African Journal of Emerging Issues
Peer reviewed | Double blind | Interdisciplinary

African Journal of Emerging Issues (AJOEI)
Online ISSN: 2663 - 9335
Available at: https://ajoeijournals.org

ECONOMICS

DEBT MANAGEMENT AND ECONOMIC DEVELOPMENT OF LIBERIA: TIME SERIES APPROACH

Abdu-Nasir O. Katib

Email: barbaariyekatib@gmail.com

ABSTRACT

Background of the study: Liberia remains a fragile country vulnerable to external shocks, with a significant infrastructure deficit and poor living conditions for the majority of its population. While Liberia's economic situation is on a better footing since receiving debt relief in 2010, the country continues to struggle to translate higher government revenues (driven mainly by economic rents obtained from its extractive industries) and new concessional and grant financing to broad-based and inclusive economic growth, development and poverty alleviation. The Liberian government contracted new non-concessional loans further straining the country's weakened capacity to meet debt obligations.

Objective of the study: The paper sought to determine the effect of debt management on economic development of Liberia using a time series approach. The control variables were inflation, exchange rate and interest rate.

Methodology: The study adopted time series research design approach where the years covered were from 2000-2019. The 20-year period provided a substantive duration for time series data analysis. The research adopted the use of secondary data.

Results and findings: The results portrayed a negative and significant relationship between debt management and economic development in Liberia. There was a negative and significant relationship between inflation and economic development in Liberia. Exchange rate had a negative and significant relationship with economic development in Liberia. Lastly, interest rates had a negative and significant relationship with economic development in Liberia.

Conclusions and recommendations: The study concludes that Liberia's vulnerabilities call for a prudent fiscal policy, maintenance of the fiscal anchor on debt accumulation, and the implementation of effective measures to mobilize domestic resources. To maintain debt levels at moderate levels, it is important to continue to prioritize grants and concessional loans. A strong commitment to mobilizing domestic resources. It is also important to enhance debt management capacity by improving the information flow between different entities and strengthening the capacity of the debt management. Debt thresholds should be country and context-specific and that Liberia's borrowing space is significantly larger than that estimated by staff. In particular, they

remain more optimistic about medium-term growth and the return on investment from infrastructure projects.

Keywords: *Debt Management, Economic Development, Inflation Rate, Exchange Rate, Interest Rates & Liberia.*

1.1 INTRODUCTION

The Liberian economy has faced uncertainty in the past two years due to declining mining exports and rising inflation and currency depreciation. Real GDP growth, after declining to 0.4% in 2019, is expected to recover to 1.6% in 2020, underpinned by mining, forestry, and agriculture. Liberia has been recovering from the Ebola crisis between 2014 and 2016, which plunged the economy into a recession, with real GDP contracting by 1.6% in 2016 due to capital flight and a fall in private investment (World Bank, 2020). Real GDP growth recovered to 2.5% in 2017, largely driven by mining (gold and iron ore), forestry, and agriculture as economic activity resumed. But foreign exchange inflows shrank in 2018, triggering a depreciation of the Liberia dollar by about 26% and a sharp rise in inflation to 23.5% in 2018. Inflation remained high at 21.7% in 2019 (IMF, 2019).

Accumulation of external debt has accelerated since 2010 due to scaled-up infrastructure spending and the fiscal response to a series of adverse shocks. The total public external debt stock was $736 million (25 percent of GDP) at end-FY2017, comprising mostly multilateral loans (IMF, 2019). Liberia also has ratified but undisbursed loans amounting to $422 million (Government of Liberia, 2020). Two thirds of the total debt outstanding, $431 million, was disbursed during the last four years (FY2014–17). The distribution of external loans is concentrated in infrastructure (excluding energy) and basic services (37 percent), energy (29 percent), public administration (including both public finance management and budget support, 24 percent), agriculture (7 percent), and health (4 percent) (Government of Liberia, 2020).

