



Determinants of external debt in Liberia: An Empirical Investigation

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Abstract

The factors influencing Liberia's external debt from 1991 to 2022 were examined in this paper. During the estimate procedure, the correlation matrix, cointegration test, unit root test, and error correction model were employed. The results show that, both in the short and long run, economic growth and foreign direct investment reduce external debt, but exchange rates, trade balances, and government spending raise it. The consistency and reliability of our findings are confirmed by diagnostic test results, which policymakers should take into account when creating and enforcing policies. From the findings, pertinent policy recommendations are put out for consideration to reduce Liberia's external debt.

Keywords: External debt, exchange rate, government expenditure, error correction model, Liberia

1. Introduction

Liberia has a huge external debt burden that poses substantial challenges to its economic development. The country's external debt stock was estimated at US\$3.6 billion or 52.5% of GDP in 2021 (IMF, 2022). The Liberia's external debt is owed majorly to multilateral creditors, such as the World Bank and the International Monetary Fund (IMF). Liberia's external debt has increased tremendously in recent years, as revealed in the steady increase in the country's external debt stock. The external debt in 2018 stood at \$1,157,572,897, which increased by 3.53% to \$1,266,753,402 in 2019. The rising in trend continued, with the external debt further rising by 15.05% to \$1,457,426,336 in 2020. In 2021, external debt reaching \$1,846,315,347, marking a 26.68% increase from the previous year (Macro Trends, 2018) ^[24].

Liberia still has a large infrastructure deficit, the bulk of its population lives in substandard conditions, and it is a weak nation that is susceptible to external shocks. Between 1989 and 2003, there were two civil conflicts that essentially destroyed Liberia's social services and fundamental infrastructure. Liberia's average income by the end of the conflict was only 25% of what it had been in 1989 and only 1/6th of what it had been prior to the coup in 1980 (IDA and IMF, 2020). Even when compared to other nations that have

experienced similarly severe occurrences, this cumulative GDP decrease was significant. In nominal terms, Liberia's total external debt reached \$4.7 billion (more than 600 percent of GDP) by 2008, with the majority of the loan being in arrears. After the completion of the Heavily Indebted Poor Countries (HIPC) debt reduction effort in 2010, the nation started to rebuild itself using debt financing. But eight years later, much remains to be done. Despite the rehabilitation of the Mount Coffee hydroelectric facility, 81% of homes are still without energy. Furthermore, during the six-month rainy season, a large portion of the population is left isolated as only 5% of the nation's roadways are paved.

Since 2010, there has been an increase in the amount of external debt accumulated as a result of increased infrastructure spending and the budgetary response to several unfavorable shocks. At the conclusion of FY2017, the overall stock of public external debt was \$736 million, or 25% of GDP, primarily made up of multilateral loans (the GOL also ratified but has not yet released \$422 million in loans). \$431 million, or two thirds of the existing debt, has been paid off during the last four years (FY2014–17). According to Estevão and Allard (2020) ^[28], the distribution of external loans is concentrated in the following areas: infrastructure (excluding energy) and basic services (37

percent), energy (29 percent), public administration (including budget support and public finance management, 24 percent), agriculture (7 percent), and health (4 percent).

Consequently, the primary goal of the research is to examine the macroeconomic factors that influence Liberia's external debt. It is anticipated that the study's conclusions will contribute to our understanding of the primary alternatives to foreign debt and the burden that results from funding it.

2. Literature review

2.1 Liberia economic outlook

Liberia is a country in West Africa that occupies an area of about 11,369 sq. km (43,000 sq. m), with a population of more than 5,508,451. There exist over twenty native languages, with English being the official language. This is a representation of the nation's diverse ethnic groupings, which comprise over 95% of the population. The Liberian Dollar is the currency, and Monrovia is the largest and capital city. Before the civil war, iron ore mining was a major contributor to the Liberian economy. Iron ore is the main product that Liberia exports to the global market. In the 1970s and 1980s, iron mining produced over half of Liberia's export revenue. Following the coup d'état in 1980, political unrest in Liberia and a drop in the global market demand for iron ore have been the main causes of the country's economy's poor growth. The 1980 coup d'état and subsequent economic mismanagement caused the Liberian economy to consistently contract after reaching a peak expansion in 1979. The start of the civil war in 1987 made the slide worse. One of the fastest decreases in history occurred in the Gross Domestic Product (GDP), which fell by an estimated 90% between 1989 and 1995.

