



Munich Personal RePEc Archive

The Upshot of External Debt on Economic Growth in West African Countries: A Panel Data Approach

Adeniji, Sesan

University of Lagos

29 December 2013

Online at <https://mpra.ub.uni-muenchen.de/52555/>
MPRA Paper No. 52555, posted 30 Dec 2013 06:05 UTC

The Upshot of External Debt on Economic Growth in West African Countries: A Panel Data Approach

By

Adeniji Sesan Oluseyi

Department of Economics, University of Lagos, Nigeria.

Email: adeniji.sesan@yahoo.com

Abstract

This study investigates the upshot of external debt on economic growth in West African countries using panel data techniques of analysis for a period of 1971 -2012. The aftermath of the analysis shows a negative and significant relationship between external debt and economic growth in the economies of the countries under consideration. This is in no way different from what economic theories preached and the outcome of some previous research work on the issue. Therefore, we suggest that government should endeavor to put-in necessary measure to ensure judicious use of fund obtain from abroad for the purpose which they are acquired considering the highest priority of the project and also develop effective and efficient external debt management strategies that will favour timely repayment or liquidation of the debt to avoid debt overhanging.

Keywords: External Debt, Economic Growth and Panel data.

JEL Classification: F43, F34, C23.

I. Introduction

Economic growth which can be sustained is the prevalent concern of developing countries. Their ability to achieve this is a function of the level of their domestic resources which can be utilized and directed towards this essential goal. In a situation where the country's domestic resource is not available or adequate to pursue the economic growth objective of the country, the need for external assistance in form of external loan is inevitable. Hence, it can be inferred that the main reason of raising external loan by developing countries is invariably to bridge the domestic resource gap in order to accelerate economic growth. Such borrowing is expedient to a national economy provided the loan proceeds are judiciously used for the purpose for which the loan is acquired, and in such to facilitate the eventual repayment or liquidation of the debt.

External debt is a 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. It is a debt incurred by the government of developing countries, generally in quantities beyond the governments' ability to repay. "Unpayable debt" is external debt with interest that exceeds what the country's politicians think they can collect from taxpayers, based on the nation's gross domestic product, thus preventing the debt from ever being repaid. The causes of debt are a result of many factors.

The evolution of external debts can be traced to the late 1970's, when some of the current levels of debt were stockpile following the 1973 oil crisis. Increases in oil prices forced many developing nations' governments to borrow heavily to purchase politically essential supplies. At the same time, OPEC funds deposited in western banks provided a ready source of funds for loans. While a proportion of borrowed funds went towards infrastructure and economic development financed by central governments, a proportion was lost to corruption and about one-fifth was spent on arms.

Heavy external debt does not necessarily imply a slow economic growth. It is a country's inability to meet its debt obligations compounded by the lack of information on the nature, structure and magnitude of the external debt (Were, 2001). Countries may have heavy external debt along with relatively higher level of exports that can help them to sustain their level of external debt. But external debt, if not sustainable, imposes higher risk to the economic prosperity, as its servicing which is also an indicator of higher current account deficit, may lead to debt overhang in a country. For any economy, debt either public or publically guaranteed, which also includes the contingent liabilities, plays a crucial role towards overall economic progress. The heavy debt problem has disrupted the economic development and has created other serious socio-economic problem. Heavy debt servicing in recent years, attempts to minimize balance of payment deficit and to prevent the depletion of external reserves, had led to the drastic curtailment of imports. Measures were adopted to curtail the debt crisis among which are rescheduling and refinancing of the existing debt. But in the long run, these measures only proved to be postponing the evil days in which eventually developing countries found their self.