It is uncertain to determine from a theoretical standpoint, the effect of debt on national income, both in the short and long run (Mahmud, 2018). One of the arguments proffered is that because output is sensitive to demand, national debt can have a positive and significant effect on disposal income, aggregate demand and gross domestic product. This is especially for short term intervention such as intervention on infrastructure and other basic social services like road

constructions, electrification and water provision installations (Monah & Okojie, 2018). Jobs creations and disposal income generation are visible in the short run when these activities are being undertaken. However, the situation is not so rosy in the longrun if public debt accrues to finance the deficit budget. This is because if the decrease in national savings is not fully offset by increase in private savings, it could eventually lead to decrease in total volume of investment, which in turn, will have a negative effect on gross domestic product, which will lower capital stock, increase in interest rate and finally reduce labor productivity (Greaves, 2020).

External public debt can have nonlinear impacts on economic growth (Fannoh, 2018). Thus, at low levels of indebtedness, an increase in the proportion of external public debt to GDP could promote economic growth; however, at high levels of indebtedness, an increase in this proportion could hurt economic growth. This paper attempts to understand the impact of national debt on the economy and despite the mixed findings that debt can have several consequences on various economies, this paper showed empirically the specific impact of debt on the growth of the Liberian economy between 2000 and 2019.

1.2 STATEMENT OF THE PROBLEM

Liberia remains a fragile country vulnerable to external shocks, with a significant infrastructure deficit and poor living conditions for the majority of its population. Two civil wars between 1989 and 2003 effectively destroyed Liberia's basic infrastructure and social services. When the war ended, average income in Liberia was just one-quarter of what it had been in 1989 and just one-sixth of its level before the 1980 coup. This cumulative decline in GDP was substantial, even compared to similar dramatic episodes in other countries. By 2008, Liberia's total external debt had reached $4.7 billion in nominal terms (over 600 percent of GDP) and was mostly in arrears (IMF, 2019). In 2010, the Heavily Indebted Poor Countries (HIPC) debt relief initiative's completion was reached, and debt-financed reconstruction of the country began. After eight years, however, there is still far to go.

While Liberia's economic situation is on a better footing since receiving debt relief in 2010, the country continues to struggle to translate higher government revenues (driven mainly by economic rents obtained from its extractive industries) and new concessional and grant financing to broad-based and inclusive economic growth, development and poverty alleviation (World Bank, 2020).

This struggle was further exacerbated by the recent adverse economic shocks of the Ebola crisis and the commodity price bust of mid-2014. These adverse economic shocks had exposed the governments over reliance on rents from extractive industries, with Liberia's domestic revenue declining rapidly resulting in higher fiscal deficits. The shrinking revenue envelope, growing fiscal deficits (financed out of Liberia's international reserves) and accumulating debt has put great pressures on Liberia's future repayment capacity, with the IMF and World Bank classifying the country as being in moderate risk of debt distress less than a decade after receiving debt relief. The sizeable accumulation of new debt is made even more concerning given inefficiencies in public investment, owing to Liberia's poor public investment management framework, possibly further weakening the government's debt repayment capacity and hindering the country's long-term growth and development prospects (World Bank, 2020). In addition, the Liberian government has in recent years contracted new non-concessional loans further straining the country's weakened capacity to meet debt obligations. This paper sought to determine the effect of debt management on economic development of Liberia using a time series approach.

1.3 RESEARCH OBJECTIVE

The study objective was to determine the effect of debt management on economic development of Liberia using a time series approach.

1.4 RESEARCH HYPOTHESIS

Ho: Debt has no significant effect on economic development in Liberia.

2.1 THEORETICAL REVIEW AND EMPIRICAL EVIDENCE

Economic growth and development is a major goal of most developing countries; hence resources are mobilized from various sources including external borrowing for investment into viable projects for growth acceleration. Sustainable economic growth is a predominant concern for all countries, especially developing economies that frequently face burgeoning fiscal deficits mainly driven by higher levels of debt service, particularly external debt servicing and widening current account deficits (Reinhart *et al*., 2015). According to Atique and Malik (2012), external debt constitutes a greater share of the public debt structure in developing countries. Reliance on external borrowing is not only rationalized on the grounds that excessive domestic borrowing can lead to financial instability and crowd out the private sector (Panizza *et al*., 2014) but also, as argued by

Todaro and Smith (2016), developing countries in their early stages of development need to borrow externally because of inadequate domestic capital for investment.