The Revolutionary United Front (RUF) rebels in neighboring Sierra Leone were receiving support from Liberia, which led to UN sanctions against the country in May 2001. After the election in 2005, these restrictions were removed, and GDP growth picked up speed after the war ended in 2003, peaking at 9.4% in 2007. According to the global financial crisis, the GDP grew by 4.6% in 2009. Despite the fact that the agriculture sector, driven by the export of timber and rubber, increased growth rates to 5.1% in 2010 and 7.3% in 2011, the country's economy grew at one of the quickest rates in the world. An estimate of Liberia's external debt in 2006 was \$4.5 billion, or 800% of GDP. The nation's external debt dropped from \$2252.9 million in 2007 to 2010 because of debt relief. GDP growth decreased from 5.0% in 2021 to a projected 4.0% in 2022, mostly due to rises in infrastructure spending on the demand side and expansion in the mining and construction industries on the supply side. Due to factors including tighter budgetary headroom and rising commodity prices brought on by Russia's invasion of Ukraine, growth was weaker. Because domestic food costs have been steadily declining, inflation has decreased from 7.9% in 2021 to 7.4% in 2022. Raising wages and spending on infrastructure are expected to cause the fiscal deficit to rise from 2.4% of GDP in 2021 to 4.8% of GDP in 2022. The national debt as of October 2022 increased from 53.2% of GDP in 2021 to 54.6% of GDP as a result of increased borrowing. The current account

deficit decreased to 17.4% of GDP in 2022 from 17.7% in 2021 as export receipts increased, driven mostly by shipments of gold. This was mostly because of a lessened trade imbalance. The value of international reserves fell from \$700 million (four months' worth of import cover) in December 2021 to \$691 million (four months' worth) in December 2022. The Liberian dollar's value rose 4.6% against the US dollar to 159.34 due to higher exports and net remittances. With a capital adequacy ratio of 34.03% in September 2022, the banking industry remained strong overall, despite the non-performing loan ratio remaining high at 23.43% compared to the 10% objective. A substantial segment of the populace, including 35.4%, continues to reside below the \$2.15 per day international poverty threshold. The unemployment rate was predicted to reach 4.1% in 2021

2.2 Outlook and risks

GDP growth is anticipated to be 4.3% in 2023 and 4.8% in 2024, primarily due to growth in the mining, services, and agricultural sectors. Due to election-related speculation, inflation is predicted to slightly increase to 8.2% in 2023 but to subside to 6.5% in 2024 as a result of a stable exchange rate and peace following the election. Due to fiscal consolidation, it is anticipated that the budget deficit would reach 4.1% of GDP in 2023 and stabilize at 4.0% in 2024. Because of increased exports, the current account deficit is predicted to be 16.2% of GDP in 2024 and 16.7% of GDP in 2023. It is anticipated that public debt will increase to 55.3% of GDP in 2023 and 56.9% in 2024. It is anticipated that both the financial market and exchange rate would stay steady. The extension of Russia's invasion of Ukraine and a decline in the terms of trade for rubber and gold are obstacles. One potential mitigation strategy is to provide more assistance to the weaker individuals.

Table 1: Evolution of Public Debt in Liberia

Date	Debt (\$M)	Debt (%GDP)	Debt Per Capita
2021	1,869	53.27%	\$360
2020	1,781	58.66%	\$352
2019	1,495	48.53%	\$303
2018	1,211	37.10%	\$251
2017	1,056	31.80%	\$225
2016	930	28.57%	\$203
2015	766	24.77%	\$171
2014	752	24.33%	\$172
2013	627	20.61%	\$148
2012	548	20.50%	\$133
2011	531	22.52%	\$132
2010	503	25.40%	\$129
2009	2,311	132.16%	\$616
2008	3,906	235.28%	\$1,083
2007	5,292	366.81%	\$1,529
2006	5,230	450.96%	\$1,571
2005	5,051	488.46%	\$1,570
2004	4,873	543.40%	\$1,554
2003	4,697	600.12%	\$1,526
2002	4,536	463.62%	\$1,500
2001	4,376	465.17%	\$1,481
2000	4,218	468.08%	\$1,481

Source: IMF (2021) <https://countryeconomy.com/national-debt/liberia>

2.3 Empirical review

Vigneswara (2015) ^[35, 36] examined the macroeconomic variables that impacted the level of government debt in 252 sovereign states from 1980 to 2009. The results showed that the GDP had increased. Data from 1970 to 2007 also demonstrated how increasing debt was caused by population growth, government expenditures, trade openness, gross fixed capital creation, inflation, and final consumption expenditure.