The problem of external debt is not peculiar to Africa developing countries alone. One appreciates the universality of its nature when one considers the growing external debt in the third world countries of Asia and Latin American as well as some countries in the Eastern block. But the way and manner such debts are strategically managed lends widely acceptance to them. Many and various research work has been conducted by many researchers in this same area. Two approaches to the question of debt crisis emerged. The first approach is that of developing

countries whose proponents argue that the problems emerge from the medium term of economic development and also from the framework of international financial cooperation, thereby underling insufficiency of the available financial resources. The industrialists on the other hand believed that the problem of foreign debt does not necessarily mean the indication of economic weakness and non-fulfillment of the guidelines of the international financial corporations. Therefore, according to them, the problem of debt is with insufficient transfer of resources from the rich nations to the poor nations. Other reasons advanced by the industrialist are, the problem of balance of payment, poor administration, corruption and mismanagement of resources.

In a nutshell, the reasons advanced above cannot be left out in the characteristic of developing economies which necessitates its analysis to ascertain the relationship between external debt and economic growth in developing countries. Therefore, this paper examines the upshot of external debt on the economic growth in West African countries over the period of 1981-2012.

The rest of the paper is organized as follows: Section II summarizes the literature review, while section III deals with model specification and methodology of the study. Section IV discusses estimation and empirical result. Section V concludes with a discussion of policy.

II. Literature Review

2.1 Theoretical review

Various theories have been put forward by scholar in an attempt to explain the subject of external debt and its relationship with economic growth and development. The two of these theories that has gained the recognition in this paper are “the growth-cum debt” and “debt dynamics”. They are briefly discussed below as thus:

Growth-cum-debt: This model considers the debt capacity in terms of the benefits and costs of borrowing in the process of economic growth. Its emphasis was based on foreign borrowing for investment purposes, which is meant for filling the gap between domestic investment and savings (Avramovic, et. al. 1964; Solomon 1977). The model promulgated that a country will maintain its capacity to service debt provided that additions to its debt over time contribute amply to growth. A ‘debt cycle’ is proposed, in which the behaviour of capital flows may change over a number of stages which are closely linked to the course of economic growth and development. The merit of the growth-cum debt model lies in its summary of the complexities of the debt-growth mechanics into a simple and readily understandable insight, namely that any debt strategy will only work, ultimately, if there is sufficient economic growth to support it. However, in terms of analyzing debt capacity in a more specific manner, the growth-cum-debt framework suffers from a number of conceptual problems relating to its theoretical underpinnings and the rigidity of its basic assumptions (McDonald 1982). A particular weakness

is that the model focuses solely on the savings-investment gap. Yet, given that external financing will have been made available in foreign currency, it must be repaid in foreign currency, and the savings surplus must therefore somehow be converted into foreign exchange. By not considering the performance of the external sector of the borrower's economy, the growth-cum debt model is silent on this transformation problem.

Debt dynamics on the other hand stressed the issue of a borrowing country's external solvency (Simonsen 1985; Hernandez 1988). The debt dynamics show that as long as GDP grows faster than real interest rate, a country is solvent even if the ratio of foreign debt to GDP keeps growing. Under this approach, the government can be considered to be operating within its budget constraint as long as the expected fiscal policy stance keeps the debt-to-GDP ratio on a stable (or falling off) path. Similarly, Eaton (1993) defined debt dynamics as the condition that 'debt in any period cannot exceed the present discounted value of the borrowing country's stock of wealth, or future income stream', he therefore suggests that 'all sovereign borrowers are probably solvent in the sense that the discounted present value of their national resources exceeds the value of their national debt. Since debts have to be serviced with foreign exchange, the value of exports gives a more accurate impression of income than for example GDP, as it relates more directly to debt servicing ability. The key feature of the debt dynamics approach is the relationship between export performance and the cost of borrowing, and having enough money to maintain debt service capacity, such as the rate of growth of exports must equal or exceed the rate of interest on the borrowed funds. In addition, performance in the external sector must be such that the increase in domestic surplus is matched by an increase in foreign exchange so that debt payments can be effected (Hjertholm 1999).