Krugman (2018), asserts that debt servicing obligations cause distortions in an economy and hence discourages investment and economic growth. Eaton (2013), on the other hand, argues that external debt is a complement to domestic savings and investment, and thus promotes growth. Several hypotheses have been put forward on the adverse effects of external debt on developing countries' growth. They are the Debt Overhang Hypothesis, the Crowding-Out Effect, the Liquidity Constraint Hypothesis, and the Debt Laffer Curve Theory. Empirical evidence on the debt- growth nexus is mixed.

While some studies (Reinhart and Rogoff, 2010; Hameed and Chaudhary, 2018) have established a negative relationship between external debt and economic growth, others have confirmed a positive relationship (Jayaraman *et al*., 2018; and Warner, 2012). Yet, others find no correlation between debt and growth (Frimpong & Oteng-Abaye, 2003). The balance, however, appears to tilt in the negative direction.

The external debt levels of SSA countries have been on the rise in the past two decades, generating concerns among analysts and policy-makers about a looming debt distress threatening the region. While Africa's current external debt ratios appear manageable, the rapid growth in several countries is of concern (UNCTAD, 2016) From a level of US$176.36 billion in 1990, the total external debt stock for SSA rose to US$235.94 billion in 1995, representing an increase from 58.2 per cent of the regional GDP to 72.0 per cent (World Bank, 2015). For the years under study (1990-2013), the highest external debt-to- GDP ratio of 78.2 per cent was recorded in 1994. Standing at US$213.44 in 2010, the total external debt stock rose by US$55.63 billion to reach US$269.08 billion at the end of 2010. External debt witnessed a rapid build-up in the 3 years following, to reach US$367.51 billion in 2013 (World Bank, 2015).

There is no unified theoretical and/or empirical explanation for the debt-growth nexus. The majority of theoretical propositions and empirical findings, however, reveal a negative relationship. The Harrod-Domar growth model provides the most basic direct relationship between savings and the rate of economic growth. According to the model, capital accumulation in the form of savings is essential for growth. External borrowing is, therefore, seen as capital helping to fill the financing gap in developing countries to promote growth (Eaton, 2013). In contrast, the

literature has identified five channels through which external debt could affect growth negatively. First is the debt overhang hypothesis (DOH); Krugman (2018) defined debt overhang as a situation in which the expected repayment on foreign debt falls short of the contractual value of the debt, whiles Borensztein (1990) asserts that debt overhang is "a situation in which the debtor country benefits very little from the return to any additional investment because of the debt service obligations.

The DOH has two versions, namely, the narrow (traditional) and broader versions. The narrow perspective posits that debt overhang effect exists when investors expect an increase in the tax rate on returns to capital to service the debt, and consequently reduce their investment levels to avoid higher future taxes (Krugman, 2018). Neoclassical models posit that imposition of taxes for interest payment on external debt reduces individuals' disposable income and hence curtails savings of the taxpayer. The broader version of debt overhang argues that there is disincentive to invest when investors expect inflation, devaluation and other economic distortionary measures as means to service the debt. Debt rescheduling negotiations discourage investment since it raises uncertainty within the business environment (Claessens *et al.*, 2016).

Second, there is a crowding-out effect of external debt. Debt service burden on government reduces public spending, including spending on social investments such as education and health which are crucial for economic growth. Moreover, heavy debt burden implies that government short term revenue must be used to service the debt, thereby crowding out public investment into the economy (Serieux & Yiagadeesen, 2011). Reduction in public investment can lead to a decrease in private investment since some private investments and public investments are complementary. Third, the growth effect of very high debt burden through the balance of payments account is referred to as liquidity constraint hypothesis (LCH) or import compression effect. Countries with high debt burden require enough inflow of foreign exchange so as to service the debt, especially when the nation's currency is not tradable in the international market. A situation where a country has low exports and capital inflows as well as inadequate reserves, debt servicing becomes problematic. The country may therefore resort to devaluation/depreciation and/or import restriction to attract foreign exchange inflow (Serieux & Yiagadeseen, 2011).