By means of the error correction model and dataset covering the years 1976–2010, Bittencourt (2015) ^[16] used pooled ordinary least squares, fixed effect, and fixed effect–instrumental variable estimation techniques to demonstrate that economic expansion considerably reduces debt in South America.

According to Awan, Anjum, and Rahim (2015) ^[19], Pakistan's foreign debt, trade openness, exchange rate, and budget deficit are all positively correlated. A similar study further reveals the negative association between terms of trade and external debt.

Al-Fawwaz (2016) ^[6, 7] applied the ADL model on a dataset that covered the years 1990–2014. The results demonstrated that although GDP per capita reduces foreign debt, Jordan's external debt is substantially positively impacted by trade openness, terms of trade, and currency rate.

Waheed (2017) ^[37] examines the factors that affected the amount of external debt in 12 countries that exported and imported oil and gas between 2004 and 2013. The findings showed that while trade imbalance, oil prices, interest payments on external debt, domestic investment and foreign direct investment raise external debt, economic growth and gross domestic savings decrease it. Utilizing the VEC model on a dataset covering the years 1970–2013, Udoh and Rafik (2017) ^[34] demonstrated that, in the case of Malaysia, capital spending raises external debt while economic development lowers it. A similar conclusion was also found for Malaysia. Adamu (2019) ^[4] looked into the factors that led to Nigeria's external debt from 1970 to 2017. The Johansen cointegration and general to specific (GETS) approach results indicated that, domestic savings, oil price, exchange rate, debt relief, and fiscal deficits increase external debt. Abdullahi, Bakar, and Hassan (2015) ^[2] establish that interest rate, exchange rate, and budget deficits have a significant negative effect on external debt in their study of Nigeria from 1980 to 2013, using the autoregressive distributed lag model as the estimation methodology. Brafu-Insaidoo *et al.* (2019) ^[17] looked at the factors that led to foreign debt from 1970 to 2012 for the case of Ghana. The ARDL model's results showed that while trade openness lowers short-term foreign debt, economic expansion makes it worse.

Abbas and Wizarat (2018) ^[1] conducted a parallel study on South Asia using a dataset covering the years 1990–2015. The fixed effect model was implemented, and the findings revealed that while domestic investment and trade lower foreign debt, military spending increases it.

In his investigation of the factors influencing Nigeria's external debt from 1970 to 2017, Adamu (2019) ^[4] found that the price of oil, domestic savings, currency rates, debt relief, and fiscal deficits all contributed to the country's external debt. These findings were obtained using the general to specific gets technique and Johansen Cointegration. Abdullahi, Bakar, and Hassan (2015) ^[2] conducted a related study on Nigeria from 1980 to 2013,

and the results showed that interest rates, exchange rates, and budget deficits significantly correlated negatively with external debt. The autoregressive distributed lag model was used as the estimation technique in this study. In their 2019 study, Brafu-Insaidoo *et al.* 2019 ^[17] looked at the factors that affected Ghana's foreign debt from 1970 to 2012. The findings of the autoregressive distributed lag model showed that while trade openness lowers short-term foreign debt, economic growth makes it worse

In a parallel study, Azolibe (2020) ^[10] looked at 39 severely indebted poor countries (HIPC) from 1996 to 2018 to determine the factors that contributed to their foreign debt. The panel's fully modified ordinary least squares results showed that while economic growth lowers external debt, population expansion, government spending, and corruption all contribute to its rise. Applying the autoregressive distributed lag model to a dataset spanning the years 1981–2016, Beyene and Kotosz (2020a) ^[14] used the two- and three-gap models as a theoretical framework for calculating debt. The findings demonstrated that Ethiopia's external debt is exacerbated by the saving-investment gap, fiscal deficit, trade deficit, and debt payment. Conversely, it was found that inflation, trade openness, and GDP growth rate all reduced external debt. Additionally, Beyene and Kotosz (2020b) ^[15] found that whereas exports and foreign direct investment decrease external debt, growth rate, imports, and debt servicing increase it for heavily indebted poor countries. Additionally, debt servicing and trade openness cut Nigeria's foreign debt, according to Fatukasi *et al.* (2020) ^[23], who used fully modified ordinary least squares and data spanning from 1981 to 2018.

