has a strong negative effect on the growth process of the Nigerian economy, whereas, some that dwelled on the management of external debt reviewed that a well managed external (foreign) has a positive effect on the growth process of the economy up to a point. The major reasons behind the assertion is that, Nigeria's external debt without being properly managed has reached a situation of debt overhang and increase in production is dissipated away in form of debt service.

3.0 RESEARCH METHODOLOGY

3.1Method of Data Analysis

This study used time series data that span a period of 24 years (1986 - 2010). This period is considered relevant because it was characterized by a substantial growth in external debts and it reflects the period of Structural Adjustment Programme (SAP) in Nigeria which was initiated to restructure and diversify the productive base of the economy in order to reduce the dependence on Oil sector and import. It was to achieve fiscal and balance payment viability over the period. The chosen period is wide enough for adequate analysis of the trend of external debt crisis and economic growth in Nigeria.

A multiple regression model was used as analytical tool. The external debt crisis and Economic growth data were obtained from Central Bank of Nigeria statistical bulletins and annual reports

The Johansen co-integration test was carried out to investigate the time series characteristics of data to test whether these variables are integrated and related in the long-run.

Unit root test was also employed using the Augmented Dickey-Fuller (ADF) test was used to detect the stationary or non stationary of data followed by the use of Error Correction Model(s) (ECMs).

Ordinary Least Square estimation method was used to estimate the models. In order to estimate the models, the time series properties of the variables must be investigated to determine the stationary or non-stationary state of the variables.

Model Specification

All data collection for the purpose of this study shall be evaluated, cross-checked, compared and critically analysed. It will be used to gauge the relationship between the external debt crisis and growth of Nigeria's economy. A simple open macro-economic debt growth model will be applied.

GDP = f(EXD,EXDS,GCEXP,INFL,INTR GCF)

Where;

GDP= gross domestic product

EXD=external debt

EXDS=external debt servicing

GCEXP=government capital expenditure

INFL=inflation rate

INTR=inter$_2$est rate

GCF=gross capital formation

That is:

$GDP=\beta o+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\mu$

GDP= βo+β1EXD+β2EXDS+β3GCEXP+β4INFL+β5INTR+β6GCF+ μ

Where;

X_1=External Debt

X_2=External Debt Servicing

X_3=Gross Capital Expenditure

X_4=Inflation Rate

X_5=Interest Rate

X_6=Gross Capital Formation

While;

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Slope of the regression equation

μ =Stochastic error term

A-priori Expectation

From the existing theories and empirical knowledge, it is expected that external debt crisis should have significant effect on economic growth. Government expenditure, gross capital formation as a proxy of savings should show a positive result to economic growth while external debt, inflation rate, interest rates should have an inverse relationship with economic growth meaning a unit increase in any of the parameters will reduce economic growth thereby causing the country to be underdeveloped.

It is expected that there will be a positive relationship between external debt and economic growth as availability of funds lead to increase in the growth of the economy. The increase of government capital expenditure is expected to boost economic growth as this will lead to investment and more output production. However external debt servicing is expected to be negative in the long run. Thus the signs of β_1 - β_4 and β_6, are expected to be positive while the sign β_5 is expected to be negative in the long run.

4.0 EMPIRICAL RESULTS AND DISCUSSION

Unit root result

Non-stationary data produces spurious regression, hence the result may be misleading. Therefore, it is cognizant to establish the stationarity of data. This is carried out using the Augmented Dickey-Fuller (ADF) unit root test. The decision rule is that If the variable is stationary at level, the variable is said to be integrated of order zero 1(0), if the variable is non stationary at level, the ADF test can be utilized and the first difference of the variable can be used for testing a unit root, in this case the variable is said to be co-integrated of order one 1(1), it must be noted that a larger negative ADF test statistic value must be greater than the Mackinnon critical value at 5% and at absolute value which suggest rejection of the hypothesis of a unit root and implies that the series is stationary.

The table below shows the summary of unit root test conducted on the parameter at level and 1st difference.