2.2 Empirical Review

Several empirical studies have investigated how external debt affects economic growth, some of these studies concluded that negative relationship exist between external debt and economic growth while others do not find any significant relationship between them. Some of these studies are as follows:

The relationship between external debt and economic growth was studied by Geiger (1990) using lag distributional model to examine the relationship between GNP growth rate and debt burden for 9 South American countries over a period of 12 years (1974-1986) and found a statistically significant inverse relationship between the debt burden and economic growth. Also, Iyoha (1999) used simulation approach to investigate the impact of external debt on economic growth in sub-Saharan African countries estimating a small macro-econometric model for the period 1970-1994. He found an inverse relationship between debt overhang, crowding out and investment thereby concluding that external debt depresses investment through both a —disincentive effect and a —crowding out effect, thus affecting economic growth. Furthermore,

Pottillo, et. al. (2001) used a panel data set for 93 developing countries for the period 1968–98 and finds that the average impact of debt on economic growth becomes negative when debt is at about 160–170 percent of export-earnings or 35– 40 percent of gross domestic product. They further stress that, the marginal impact of debt starts becoming negative at about half of these values; as such high debt reduces economic growth mainly by lowering the efficiency of investment rather than its volume. In the same vein, Clements et al. (2003) used a panel of 55 low-income countries for the period 1970-1999. They found that the turning point in the net present value of external debt is at around 20-25% of GDP. To wrap this up, Asley (2002) opined that high level of external debt in developing country negatively impact their trade capacities and performance. Debt overhang affects economic reforms and stable monetary policies, export promotion and a reduction in certain trade barrier that will make the economy more market friendly and this enhances trade performance. Furthermore, debt decreases a government ability to invest in producing and marketing exports, building infrastructure, and establishing a skilled labour force. Other empirical studies that find a non-linear effect of external debt on growth are those of Smyth and Hsing (1995) and Cohen (1997).

On the contrary, Warner (1992) uses 13 developing countries for a period of 1960-1981 and 1982-1989, he could not find any conclusive evidence whether debt has any negative effect on economic growth or it may have depressed investment in those developing countries. He further argues that a clear way to approach this issue is to examine out-of-sample forecasts of investment over debt crisis period (1982-1989). While Cohen (1993) in disentangling the correlation between LDC debt and investment in the 1980s, used a larger data set of 81 developing countries over a period of 1965- 87 and did not find any evidence in favor of a negative relationship between external debt and economic growth. Hence, as the level of economic growth either increases or decreases with external debt, this affect the level of investment. As such, it is to this end that Deshpande (1997) attempt to explore the debt overhang hypothesis by an empirical examination of the investment experience of 13 severely indebted countries, using two period, the first period is 1975-1983 and the second period is 1984- 1991 with OLS estimation for panel data. Finding from the result shows that the first period has a positive influence on investment, while the second half of the time period turn out to be negative. This means, for the first period of 1971-1991, the investment ratio for the sample countries shows a rising and then a declining tendency at the end of the eighties. Focusing on one of the Heavily Indebted Poor Countries (HIPC), Were (2001) analyzed the debt overhang problem in Kenya and tried to find evidence for its impact on economic growth. Using time series data from 1970-1995, this study did not find any adverse impact of debt servicing on economic growth; however, it confirmed some crowding-out effects on private investment. Furthermore, employing data from 59 developing and 24 industrial countries over a period of 1970-2002, Schlarek (2004) could not find any evidence that external debt may affect total factor productivity. However, he found that in case of developing countries higher growth rate is associated with a relatively lower external debt levels and this negative relationship is mainly driven by public external debt rather than private external debt. While, in case of industrial countries, he could not

find any evidence for the existence of such relationship between public external debt and economic growth.

Hence, to this end, literatures on the upshot of external debt on economic growth cannot be said to be too flimsy, but the bulk of these literature were such an ill-disposed conclusions making it imperative for further study on this issue to be embark on.