Gokmenoglu and Rafik (2018) ^[24] discovered that by raising GDP, the Malaysian government is able to lower its external debt, meaning that GDP is used by the government as a means of repaying foreign debt. The macroeconomic drivers of foreign debt in Pakistan were presented by Awan, Anjum, and Rahim (2015) ^[19]. The study concluded that trade openness, exchange rate, and fiscal deficit are statistically significant determinants of foreign debt as Pakistan's debt load increases. According to Yazdanfar (2017) ^[39], long-term debt liquidity is positively correlated with increases in the tangibility of assets and negatively correlated with tax shields. Short-term debt is positively correlated with growth and size and negatively correlated with age viability. According to Bellot Selva Mendez's (2017) ^[13] research, regions with greater external debt-to-gdp ratios seem to have smaller deficits in the future. greater or lower gdp per capita can also lead to higher levels of foreign debt.

2.4 Theoretical framework

Beyene and Kotosz (2020a) ^[14] outlined three distinct financing options that governments of various nations use to fund their expenditures and other development-related initiatives. These consist include borrowing, printing money, and taxing. In a similar vein, Waheed (2017) ^[37] listed four methods by which countries finance their budget deficits: money printing, depleting resources, borrowing domestically, and borrowing abroad. In the pursuit of economic expansion and social wellbeing, nations frequently take on debt. The literature uses a number of frameworks and econometric models to analyze the factors that determine external debt. These include growth models that incorporate the saving-investment gap, foreign exchange gap, and fiscal constraint gap in the event that

governments are forced to incur expenditure gaps and deficits (Assandé, D. A.1. and Nasr, G. E. 2014) [8].

3. Materials and Methods

The research design for this work is the ex-post facto and secondary data and to analyze the determinants of external debt in Liberia. The time series data established by World Bank and IMF from 1991-2022 were employed to analyze the relationship between variables.

3.1 Model specification

The model of this study was specified functionally as:
 $EXDT = f(EXR, GDP, FDI, TB, INFL, GEXP) + 1$

The econometric transformation of Equ. 1 is thus expressed:
 $EXDT_t = \beta_0 + \beta_1 GDP_t + \beta_2 EXR_t + \beta_3 FDI_t + \beta_4 TB_t + \beta_5 INFL_t + \beta_6 GEXP_t + U_t$
 Based on the equation (2) the parameters must satisfy the

following sign restriction: $\beta_1 < 0$, $\beta_2 > 0$, $\beta_3 < 0$, $\beta_4 > 0$, $\beta_5 < 0$, $\beta_6 > 0$.

Where,

- EXDT = External Debt
- GDP = Gross Domestic Product
- EXR = Exchange Rate
- FDI = Foreign Direct Investment
- TB = Trade Balance
- INF = Inflation Rate
- GEXP = Government Expenditure
- β_0 = The constant term
- $\beta_1 - \beta_6$ = The coefficients of the independent variables
- U_t = the random disturbance term

3.2 Data and variable description

Variables definition, notations, and the source of data reported in Table 2.

Table 2: Variable Descriptions and Data Sources

Variable	Definition/Proxy	Notation	Source of data
External debt	External debt stocks, total (DOD, current US\$)	EXD	IFS, IMF (2022)
Gross domestic product	Economic growth	GDP	World Bank, WDI (2022)
Exchange rate	National currency per US\$	EXR	IFS, IMF (2022)
Foreign direct investment	Financial flows.	FDI	World Bank, WDI (2022)
Trade Balance	the difference between the country's export value and its import over a certain period	TB	World Bank, WDI (2022)
Inflation	Consumer price index (annual)	INFL	IFS, IMF (2022)
Government Expenditure	General government final consumption expenditure as a share of gross domestic product	GEXP	World Bank, WDI (2022)

Source: Authors' compilation

4. Results and Discussion

This chapter presents the results of variables descriptive statistics and the correlation matrix. The short- and long-run estimations are suitably analyzed using error correction model.

4.1 Descriptive statistics and correlation matrix

Table 3: Summary of Descriptive Statistics.