Fourth, the debt-growth channel can be traced to the Direct Effect of Debt Hypothesis (DEDH) as hypothesized by Fosu (2016). Thus, Debt overhang, the crowding out effect and liquidity

constraint hypotheses, suggest an indirect negative effect of external debt on economic growth through reductions in investment levels. However, Fosu (2016) argues that even if external debt is inconsequential in the savings and investment function, it can still influence output growth through its effects on factor productivity and investment mix. While a drag on investment could reduce growth, external debt may also stifle the productivity of the factors production and hence growth (Fosu 2016). Pattillo *et al*. (2014) argue that high debt burden creates uncertainty and thus biases investment towards shortterm instruments to the detriment of long-term investments. Investors would therefore be reluctant to invest in projects with longer gestation periods because of higher uncertainty that characterizes the long-term.

The Debt Laffer Curve theory postulates a nonlinear relationship between debt and growth on the assumption that there is an optimal level of debt that promotes growth. Beyond that threshold further debt accumulation impedes growth. Cohen (2013) observes that the Debt Laffer Curve can be used to show the relationship between the face value of debt and investment, since the curve explains that as the outstanding debt increases beyond a certain threshold, repayment capacity begins to fall. In other words, when a country borrows to finance its budget deficit, it makes resources available for capital investment which could help promote growth objectives. However, borrowing beyond a certain level creates debt overhang and debt service challenges, and may retard growth (Pattillo *et al*., 2012).

The empirical literature on the debt-growth relationship proffers mixed conclusions. The works of Warner (2012) and Jayaraman *et al*. (2008) found a positive impact of debt to growth. However, Deshpaned (2017) found that debt retards growth. Using an augmented aggregate production function, Fosu (1996) established a nonlinear relationship between debt and growth in SSA, thus confirming the Debt Laffer curve hypothesis. Fosu (1999) again also established a negative effect of external debt on growth in SSA, a finding also confirmed by Iyoha (1999). Were (2001), and Hameed and Chaudhary (2018) conducted time series analysis on Kenya and Pakistan, respectively, and found external debt to be negatively correlated with growth.

Reinhart and Rogoff (2010) employed panel regression analysis on a sample of 20 developed countries and found that for GDP to Debt ratios below 90 per cent, the relationship between debt and growth was insignificant whilst for ratios above 90 per cent external debt worsened the median growth by 1 per cent and considerably more for mean growth. This finding is consistent with

Kumar and Woo (2010) who also found that external debt is deleterious to economic growth in developed countries. Musebu (2012) found that external debt does not promote economic growth in HIPC Southern Africa Development Community (SADC) counties.

Chowdhury (2014), Afxentiou and Serletis (2016), Frimpong and Oteng-Abaye (2013), have found no clear relationship between external debt and growth. Clearly, empirical investigations have divergent findings regarding the relationship that exists between external debt and economic growth, even though the balance tilts in the negative direction. In the context of Sub-Saharan Africa, save studies by Fosu (2016) and Iyoha (2019), there is a dearth of research on the effect of external debt on economic growth.

2.2 CONCEPTUAL FRAMEWORK

A conceptual framework is hypothesized model identifying the model under study and the relationship between the dependent and independent variables. It is a study tool intended to assist a study to develop awareness and understanding of the variables under scrutiny as illustrated in the Figure 1.