III. Model Specification and Estimation Techniques

Georgiou (2009) analyze the relationship between external debt and economic growth using the below econometrics model:

$$\text{GRGDP} = F(\text{DEBTGDP}) \quad (3.1)$$

The above model is adopted and can be explicitly stated as thus:

$$\text{GRGDP}_{it} = \alpha + \beta \text{DEBTGDP}_{it} + \mu_{it} \quad (3.2)$$

From equation (3.2) above, GRGDP is the gross domestic product growth rate which is calculated using data at previous year's prices; DEBTGDP is the government external debt as a percentage of GDP. The subscript (i) stands for the country, while (t) for the year. Economic theory explains negative relationship between external debt and economic growth. Therefore, coefficient of debt as a percentage of GDP (β) is expected to be less than zero ($\beta < 0$).

Annual data from world development indicators (WDI) were collected for GDP growth rate and debt percentage to GDP from West African countries. 17 of these countries' data were attempted for collection, but we succeeded in getting data for 13 of the countries for the range of period of 1971 – 2012. The countries that is examined then are; Benin Republic, Burkina Faso, Gambia, Ghana, Guinea – Bissan, Liberia, Mali, Mauntania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

For the purpose of analysis, panel data method will be used as it is the most appropriate techniques to be used given the scope and the nature of data because it allows the controlling for unobservable heterogeneity through individual country effect and variables one cannot observe or measure like cultural factors or difference in business practices across countries; or variables that change over time but not across entities. Panel data analysis is a statistical method, which deals with two-dimensional (cross sectional/times series) Maddala, (2001). The conjunction of time series and cross sectional data allows for higher degrees of freedom in the estimation process, has the advantage to include specific country effects, gives more data information, reduces the multicollinearity effects and allows for dynamic specification. Panel data are usually collected over time and over the same individuals and then a regression is run over these two dimensions. A common panel data regression model looks like

$$Y_{it} = a + bX_{it} + \mu_{it} \quad (3.3)$$

Where Y is the dependent variable, X is the independent variable, a and b are coefficients, i and t are indices for individuals and time. The error term μ is very important in this analysis.

Assumptions about the error term determine whether we speak of pooled effect, fixed effects or random effects pooled data. The basic assumption for pooled data is that, there are no unique attributes of individuals within the measurement set, and no universal effects across time. In other words, pooled data does not distinguish between the various countries' effects, it deny the heterogeneity that may exist among the countries. While in fixed effects model, there are unique attributes of individuals that are not the results of random variation and that do not vary across time. Fixed effect allow for heterogeneity or individuality among the countries by allowing intercept value. The term fixed effect is due to the fact that, although the intercept may differ across the countries, it does not vary overtime i.e. it is time invariant, and random effect model assumed that there are unique, time constant attributes of individuals that are the results of random variation and do not correlate with the individual regressors. In other words, all the countries have a common mean value for the intercept.

Given the three ways of obtaining the fitted regression as discussed above, the need now arise to determine the most appropriate method from the three. Hausman test has been proved in the literature as a means of chosen the appropriate method from most especially fixed effect model and random effect model. Hausman test involve the formulation of hypothesis as thus: Null hypothesis i.e Random effect model is appropriate and alternative hypothesis i.e. Fixed effect model is appropriate. Probability value will be use to draw conclusion from the above hypothesis and we reject null hypothesis if P-value is less than 5% and accept alternative hypothesis that Fixed effect is appropriate and vice versa.

IV. Estimation and Empirical Results

4.1 Unit Root Tests

Testing for unit roots has become a standard procedure in time series analyzes. For panel data, panel unit root tests have been proposed by Levin and Lin (1992), Im, Pesaran and Shin (1997), Harris and Tzavalis (1999), Madala and Wu (1999), Choi (1999), Hadri (1999), and Levin, Lin and Chu (2002). This is to avoid unseemliness use of panel least squares technique without a unit root test which can lead to spurious result. Therefore, before estimating the panel least square, we examine unit root properties in the variables through pooling of the panel data for testing the unit root hypothesis. The efficacy of the panel-based unit root test is dramatically higher compared to using a separate unit root test for each individual time series (Levin, 2002). The results of the panel unit root test are presented below as follows:

Table 4.1 Panel unit root test for GRGDP (@ Level)