Variable	Obs.	Mean	Std. Dev.	Min	Max
EXDT	32	5.270	1.245	4.168	6.420
GDP	32	2.631	0.382	0.422	12.548
EXR	32	4.249	2.728	-0.746	11.649
FDI	32	3.176	0.760	2.516	5.247
TB	32	-0.038	0.551	-1.372	2.152
INFL	32	13.63	26.443	-2.6242	26.128
GEXP	32	2.571	0.825	2.463	4.725

Source: Authors' estimation

Based on the standard deviation values, Table 3 's results demonstrate that the variable values do not significantly differ from their mean.

Table 4: Results for Correlation Matrix.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
EXDT	1.000						
GDP	-0.138	1.000					
EXR	-0.025	-0.022	1.000				
GEX	0.076	0.555	-0.240	1.000			
FDI	-0.023	0.287	0.177	0.162	1.000		
TB	0.281	0.115	-0.231	0.227	-0.066	1.000	
INFL	0.050	-0.372	-0.122	0.006	0.024	0.108	1.000

Source: Authors' estimation

4.2 Presentation of the unit root test

Table 5: Summary of the Unit Root Test

Variables	Difference	ADF statistic	Critical Value (5%)	Order of Integration	Remark
EXDT	EXDT	-2.034750	-3.552973	I(0)	Non-Stationary
	D(EXDT)	-5.732953	-3.552973	I(1)	Stationary
GDP	GDP	-7.562475	-3.552973	I(0)	Stationary
EXR	EXR	-2.222983	-3.552973	I(0)	Non-Stationary
	D(EXR)	-6.383774	-3.552973	I(1)	Stationary
FDI	FDI	-1.935961	-3.552973	I(0)	Non-Stationary
	D(FDI)	-4.607244	-3.552973	I(1)	Stationary
TB	TB	-5.854682	-3.552973	I(0)	Stationary
INFL	INFL	-2.742855	-3.552973	I(0)	Non-Stationary
	D(INFL)	-7.242689	-3.552973	I(1)	Stationary
GEXP	GEXP	-4.062751	-3.552973	I(0)	Stationary

Source: Author's Computation from Eviews

The results show that gross domestic product, trade balance and government expenditure are stationary at level, while external debt, exchange rate, foreign direct investment and inflation are stationary at first differencing. Following Harris (1995) [26] and Gujarrati (2003) [25] cointegration, both 1 (0) and 1 (1) variables could be carried forward to test for

cointegration.

4.3 Cointegration test

The Johansen Fisher Cointegration test was employed to examine the long-run relationship for the variables.

Table 6: Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Likelihood Ratio	5% Critical Value	1% Critical Value
None **	0.895670	240.8627	156.00	168.36
At most 1 **	0.820721	166.2761	124.24	133.57
At most 2 **	0.698036	109.5553	94.15	103.18
At most 3 *	0.637204	70.03953	68.52	76.07
At most 4	0.452123	36.58035	47.21	54.46
At most 5	0.254766	16.72412	29.68	35.65
At most 6	0.181763	7.020252	15.41	20.04
At most 7	0.012058	0.400346	3.76	6.65

*(**) indicates four cointegrating equations at the 5% significant level.

4.4 Estimated short- and long-run Results

The ECM result displayed no significant variances between the short-run and long-run findings. Nonetheless, the long-run coefficients are higher than the short-run coefficients.

This demonstrates that the long-term independent variables have a far bigger impact on the external debt than the short-term ones.

Table 7: Outcomes from the Regression Analysis

Variable	Short-run results			Long-run results		
	Coefficient	Std. Err.	P-value	Coefficient	Std. Err.	P-value
EXDT	0.789	0.044	0.000	–	–	–
GDP	-0.263	0.044	0.002	-0.523	0.164	0.000
EXR	0.029	0.020	0.002	0.315	0.115	0.006
FDI	-0.136	0.212	0.526	-0.645	1.012	0.524
TB	0.258	0.072	0.002	2.744	0.339	0.000
INFL	-0.025	0.006	0.000	-0.126	0.054	0.000
GEXP	0.232	0.137	0.003	2.576	0.586	0.000
Constant	1.247	0.739	0.102	5.904	3.399	0.082

Observation 32
 R-squared 0.955372 Mean dependent var 12.76621 Adjusted R-squared 0.948367 S.D. dependent var 0.65328 S.E. of regression 0.128592 Akaike info criterion -0.92558 Sum squared resid 0.550762 Schwarz criterion -0.54508 Log likelihood 23.57035 F-statistic 120.5611 Durbin-Watson stat 1.661526 Prob(F-statistic) 0.000000

Source: Authors' estimation

Upon closer examination of the data, it can be seen that the following variables are all correctly signed and individually significant at the 5% level: inflation rate, foreign direct investment, economic growth, exchange rate, and government spending on external debt. The trade balance, however, was large but not in the correct sign. Thus, each of the model's variables has a significant role in determining Liberia's economic growth. The explanatory variables of the model account for approximately 96% of the fluctuations in external debt, as indicated by the R2 value of 0.955. With a p-value of 0.000 and an F-statistic value of 120.56, it can be concluded that all seven explanatory factors jointly determine Liberia's foreign debt. There is no discernible autocorrelation in the error term, as indicated by the DW value of 1.66.