Summary of ADF Statistics

Variables	ADF Test Statistic Value				Remark
	At Level	p-Value	1st difference	p-value	
GDP	0.2760	0.9138	0.7188	0.8219	Not Stationary
EXD	2.1643	0.2235	3.0227	0.0476	Stationary at 1st difference
EXDS	1.2599	0.6307	3.2187	0.0318	Stationary at 1st difference
GCEXP	2.0228	0.9997	4.2782	0.0030	Stationary at 1st difference
GCF	0.9591	0.7508	5.0087	0.0006	Stationary at 1st difference
INF	2.2697	0.1890	4.2940	0.0029	Stationary at 1st difference
INT	2.8924	0.0610	5.1916	0.0004	Stationary at 1st difference

Time series data are often assumed to be non stationary and thus it is necessary to perform a pre-test to ensure there is a stationary relationship among variables to avoid the problem of spurious regression. Based on the error correction mechanism, it is necessary for the variables to be of the same order of integration. For the testing of unit roots, the Augmented Dickey-Fuller (ADF) was used. Interestingly, it can be observed that on application of the ADF test on the level series all the variables was not stationary (that is, it contains a unit root) as indicated by the fact that its respective critical value is larger (in absolute terms) than the calculated ADF statistics, thus the null hypothesis of the presence of a unit root could be rejected, as it is integrated of the order one. All the variables are were not stationary at level but where stationary at first difference expect gross domestic product that is not stationary. The null hypothesis of the presence of unit root in the series was rejected as indicated by the values of their calculated ADF (in absolute terms) statistics which were higher than their critical values. In this direction, we say that their series are integrated of the order one that is 1(1).

Error Correction Mechanism

Application of the normal OLS regression may yield spurious result. Therefore, this procedure involves determining the time series properties of the data and thereafter specifying an error correction model, which will help in investigating both the short and long run impacts of the identified variables on the gross domestic product.

The ECM has shown above is otherwise known as speed of adjustment is significant with the probability value which is less than the 0.005. This can be seen on the ECM that shows ECM value of 0.0001.This implies that the present value of gross domestic product adjust rapidly to changes in external debt, external debt service, government capital expenditure, gross capital formation, inflation rate and interest rate. The value of ECM given as 0.01% indicates a feedback of or an adjustment of 0.01% from the previous period disequilibrium of the present level of gross domestic product in the determination of causality between the past level of gross domestic product and the present and past level of the explanatory variables which includes external debt, external debt service, government capital expenditure, gross capital formation, inflation rate and interest rate.

The coefficient of the error-correction term, however, is a short-term adjustment coefficient and represents the proportion by which the long-term disequilibrium (or imbalance) in the dependent variable is being corrected in each short period.

Johansen Co-integration Test

Johansen co-integration is used to examining the long run relationship among variables; the co-integration analysis in this study will be unrestricted Johansen co –integration test.

The standard statistics in the interpretation of the test are maximum Eigen valve and trace statistics, at a given level of significance, in order to identify the existence of co-integration equilibrium on the basis of the standard statistics identified above.

Trace Value

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No of CE(s)	Eigen Value	Trace Statistic	0.05 Critical value	Prob.**
None *	0.981974	255.0067	125.6154	0.0000
At most 1 *	0.941093	162.6405	95.75366	0.0000
At most 2 *	0.797007	97.50918	69.81889	0.0001
At most 3 *	0.715711	60.83375	47.85613	0.0019
At most 4	0.505905	31.90518	29.79707	0.0282
At most 5	0.364360	15.68954	15.49471	0.0467
At most 6 *	0.204696	5.267714	3.841466	0.0217

Trace test indicates 7 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The result show that the existence of co-integration equation on the basis of trace statistics, the presence of one co-integration unveil the existence of a long run equilibrium relationship between the variable used in the model, where as the result shows that all the variables are have co-integration, this indicate that there is existence of long run relationship between gross domestic product and the fundamental used in the model.