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.93282	0.10341	13	520
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.60905	0.2370	13	520
ADF - Fisher Chi-square	21.8549	0.7034	13	520
PP - Fisher Chi-square	42.4802	0.9167	13	533

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Table 4.2 Panel unit root test for DEBTGDP (@ Level)

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.68716	0.2460	13	520
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.46702	0.3202	13	520
ADF - Fisher Chi-square	22.5463	0.6585	13	520
PP - Fisher Chi-square	19.5891	0.8106	13	533

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

From table 4.1 and 4.2 presented above, four different type of result for panel unit root test are presented in each table with slightly different alternative hypothesis. The most popular of them is that of Levin–Lin–Chu (2002) with a null hypothesis that the series contains a unit root, and the alternative is that the series is stationary. The Levin–Lin–Chu test assumes a common autoregressive parameter for all panels; it restricts the coefficient around the lagged dependent variable to become constant across all units with the panel. The result presented shows that the null hypothesis that the series contains unit root cannot be rejected with the test conducted at level. Therefore, further panel unit root test will be done at first difference and the results are given below as thus:

Table 4.3 Panel unit root test for GRGDP (@ First Difference)

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-21.7530	0.0000	13	507
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-27.8739	0.0000	13	507
ADF - Fisher Chi-square	449.536	0.0000	13	507
PP - Fisher Chi-square	303.272	0.0000	13	520

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Table 4.4 Panel unit root test for DEBTGDP (@ First Difference)

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.23169	0.0000	13	507
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-9.82210	0.0000	13	507
ADF - Fisher Chi-square	145.832	0.0000	13	507
PP - Fisher Chi-square	250.856	0.0000	13	520

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Table 4.3 and 4.4 above depicts the first difference panel unit root test and with the Levin–Lin–Chu (2002), the null hypothesis that the series contains unit root can be confidently rejected and that of alternative hypothesis of absence of unit root are accepted. These decisions are also supported by other results presented in the table which signifies the robustness of the test.

4.2 Presentation of Fixed Effects and Random Effect Model

At this stage in our analysis, we present the panel result of both the fixed effect and random effect as thus:

Table 4.5 Fixed Effect Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
----------	-------------	------------	-------------	-------

C	0.108879	0.403861	0.269596	0.0876
D(DEBTGDP)	-0.061674	0.007639	-8.073526	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.511707	Mean dependent var	0.099275	
Adjusted R-squared	0.509457	S.D. dependent var	9.771104	
S.E. of regression	9.323819	Akaike info criterion	7.328937	
Sum squared resid	45118.54	Schwarz criterion	7.441318	
Log likelihood	-1939.162	Hannan-Quinn criter.	7.372914	
F-statistic	5.020529	Durbin-Watson stat	2.039379	
Prob(F-statistic)	0.000000			

Table 4.6 Random Effect Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.108877	0.403861	0.269591	0.0876
D(DEBTGDP)	-0.061659	0.007639	-8.072019	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			9.323819	1.0000
Weighted Statistics				
R-squared	0.511520	Mean dependent var	0.099275	
Adjusted R-squared	0.509847	S.D. dependent var	9.771104	
S.E. of regression	9.218834	Sum squared resid	45128.05	
F-statistic	66.64997	Durbin-Watson stat	2.038892	
Prob(F-statistic)	0.000000			

Given the result presented above, there is need to ascertain which of the two result presented above is most appropriate in analyzing our panel model. This can be done through a panel data Hausman Test.

4.3 Hausman Test

Husman test is use to differentiate between the appropriateness of fixed effects model and random effects model in panel data. It compares two different estimators for the parameters of a panel data regression model. It involves testing the null hypothesis that Random Effect is appropriate against the alternative hypothesis that Fixed Effect is appropriate. The appropriateness of random effect is based on its high level of efficiency while fixed effect will be

preferred because its consistency. Hence, if the probability value of the Husman test is less than 5 percent, we will reject null hypothesis and conclude that fixed effect is appropriate. On the other hand, if the probability value is greater than 5 percent, we conclude by accepting null hypothesis and therefore accept the appropriateness of random effect. The panel data Husman test is presented in the below table.