The outcome regarding foreign debt (the dependent variable) demonstrates a noteworthy positive coefficient, signifying the continuous existence of external debt in Liberia. With regard to the primary independent variables, the findings clearly demonstrate a substantial negative association, significant at the one percent level, between economic growth and external debt. It suggests that higher

economic growth lowers external debt; the coefficients indicate that for every 1% rise in economic growth, there is a corresponding short- and long-term decrease in external debt of 0.263 and 0.523 percent, respectively. The inference is that, all other things being equal, economies that thrive see gains in income, which lessens their reliance on foreign debt. As a result, as borrowing declines, so does external debt. The results of earlier research (Beyene and Kotosz 2020a; Waheed 2017; Al-fawwaz 2016; Bittencourt 2015; Vighneswara 2015) [14, 37, 6, 7, 16, 35, 36] are in line with this finding.

Additionally, a strong positive correlation between the exchange rate and external debt is demonstrated by the results. In particular, the coefficients show that a one percent increase in exchange rate causes a rise in foreign debt in the short- and long-term by 0.029 and 0.315 percent, respectively. It follows that more money will be required to pay off the accumulated debt when a nation's exchange rate rises and the value of the local currency declines. Previous research, as demonstrated by Adamu (2019) [4] and Udoh and Rafik (2017) [34], has demonstrated a comparable association. The findings indicate a substantial inverse link

between trade balance and external debt; the coefficients indicate that for every 1% decline in trade balance, external debt will increase by 2.744 percent in the long run and 0.258 percent in the short run, respectively. This is what happens when an economy imports more than it exports, creating a deficit. All other things being equal, this forces the economy to borrow money to cover the spending gap, which inevitably increases the level of external debt.

Ultimately, the results demonstrate that even in situations where the coefficient is negative, foreign direct investment has no discernible impact on external debt. It suggests that when income rises due to foreign inflows, people become less dependent on borrowing, which lowers external debt. Therefore, inflation, government spending, trade balance, economic growth, and exchange rates are the primary factors influencing Liberia's foreign debt

5. Conclusion and Recommendations

This paper investigates the determinants of external debt in Liberia from 1991 to 2022. The study employed descriptive statistics and correlation matrix, unit root test, cointegration test and error correction model (ECM). Both long- and short-term data point to a significant positive association between the trade balance, government spending, foreign debt, and currency rate. Furthermore, the data indicated a noteworthy and adverse association among inflation, economic growth, and external debt, implying that inflation and growth mitigate external debt. Foreign direct investment has a slight, but unfavorable, effect on external debt. Based on the data, the analysis came to the conclusion that government spending, trade balance, inflation, economic growth, and exchange rates are the main factors influencing Liberia's foreign debt.

The findings from the research have significant policy ramifications for Liberia.

1. Liberia must enact measures that promote economic growth in order to reduce external debt as it grows. Policymakers should concentrate especially on investments in the economy's productive sectors, as these will probably spur economic growth provided they are closely watched and free from poor management. Liberia can also concentrate on factors that influence economic growth, like capital accumulation, human resource development, and foreign direct investment.
2. Since government spending has a positive correlation with external debt; thus, there is a pressing need for the Liberia government to spend more on productive sectors of the economy.
3. Policymakers and the Liberia government must make sure that the exchange rate stabilizes and the economy must be exports driven in order to stop the country's foreign debt from rising. In order to achieve this, subsidies should be provided to domestic companies that manufacture the majority of the nation's imports. This would probably result in a decrease in the amount of money spent on imports and ultimately lower the nation's external debt.
4. Adopting an appropriate debt management plan is necessary to meet the goal of economic growth. For Liberia's government to create adequate revenue to repay loans with ease, money borrowed should be put to good use.