Maximum Eigen value

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No of CE(s)	Eigen Value	Max-Eigen Statistic	0.05 Critical value	Prob.**
None *	0.981974	92.36618	46.23142	0.0000
At most 1 *	0.941093	65.13136	40.07757	0.0000
At most 2 *	0.797007	36.67543	33.87687	0.0226
At most 3 *	0.715711	28.92857	27.58434	0.0334
At most 4	0.505905	16.21564	21.13162	0.2125
At most 5	0.364360	10.42183	14.26460	0.1857
At most 6 *	0.204696	5.267714	3.841466	0.0217

Max-eigen value test indicates 5 co-integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**Mackinnon-Haug-Michelis (1999) p-values

The result shows the rejection of no-integration on the basis of maximum eigen value, maximum eigen value will reject the hypothesis of no co-integration, when maximum eigen value is greater than the hypothesized value, the above result shows that most of the variables indicate the rejection of no co–integration because the maximum eigen value is greater than the hypothesized value.

Regression Result and Interpretation

GDP= 1.1631 + 0.107LOG(EXD) + 0.367LOG(EXDS)+ 0.742LOG(GCEXP)+ 0.0005GCF + 0.0001INF – 0.064(INT) + 0.0001(ECM)
S.E = (0.538) (0.077) (0.059) (0.062) (0.0003) (0.002) (0.012) (0.0002)
T-Test = (2.158) (1.382) (6.210) (11.904) (0.153) (0.054) (5.048) (5.218)
R-Square = 99.3
Adjusted R-Square = 99.0
F- Statistics = 368.96
DW- statistic = 1.93

Source: Eview 7 Statistical package

From the regression result, the model performed relatively well with correlation coefficient (R- squared) which is 0.99. This showed the strength of the model, 99% indicate a strong model. The result of the R-squared showed that the model has a good fit as shown with 0.993% which implies that external debt, external debt service, government capital expenditure, gross capital formation, inflation rate and interest rate accounts for about 99.3% systematic variation in Gross Domestic Product while the remaining 0.7% are other factors which affects the Gross Domestic Product but were not captured in the model. Even after adjusting with the degree of freedom, the adjusted R-squared showed that the model still has a good fit of 99.0% whereas the remaining 1% are other factors which affects Gross Domestic Product but were not captured in the model which was earlier represented with the error term. F-test is used to test joint statistical significance among the variables; the result of f-statistics (368.9) showed that there is joint statistical significance between Gross Domestic Product and external debt, external debt service, government capital expenditure, gross capital formation, inflation rate and interest rate as shown with low probability value at 5% level of significance. The Durbin Watson (1.93)- statistics showed that the serial correlation is minimal (that is, there is no evidence to show the presence of autocorrelation). The regression coefficients of external Debt (EXD), external debt servicing (EXDS), government capital expenditure (GCEXP), inflation rate (INFL), interest rate (INTR), gross capital formation (GCF) all carry positive signs, which confirmed to a-prior expectation. The t- values of regression coefficients of external debt servicing, government capital expenditure, interest rate and are statistically significant at 1% and 5% while that of external Debt, inflation rate and gross capital formation are not significant at 5%. In line with these, we accept the null hypothesis of this research that external debt crisis have no significant impact on Nigeria economy.

Discussion of the Findings

The model used in this research revealed a positive relationship between external debt and gross domestic product. This implies that increase in the external debt would increase economic growth in Nigeria. This could be on the ground that when government borrows money to finance capital projects, it helps increase the level of output in the economy which also leads to an increase in Gross Domestic Product. The parameter estimate showed that a percent increase in the external debt will increase the Gross Domestic Product by 0.10 percent. This direct relationship is statistically insignificant using t-test and standard error. The t-calculated is 1.382 while t-tabulated is 2.04, the standard error is 0.077 while half of the parameter estimate is (½ * 0.107= 0.053). Since the t-calculated is lesser than t-tabulated and the standard error is greater than half of the parameter estimate, there is sufficient reason to conclude that there is statistical insignificance between external debt and economic growth. Thus, the government and regulatory agencies must try as much as possible to reduce both internal and external debt while focusing on capacity building using domestic available resources to promote economic activities.

The empirical result shows that there is positive relationship between external debt service and gross domestic product. This implies that increase in the external debt services would increase economic growth in Nigeria.