Table 4.7 Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.034164	1	0.8534

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
D(DEBTGDP)	-0.061674	-0.061659	0.000000	0.8534

Cross-section random effects test equation:

Dependent Variable: D(GRGDP)

Method: Panel Least Squares

Date: 12/17/13 Time: 19:53

Sample (adjusted): 1972 2012

Periods included: 41

Cross-sections included: 13

Total panel (balanced) observations: 533

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.108879	0.403861	0.269596	0.0876
D(DEBTGDP)	-0.061674	0.007639	-8.073526	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.511707	Mean dependent var	0.099275
Adjusted R-squared	0.489457	S.D. dependent var	9.771104
S.E. of regression	9.323819	Akaike info criterion	7.328937
Sum squared resid	45118.54	Schwarz criterion	7.441318
Log likelihood	-1939.162	Hannan-Quinn criter.	7.372914
F-statistic	5.020529	Durbin-Watson stat	2.039379
Prob(F-statistic)	0.000000		

From the above result, it is clear that the probability value of correlated random effect Hausman test is 85 percent which is greater than 5 percent therefore we will accept the null hypothesis that the random effect is appropriate and the model will be analysis using the random effect result.

4.4 Representation and Analysis of Random Effect Result

The random effect result is represented in the below table.

Table 4.6 Random Effect Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.108877	0.403861	0.269591	0.0876
D(DEBTGDP)	-0.061659	0.007639	-8.072019	0.0000
Weighted Statistics				
R-squared	0.511520	Mean dependent var	0.099275	
Adjusted R-squared	0.509847	S.D. dependent var	9.771104	
S.E. of regression	9.218834	Sum squared resid	45128.05	
F-statistic	66.64997	Durbin-Watson stat	2.038892	
Prob(F-statistic)	0.000000			

From the above table, it can be deduced that DEBTGDP has significant negative relationship with GRGDP. This means that the higher the ratio of external debt to gross domestic product of the economies under consideration, the more the declining in the growth rate of gross domestic product. The result depicts that one unit increase in the ration of external debt to gross domestic product will lead to 6 percent decline in the growth rate of gross domestic product.

The R^2 from the result shows that a slightly above the standard 51 percent of the ratio of external debt to gross domestic product of the countries considering accounted for degeneration in the growth rate of gross domestic product. It can be concluded that 49 percent of the factors that causes decline in growth rate of gross domestic product is not explain by debt-GDP ratio. The adjusted R^2 after taken into consideration the degree of freedom shows that, 50 percent of the dependent variable is explained by the explanatory variable. The F-statistics of 66.64997 also indicates that the regression equation is significant. The DW statistics of 2.038892 further indicates that the regression equation is free from the problem of autocorrelation. The implication of this is that the estimated equation can be relied upon in making valid inference about external debt contributing negatively to growth rate of gross domestic product of West African economies.

V. Conclusion and Recommendations

This paper has delved into analyzing the relationship between external debt and economic growth in West African countries taking a span period of 1971 -2012 using a panel data technique. Georgiou (2009) model was adopted and the variables are used to estimate the pooled effect, fixed effect and random effect model of linear panel data. Hausman test was conducted to decide between using the fixed effect model and the random effect model. The outcome of this test gives credence to Random effect model and the result was interpreted in turn. The result obtained was in line with the negative relationship economic theories explained and we conclude that external debt stock hamper economic growth. This is supported by high level of significance depicted by the coefficient of external debt and its inverse relationship with economic growth.

Therefore, we suggest that government should endeavor to put-in necessary measure to ensure judicious use of fund obtain from abroad for the purpose to which they are acquired considering the highest priority of the project. It is also expedient that developing countries develop effective and efficient external debt management strategies that will favour timely repayment or liquidation of the debt to avoid debt overhanging. In the same vain, there is need for further research on other factors that affect growth rate of gross domestic product as the result of our analysis shows that external debt explained a little above 50 percent in the declining GDP growth rate of West African economies.