6. References

1. Abbas S, Wizarat S. Military Expenditure and External Debt in South Asia: A Panel Data Analysis. *Peace Econ Peace Sci Public Policy*. 2018;24(3):1–7. Available from: <https://doi.org/10.1515/peps-2017-0045>.
2. Abdullahi MM, Bakar NAAB, Hassan SB. Determining the Macroeconomic Factors of External Debt Accumulation in Nigeria: An ARDL Bound Test Approach. *Procedia Soc Behav Sci*. 2015;211:745–52. Available from: <https://doi.org/10.1016/j.sbspro.2015.11.098>.
3. Osman AN, Liban OS. The impact of external debt on Economic Growth in Somalia. *Int J Humanit Soc Sci Educ*. 2023;10(10):1–9.
4. Adamu IM. Re-Visiting the Drivers for Increasing External Debt. *J Contemp Issues Thought*. 2019;9(June):40-45. Available from: <https://doi.org/10.37134/jcit.vol9.5.2019>.
5. African Development Bank. *Liberia Economic Outlook: Recent macroeconomic and financial developments*. 2023.
6. Al-Fawwaz TM. Determinants of External Debt in Jordan: An Empirical Study (1990–2014). *Int Bus Res*. 2016;9(7):116.
7. Al-Fawwaz TM. Determinants of External Debt in Jordan: An Empirical Study (1990–2014). *Int Bus Res* [Internet]. 2016; Available from: <https://www.semanticscholar.org/paper/Determinants-of-External-Debt-in-Jordan>
8. Assandé DA, Nasr GE. Saving-Investment Gap and Economic Growth in Developing Countries: Simulated Evidence from Selected Countries. *Br J Econ Manag Trade*. 2014;4(10):1585–1598. Available from: <https://doi.org/10.1002/ijfe.2236>.
9. Awan RU, Anjum A, Rahim S. An Econometric Analysis of Determinants of External Debt in Pakistan. *J Econ Manag Trade*. 2015;5(4):382–91. Available from: <https://doi.org/10.9734/bjemt/2015/8837>.
10. Azolibe CB. Determinants of External Indebtedness in Heavily Indebted Poor Countries: What Macroeconomic and Socio-Economic Factors Matter? *Am Econ*. 2020;1–16. Available from: <https://doi.org/10.1177/0569434520938326>.
11. Bacha E. A Three Gap Model of Foreign Transfers and GPD Growth Rate in Developing Countries. *Textos Para Discussão 221*, Department of Economics PUC-Rio (Brazil). 1989.
12. Belguith SO, Omrane H. Macroeconomic Determinants of Public Debt Growth: A Case study for Tunisia. *Theor Appl Econ*. 2017;0(4(613)):161–168.
13. Bellot NJ, Selva MLM, Menéndez LG. Determinants of sub-central European government debt. *Span Rev Financ Econ*. 2017;15(2):52–62. Available from: <https://doi.org/10.1016/j.srfe.2017.04.001>.
14. Beyene SD, Kotosz B. Macroeconomic Determinants of External Indebtedness of Ethiopia: ARDL Approach to Cointegration. *Soc Econ*. 2020a;42(3):313–332. Available from: <https://doi.org/10.1556/204.2020.00013>.
15. Beyene SD, Kotosz B. Determinants of External Indebtedness in Heavily Indebted Poor Countries: An Empirical Evidence Using Panel-Corrected Standard