Investigation into the rationale behind this direct relationship showed that external debt service which targets the promotion of infrastructure facilities and to increase investment opportunities will lead to increase in gross domestic product, whereas external debt service which is used for recurrent expenditure or finance political ambitions will reduce the economic progress in the country. The parameter estimate showed that a percent increase in the external debt service will increase the Gross Domestic Product by 0.36 percent. This direct relationship is statistically significant using t-test and standard error. The t-calculated is 6.210 while t-tabulated is 2.04, the standard error is 0.059 while half of the parameter estimate is (½ * 0.367= 0.184). Since the t-calculated is greater than t-tabulated and the standard error is less than half of the parameter estimate, there is sufficient reason to conclude that there is statistical significance between external debt service and economic growth.

More so, the study showed that there is positive relationship between government capital expenditure and Gross Domestic Product. The magnitude of the increase is shown with the value of the parameter estimate which implies that a percent increase in government capital expenditure would result on average to about 0.74% increase in gross domestic product. It is therefore imperative for the government to improve the capital finances so that the stock of human capital can encourage labour productivity and subsequently result to improved economic growth. However, this direct relationship is statistically significant at 5% level of significance using t-test and standard error for decision making, the t-test is 11.904 while the t-tabulated is 2.04, the standard error is 0.062 while half of the parameter estimate is (½ * 0.7422= 0.3711). Since the t-calculated is greater than the t-tabulated and the standard error of the parameter estimate is less than half of the parameter, there is sufficient evidence to conclude that there is statistical significance between government capital expenditure and Gross Domestic Product.

Investigation also showed that gross capital formation has positive relationship with gross domestic product. The value of the parameter estimate showed that increase in the gross capital formation would increase economic growth. This implies that if government finances capital projects it will have multiplier effects on all productive activities in the country which robotically increases the gross domestic product. The empirical analysis showed hundred percent increase in gross capital formation would result on average to about 0.05 percent increase in gross domestic product. However, this relationship is statistically insignificant at 5% level of significance using t-test and standard error for decision making. The t-test is 0.153 while the t-tabulated is 2.04 at 5% level of significance; the standard error is 0.0003 while half of the parameter estimates (½ * 0.0005= 0.00025). Since the calculated t-test is less than the tabulated t-test and the standard error is greater than half of the parameter estimate, there is sufficient evidence to conclude that there is no statistical significance between gross capital formation and gross domestic product. Therefore, investment such as foreign private investment, foreign direct investment, public investment and domestic private investment should be encouraged with mild policies so that economic growth can be enhanced.

Also, positive relationship exists between inflation rate and gross domestic product, which implies that an increase in the rate of inflation will bring about an increase in the growth of the economy. This does not suggest that inflation rate should be allowed to skyrocket indiscriminately, some economists have argued that though mild and moderate inflation is important for economic growth, it should however be monitored to ensure that it does not lead to adverse effects on the economy. However, the result of the empirical findings showed the magnitude of the increase; hundred percentage increases in inflation rate would result to about 0.01% increase in the Gross Domestic Product. Despite the positive relationship, the empirical findings showed that there is no statistical significance between inflation rate and gross domestic product as shown with the value of the t-test and standard error. The t-calculated is 0.054 while t-tabulated is 2.04, the standard error is 0.002 while half of the parameter estimate is (½ * 0.0.0001= 0.00005). Since the t-calculated is lesser than t-tabulated and the standard error is greater than half of the parameter estimate, there is sufficient reason to conclude that there is no statistical significance between inflation rate and Gross Domestic Product.

Furthermore, interest rate has negative relationship with the Gross Domestic Product; this implies that increase in the interest rate would result to decrease in gross domestic product. Although, interest rate is expected to have a direct relationship with gross domestic product and this is justified on the economic ground that increase in interest rate will increase the tendency of the members of the public to save, if savings are much in the saving vault of commercial banks, it enhances their financial intermediation role of channelling excess fund from the public to the productive or real sector of the economy. However, the magnitude of the negative relationship is shown with the value of the parameter estimate, this showed that hundred percent increase in interest rate would result to about 6.4% increase in the Gross Domestic Product. Also, the empirical findings showed that there is statistical significance between interest rate and Gross Domestic Product at 5% level of significance as shown

with the value of the t-test and standard error. The t-calculated is 5.04 while the tabulated t-test is 2.04; the standard error is 0.012 while half of the parameter estimate is (½ * 0.064= 0.032). Since the t-calculated is greater than the tabulated t-test and the standard error is lesser than half of the parameter estimate, there is sufficient evidence to conclude that there is statistical significance between interest rate and Gross Domestic Product.