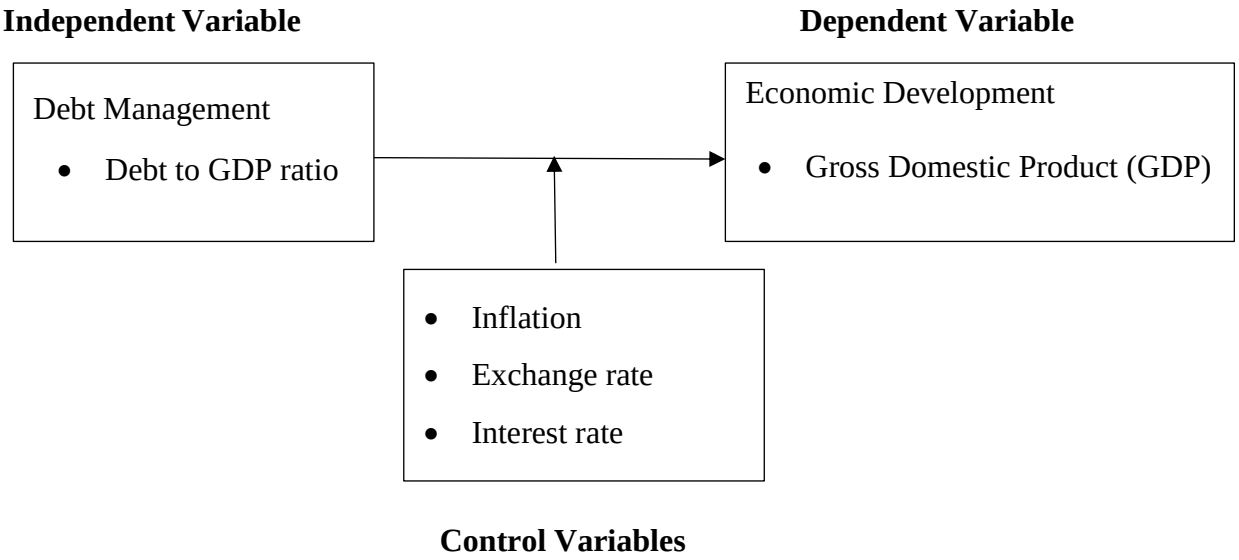

Figure 1: Conceptual Framework

3.1 RESEARCH METHODOLOGY

The study adopted time series research design approach. Time series regression is a statistical method used for predicting a future response based on the previous response history known as autoregressive dynamic. Time series regression helps predictors understand and predict the behavior of dynamic systems from observations of data or experimental data. The years covered was from 2000-2019. The 20-year period provided a substantive duration for time series data analysis. The research adopted the use of secondary data. The secondary data was obtained from International monetary fund, World Bank, African Development Bank or Central Bank of Liberia. The research utilized a time series regression model using STATA software. The time series regression analytical model is as shown;

$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_2 + \beta_3 X_{3t} + \beta_4 X_{4t} + \varepsilon$

Y is the dependent variable (Economic Development)

X_{1t} = Debt Management

X_{2t} = Inflation

X_{3t} = Exchange rate

X_{4t} = interest rate

ε is error term

β_0 represents the constant

β_{1t}…. β_{4t} are regression coefficients for each independent variable.

t = time period 2000- 2019

4.1 RESULTS AND DISCUSSION

4.1.1 Autocorrelation Test

Presence of autocorrelation in the data causes and to correlate with each other and violate the assumption, showing bias in OLS estimator necessitating the test for autocorrelation. Breusch-Godfrey LM test for autocorrelation test for serial correlation through a number of lags besides one lag that is a correlation between the residuals between time t and t-k (where k is the number of lags).

The hypothesis was:

Null hypothesis: There is no serial correlation.

Alternative Hypothesis: There is a serial correlation.

Table 1: Breusch-Godfrey LM test for autocorrelation

lags(p)	chi2	df	Prob > chi2
1	0.716	1	0.3976
H_0: no serial correlation			

Since from Table 1, chi2=0.716, P-value =0.3976 is above 0.05 or 5%, the null hypothesis is not rejected. Therefore, there was no serial correlation between the residuals in the model.

4.1.2 Correlations Analysis

Correlation analysis was carried out to detect the association between the independent, control and the dependent variables. The mean score for each of the independent variables was calculated and the Pearson's correlation obtained using STATA. Table 2 presents the results of the correlation analysis.

Table 2: Correlation Analysis

Variables	GDP	Debt to GDP	Inflation	Exchange Rate	Interest Rate
GDP	1.000				
Debt to GDP	-0.128	1.000			
	0.003				
Inflation	-0.360	0.644	1.000		
	0.015	0.005			
Exchange Rate	-0.137	0.957	0.552	1.000	
	0.005	0.000	0.022		
Interest Rate	-0.350	-0.357	0.297	-0.744	1.000
	0.015	0.145	0.265	0.000	

The results revealed that debt and economic growth is negatively and significantly related in Liberia (r=-0.128, p=0.003). Inflation indicated a negative and significant relationship with economic growth of Liberia(r= -0.360, p=0.015). Exchange Rate had a negative and significant relationship with economic growth of Liberia(r= -0.137, p=0.005). Interest Rate had a negative and significant relationship with economic growth of Liberia(r= -0.350, p=0.015).

4.1.3 Regression Analysis

The study sought to carry out regression analysis to establish the statistical significance relationship between debt management, inflation, exchange rate and interest rate. The regression includes techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent and one or more independent variables. The results are presented in Table 3.