- Error Regression. *J Appl Econ Sci.* 2020b;15(1 (67)):229–242. Available from: <https://doi.org/10.14505/jaes.v15.1.67.21>.
16. Bittencourt M. Determinants of Government and External Debt: Evidence from the Young Democracies of South America. *Emerg Mark Financ Trade.* 2015;51(3):463–472. Available from: <https://doi.org/10.1080/1540496X.2015.1025667>.
 17. Brafu-Insaidoo WG, Ahiakpor F, Ogeh FV, William GC. Macro-determinants of Short-Term Foreign Debt in Ghana. *Cogent Econ Financ.* 2019;7(1). Available from: <https://doi.org/10.1080/23322039.2019.1630161>.
 18. Chenery HB, Strout AM. Foreign Assistance and Economic Development. *Am Econ Rev.* 1966;56:679–733.
 19. Chiminya A, Dunne JP, Nikolaidou E. The Determinants of External Debt in Sub Saharan Africa. School of Economics Macroeconomics Discussion Paper Series 2018-02, School of Economics, University of Cape Town. 2018.
 20. Chirwa TG, Odhiambo NM. The Determinants of Public Debt in the Euro Area: A Panel ARDL approach. *UNISA Econ Res Work Pap Ser.* 2018;(January).
 21. Dawood M, Baidoo ST, Shah MR. An empirical investigation into the determinants of external debt in Asian developing and transitioning economies. *Dev Stud Res.* 2021; Available from: <https://www.tandfonline.com/loi/rdsr20>.
 22. Domar ED. Capital Expansion, Rate of Growth and Employment. *Econometrica.* 1946;14:137–147.
 23. Fatukasi B, Kolawole BG, Falade AOO, Ayeomoni IO. Determinants of External Debt in Nigeria: Insecurity as the Prevalent Issue. *Int J Manag Stud Soc Sci Res.* 2020;2(2):1–8.
 24. Gokmenoglu K, Rafik RAM. Determinants of external debt: The case of Malaysia. In: *Emerging Trends in Banking and Finance.* Cham: Springer; c2018. p. 16–33.
 25. Gujarati D. *Basic Econometrics.* 4th ed. New York: McGraw Hill; c2003.
 26. Harris R. *Using cointegration analysis in econometric modelling.* London: Prentice Hall/Harvester; c1995.
 27. Harrod RF. *An Essay in Dynamic Theory.* *Econ J.* 1939;49:14–33.
 28. International Development Association, International Monetary Fund. *LIBERIA: Joint World Bank-IMF Debt Sustainability Analysis.* Prepared Jointly by the staffs of the International Development Association (IDA) and the International Monetary Fund (IMF). Approved by Marcello Estevão (IDA) and Celine Allard (IMF); c2020.
 29. Mijiyawa AG. External debt in developing countries since HIPC and MDRI: What are the driving factors? *Int J Financ Econ.* 2020. p. 1-17.
 30. Onakoya AB, Ogunade AO. External Debt and Nigerian Economic Growth Connection: Evidence from Autoregressive Distributed Lag Approach. *J Econ Dev Stud.* 2017;5(1):66–78.
 31. Oppong-Baah T, *et al.* The Impact of Trade Openness on Economic Growth: The Case of Ghana and Nigeria. *J Hum Resour Sustain Stud.* 2022;10(1): Available from: <https://doi.org/10.4236/jhrss.2022.101010>.
 32. Özata E. Determinants of External Debt Accumulation in Turkey: Evidence from an ARDL Bound Test Approach. *J Bus Econ Policy.* 2017;4(4):134–43.
 33. Sheng XS, Sukaj R. Identifying external debt shocks in low-and middle-income countries. *J Int Money Financ.* 2021;110(1):102-283. Available from: <https://doi.org/10.1016/j.jimonfin.2020.102283>.
 34. Udoh E, Rafik R. Determinants and Transmission Channel of External Debt: Evidence from Malaysia. *Asian J Econ Bus Account.* 2017;4(1):1–10. Available from: <https://doi.org/10.9734/ajeba/2017/35031>.
 35. Vighneswara S. Government Debt and its Macroeconomic Determinants – an Empirical Investigation. Munich Personal RePEc Archive. 2015;64106.
 36. Vighneswara S. Government Debt and its Macroeconomic Determinants – An Empirical Investigation. *SSRN Electron J.* 2015. Available from: <https://doi.org/10.2139/ssrn.2601875>.
 37. Waheed A. Determinants of External Debt: A Panel Data Analysis for Oil and Gas Exporting and Importing Countries. *Int J Econ Financ Issues.* 2017;7(1):234–40.
 38. World Bank. <https://data.worldbank.org/indicator/GC.DOD.TOTL.GD.ZS?locations=LR>. 2023.
 39. Yazdanfar PÖD. Short- and long-term debt determinants in Swedish SMEs. *Rev Account Financ.* 2017;16(1):106–114. Available from: <https://doi.org/10.1108/RAF-08-2015-0118>.
 40. Yusuf A, Mohd S, McMillan D. The impact of government debt on economic growth in Nigeria. *Cogent Econ Financ.* 2021;9(1): Available from: <https://doi.org/10.1080/23322039.2021.1946249>.
 41. Mensah L, Arku FK. The drivers of external debt in Ghana. *Afr. J Econ Manag Stud.* 2024; ahead-of-print(ahead-of-print). Available from: <https://doi.org/10.1108/AJEMS-10-2023-0418>.

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