Conclusion

This research work examined the impact of external debt crisis on Nigeria economy from 1986- 2010. From nominal point of view, Nigeria external debt has been on increase while empirical evidence revealed that the economy is not performing well. Nigeria is indebted to several creditors and this does not augur well for the overall well being of our economy.

It was also revealed that Nigerian economy for a long period been characterized by a high degree of openness, with its major sectors depending on foreign sources for a wide range of consumption and investment goods, the problems of external borrowing and the resultant indebtedness have strong consequences on the economy.

Having examined the impact of external debt on Nigerian economic growth, it is hoped and expected that the recommendations put forward be followed to their logical end to put the economy on a stable route to reduced Debt burden and enhance sustainable and positive inflow of capital. The study therefore concluded that external debt has a great link with the gross domestic product and should therefore be managed effectively through various fiscal, monetary and external debt control policies.

Recommendations

The study therefore recommends that spending of external debt on productive self-liquidating investment must be strictly adhered to while projects to be financed with external loan must be properly appraised and that government and regulatory agencies must try as much as possible to reduce both internal and external debt while focusing on capacity building using domestic available resources to promote economic activities.

To ensure sustainability of debt servicing, borrowing countries like Nigeria need to adopt efficient external debt management strategies, which entail carefully planned schedules of external debt acquisition, deployment and retirement.

Place embargo on new loans especially to the state government and other government parastatals except for important economic reasons which are inevitable and for project which are self floating and self sustaining.

The federal government should lay down well considered guideline for external loans. Defining the purpose, duration, moratorium requirements and commitments, negotiation fees etc including the conditions under which the government can approve and guarantee external loans

The money saved from external debt servicing should be ploughed into poverty reduction programmes to boast agriculture and other sectors of the economy, to meet the MDGS thereby promote economic activities.

REFERENCES:

Adepoju, A. A, Salau, A. S. & Obayelu, A.E (2007): The effect of External Debt Management on Sustainable Economic Growth and Development: lessons from Nigeria, MPRA paper No. 247.

Ajayi, S.I and Khan, A (2000): "External Debt and Capital flight in the sub-Saharan African": Being a paper presented to the IMF.

Ajayi, S. I. (1992): An Economic of capital Flight from Nigerian policy Research working papers, WPS 993 Western African Department: The World Bank.

Amakom, J (2003) "Nigeria Public debt and Economic Growth": An Empirical Assessment and Effect on Poverty. Enugu: African Institute for Applied Economics.

Anyanwu, J. C. (1997) :Nigerian Public Finance. Joanee Educational publisher Ltd, Onitsha, First Edition. Pp210.

Central Bank of Nigeria (CBN) Statistical Bulletin (2010), Vol. 21.

Central Bank of Nigeria (2002) Statistical Bulletin, Lagos CBN

Central Bank of Nigeria (2010): Economic Report for the half of 2010.

Central Bank of Nigeria (2010): Staistical Bulletin, Central Bank of Nigeria, Abuja,

Chenery, O.A. (1966): External Debt and Economic Growth: A reflection (African Economic research Consortium research paper): Nairobi African Research consortium.

Jhingan, M. L. (2003): Advanced Economic Theory: New Delhi, Vrinda

Krugma, P (1998): Finance and Forgiving a Debt overhang: Some analytical Notes. Journal of Development Economics, Pp 29,253-268.

Fosu, A. K. (1996). The Impact of External Debt on Economic Growth in sub-Saharan Africa. Journal of. Economics. Dev, 21(1): 93-118

Morriset. J. (1991): Can Debt Reduction Restore Economic Growth in Highly Indebted Countries? Revise D'Economique polique, 101 pp639-666

Wikipedia, (2010): Real Versus Nominal Value (Economics).
http://en. Wikipedia.org/wiki/Real Versus_ Nominal Value_ (Economics).

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