Table 3: Regression Analysis

GDP	Coef.	Std. Err.	t	P>|t|
Debt to GDP Ratio	-2.956896	0.670159	-4.41	0.001
Inflation	-0.89545	0.39106	-2.29	0.043
Exchange Rate	-1.09034	0.180018	-6.06	0.000
Interest Rate	-5.7864	0.800723	-7.23	0.000
cons	110.2157	15.43026	7.14	0.000
R-squared	0.8612			
Adj R-squared	0.8108			
F Statistics	17.07			
Prob > F	0.0001			

The overall Rsquared of 0.8612 implied that debt management, inflation, exchange rate and interest rate explained 86.12% on the variations on economic development in Liberia. The overall model was significant as indicated by the F statistic- 17.07 and Prob>F of 0.001. In addition, the constant of 110.2157 showed that when debt management, inflation, exchange rate and interest rate are held constant, performance will remain at 110.2157 units.

The results further portrayed a negative and significant relationship between debt management and economic development in Liberia (β= -2.956896, p=0.001). There was a negative and significant relationship between inflation and economic development in Liberia (β= -0.89545, p=0.043). Exchange rate had a negative and significant relationship with economic development in Liberia (β= -1.09034, p=0.000). Lastly, interest rates had a negative and significant relationship with economic development in Liberia (β= -5.7864, p= 0.020).

The findings agree with Krugman (2018) who asserts that debt servicing obligations cause distortions in an economy and hence discourages investment and economic growth. However, Eaton (2013) argues that external debt is a complement to domestic savings and investment, and thus promotes growth. Several hypotheses have been put forward on the adverse effects of external debt on developing countries' growth. High public debt can negatively affect capital stock accumulation and economic growth via heightened long-term interest rates, higher distortionary tax rates, inflation, and a general constraint on countercyclical fiscal policies, which may lead to increased volatility and lower growth rates

The Debt Laffer Curve theory postulates a nonlinear relationship between debt and growth on the assumption that there is an optimal level of debt that promotes growth. Beyond that threshold further debt accumulation impedes growth. Cohen (2013) observes that the Debt Laffer Curve can be used to show the relationship between the face value of debt and investment, since the curve explains that as the outstanding debt increases beyond a certain threshold, repayment capacity begins to fall. In other words, when a country borrows to finance its budget deficit, it makes resources available for capital investment which could help promote growth objectives. However, borrowing beyond a certain level creates debt overhang and debt service challenges, and may retard growth (Pattillo *et al*., 2012).

The public sector DSA also highlights the importance of fiscal adjustments and sustained growth. Given the limited available domestic sources of funding, the general picture of domestic debt sustainability is similar to the analysis for the public external debt sustainability.

5.1 CONCLUSION AND RECOMMENDATIONS

Liberia's vulnerabilities call for a prudent fiscal policy, maintenance of the fiscal anchor on debt accumulation, and the implementation of effective measures to mobilize domestic resources. To maintain debt levels at moderate levels, it is important to continue to prioritize grants and concessional loans. A strong commitment to mobilizing domestic resources for example through the adoption of a Medium-Term Revenue Strategy (MTRS) is critical for maintaining macroeconomic stability, while satisfying the high spending needs currently faced by the government. It is also important to enhance debt management capacity by improving the information flow between different entities and strengthening the capacity of the Debt Management Unit (DMU) within the Ministry of Finance.

REFERENCES

Afxentiou, P. C., & Serletis, A. (2016). Growth and foreign indebtedness in developing countries: an empirical study using long-term cross-country data. *The Journal of developing areas*, *31*(1), 25-40.

Atique, R., & Malik, K. (2012). Impact of domestic and external debt on the economic growth of Pakistan. *World Applied Sciences Journal*, *20*(1), 120-129.

Borensztein, E. (1990). Debt overhang, credit rationing and investment. *Journal of Development Economics*, *32*(2), 315-335.

Chowdhury, K. (2014). A structural analysis of external debt and economic growth: some evidence from selected countries in Asia and the Pacific. *Applied Economics*, *26*(12), 1121-1131.