References

- Asley (2002): *Argued that Debt Burden is not a Problem of Freely Resource to Debt Services Payment*
- Avramovic, D. *et al.* (1964) *Economic Growth and External Debt*, IBRD. Baltimore, Maryland: Johns Hopkins University Press.
- Choi, I. (1999), "Unit Root Tests for Panel Data," manuscript of Kookmin University, Korea.
- Clements, B., R. Bhattacharya and T. Q. Nguyen (2003), "External debt, public investment, and growth in low-income countries", *IMF Working paper* 03/249.
- Cohen, D. (1997). *Growth and external debt: A new perspective on the African and latin american tragedies*. Centre for Economic Policy Research Discussion Paper, No. 1753.
- Cohen, Daniel. 1993. "Low Investment and Large LDC Debt in the 1980's", *The American Economic Review*, 83(3): 437-449.
- Deshpande, A. (1997) *The Debt Overhang and the Disincentive to Invest*. *Journal of Development Economics*, 52,1:169-187.
- Eaton, J. (1993) *Sovereign Debt: A Premier*. *The World Bank Economic Review*, 7,2:137-172
- Economic Activity*: 2, 479-501.
- Geiger, Linwood.T. 1990. "Debt and Economic Development in Latin America", *The Journal of Developing Areas*, 24: 181-194.
- Georgiou, M. N. (2009a), "Government Debt and Economic Growth. Some Comments. A Panel Data Analysis for Western Europe (1988 – 2006)", *Social Science Research Network* (SSRN).
- Hernandez-Cata, E. (1988) *Issues in the Design of Growth Exercises*. IMF Working paper July 1988
- Hjertholm, P. (1999) *Analytical History of Heavily Indebted Poor Country (HIPC) Debt Sustainability Targets*. Department of Economics University of Copenhagen, Denmark.
- Hsiao, C.; Lahiri, K.; Lee, L. *et al.*, eds. (1999). *Analysis of Panels and Limited Dependent Variable Models*. Cambridge: Cambridge University Press. ISBN 0-521-63169-6.
- Iyoha, M. A. (1999). —*External Debt and Economic Growth in Sub-Saharan African Countries: An Econometric Study*l. Paper presented at AERC workshop, Nairobi
- Levin A, Lin C.F, Chu C.J (2002) "Unit root tests in panel data: asymptotic and finite sample properties" *Journal of Econometrics* 108 (revise version of 1992's work),1-24

- Maddala, G. S. (2001). *Introduction to Econometrics* (Third ed.). New York: Wiley. ISBN 0-471-49728-2.
- Maddala, G.S., and S. Wu, 1999, A comparative study if unit root tests with panel data and a new simple test, *oxford Bulletin of Economics snd statistics*, 61, 631-652.
- McDonald, D.C. (1982) Debt Capacity and Developing Country Borrowing. *IMF Staff Papers*, 29, 603- 646
- Pattillo C., Ricci L. and Poirson H. (2001): Non-linear Impact of External Debt on Growth IMF Working Paper International Monetary Fund Washington DC.
- Schlclarek, Alfredo. 2004. “Debt and Economic Growth in Developing and Industrial Countries”, *Lund University, Department of Economics* in its series Working Papers with number 2005:34.
- Simonsen, M.E. (1985) The Development Country Debt Problem, in G.W. Smith and J.T. Cuddington eds, *International Debt and the Developing countries*, A World Bank Symposium, Washington, DC, World Bank
- Solomon, R. (1977) A Perspective on the Debt of Developing Countries; *Brookings Paper on*
- Warner, Andrew M. 1992. “Did the Debt Crisis Cause the Investment Crisis”, *Quarterly Journal of Economics*, 107(4): 1161- 1186.
- Were, Maureen. 2001. “The Impact of External Debt on Economic Growth in Kenya: An Empirical Assessment”, *UNU-WIDER Research Paper*, DP2001/116.
- World Development Indicator (WDI): World Bank 2013