Claessens, S. (2016). *Analytical aspects of the debt problems of heavily indebted poor countries* (No. 1618). World Bank Publications.

Eaton, J. (2013). Sovereign debt: A primer. *The World Bank Economic Review*, *7*(2), 137-172.

Fannoh, R. (2018). *Modeling Inflation Rates in Liberia; SARIMA Approach* (Doctoral dissertation, JKUAT-PAUSTI).

Fosu, A. K. (2006). The impact of external debt on economic growth in Sub-Saharan Africa. *Journal of economic development*, *21*(1), 93-118.

Gbatu, A. P., Wang, Z., Wesseh Jr, P. K., & Tutdel, I. Y. R. (2017). Causal effects and dynamic relationship between exchange rate volatility and economic development in Liberia. *International Journal of Economics and Financial Issues*, *7*(4).

Greaves, J. G. (2020). Is Liberia Ready for Monetary Union? Exploring the Convergence Criteria for Eco Adoption. *Exploring the Convergence Criteria for Eco Adoption (October 18, 2020)*.

Hameed, A., Ashraf, H., & Chaudhary, M. A. (2018). External debt and its impact on economic and business growth in Pakistan. *International research journal of finance and economics*, *20*(1), 132-140.

IMF (2019). Liberia: 2019 Article IV Consultation – Press Release; Staff Report; and Statement by the Executive Director for Liberia. IMF Country Report No. 19/169.

Jayaraman, S. (2018). Earnings volatility, cash flow volatility, and informed trading. *Journal of Accounting Research*, *46*(4), 809-851.

Krugman, P. (2018). Financing vs. forgiving a debt overhang. *Journal of development Economics*, *29*(3), 253-268.

Mahmud, U. E. (2018). External Debt Burden: Contextual Analysis of Nigeria and Liberia. *Operational Research*, *4*(1).

Mbaye, S., Badia, M. M. M., & Chae, K. (2018). *Global debt database: Methodology and sources*. International Monetary Fund.

Monah, A., & Okojie, O. (2018). The Effects of International Financial Reporting Standards Adoption on Earnings Management: Evidence from Commercial Banks in Liberia.

Moumouni, G. (2018). China and Liberia: engagement in a post-conflict country (2003–2013). In *China and Africa* (pp. 225-251). Palgrave Macmillan, Cham.

N'Zue, F. F. (2020). Is External Debt Hampering Growth in the ECOWAS Region. *International Journal of Economics and Finance*, *12*(4), 54-66.

Panizza, U., & Presbitero, A. F. (2014). Public debt and economic growth: is there a causal effect?. *Journal of Macroeconomics*, *41*, 21-41.

Pattillo, C. A., Poirson, H., & Ricci, L. A. (2014). What are the channels through which external debt affects growth?.

Reinhart, C. M., & Rogoff, K. S. (2010). Growth in a Time of Debt. *American economic review*, *100*(2), 573-78.

Reinhart, C. M., Reinhart, V., & Rogoff, K. (2015). Dealing with debt. *Journal of International Economics*, *96*, S43-S55.

Serieux, J., & Yiagadeesen, S. (2011). The debt service burden and growth: Evidence from low income countries. The North-South Institute, Ottawa.

Shaw, L. (2019). Turning the Lights On in Liberia Through Off-Grid Innovation. *Africa Policy Journal*, *14*, 9-X.

Siddique, A., Selvanathan, E. A., & Selvanathan, S. (2015). *The Impact of External Debt on Economic Growth: Empirical Evidence from Highly Indebted Poor Countries*. University of Western Australia, Economics.

Suter, C. (2019). *Debt Cycles In the World-economy: Foreign Loans, Financial Crises, And Debt Settlement, 1820-1990*. Routledge.

Tenny, L. Z. (2020). The Impact of National Debt on Economic Growth in Liberia: A Vector Error Correction Model. *International Journal of Business and Economics Research*, *9*(6), 392.

Todaro, M. P. (2016). Stephen C. Smith. *Economic Development*, *10*.

Warner, A. M. (2012). Did the debt crisis cause the investment crisis?. *The quarterly journal of economics*, *107*(4), 1161-1186.

World Bank (2020). Country Partnership Framework for the Liberia for the Period FY19-22. World Bank Report No. 124734-SO.