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EXTERNAL DEBT AND GDP PERFORMANCE IN GHANA: A COINTEGRATION AND A VECTOR ERROR CORRECTION ANALYSIS

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Abstract: The accumulation of external debt, along with its repayment conditions, has placed developing nations, like Ghana and other African countries, in an unfavourable fiscal situation. This study builds on earlier research in this area by looking into the connection between Ghana's external debt and the country's GDP performance. It does this by also looking at other macroeconomic variables, like inflation, unemployment, and gross national income, which could also affect GDP performance, and by using data from the most recent year to reflect the current state of the economy. The secondary data was collected annually for this research work, spanning from 1990 to 2022, via the World Bank. A Johansen cointegration, VAR model, and VECM were applied for the analysis of the data collected in this study. The result of the analysis carried out in this study shows that there is a significant association among GDP performance, external debt, inflation, unemployment, and GNI in both the short run and the long run. The findings also show that external debt in the short and long run has a detrimental effect on Ghana's GDP performance, indicating that an increase in external debt contributes to a decline in Ghana's GDP performance. Consequently, the government should increase the country's productivity and utilise the external debt for infrastructural development that will enhance national revenue generation and mitigate further borrowing in the future that will impede the country's GDP performance.

Keywords: External Debt, GDP Performance, Johansen Cointegration, VECM.

1. INTRODUCTION

Ghana, like numerous other emerging nations, confronts a severe disparity in savings and investment, which significantly hampers the pace of economic

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growth and sustainable development. Given this situation, it has become imperative to seek external assistance in order to boost domestic earnings. Nevertheless, the accumulation of these foreign loans, along with their repayment conditions, has placed developing nations, like Ghana, in an unfavourable fiscal situation. Ghana has consistently received development aid in the form of grants and loans, with an average amount of US$300 million between 1960 and 2003, according to the Ministry of Finance and Economic Planning (2009). Research on the economic outlook of foreign debt in developing countries yields varied results. Siddique, Selvanathan, and Saroja's study from 2015 as well as Diego, Jonhannes, and Marcelo's from 2009 are noteworthy studies that explain the positive effects of external debt on the economy. However, Todaro and Smith (2009) discovered a detrimental impact of external debt on economic growth. Eaton (1993) posited that external debt serves as a complement to domestic savings and investment, hence promoting economic growth. According to the World Bank (2020), there is evidence indicating that Ghana's debt stock experienced a significant rise following the deployment of SAP and ERP. According to a report from the World Bank in 2004, 87 countries forgave Ghana's debt through the HIPC6 initiative in July 2005. Nevertheless, the country's debt stock had a significant rise, as estimated by International Debt Statistics (2019). This growth in debt stock from 2009 to the present can be attributed to the worldwide inflation surge. Nevertheless, considering the concept of a nation's ability to borrow from foreign sources based on its potential for economic expansion, as long as the borrowed funds are not enough to generate a return rate higher than the total foreign debt, there has generally been an expectation that developing countries would obtain additional capital to supplement their domestic savings and investments. The borrowing rates of these countries are contingent upon the interconnections between domestic and international savings, investment, and economic growth, with the aim of enhancing the borrowing nations' capacity to generate foreign savings. Nevertheless, external debt may only be considered productive if it is well managed to generate a return that exceeds the cost of servicing the debt. Ghana's escalating external debt profile has emerged as a significant issue for the future. In 2019, the Ghanaian government obtained a loan of 2 billion US dollars from the Chinese government as part of Ghana's transformative plan. The purpose of this loan was to finance the development of roads, rail, and bridge networks in Ghana. In return for this loan, the Chinese government was granted 5 percent ownership of Ghana's bauxite reserve (Smith, 2019).

While external borrowing may initially appear as a favourable solution to challenging economic situations, continuous borrowing over time leads to significant economic consequences for both present and future generations. These consequences include a severe decline in living standards, heavy reliance on external sources, devaluation of the currency, and an overall deterioration of social and economic conditions. The average foreign debt of Ghana from 1960 to 2019 amounts to a total of $6,581.80 million, with the highest recorded value of $26,953.31 million in the fourth quarter of 2019. The escalating debt level of Ghana has repeatedly been linked to persistent income deficits or exceeding chronic government spending (Yartey, 2014; Kusi, 2015; Kwakye, 2014).

The ongoing worldwide epidemic, also referred to as COVID-19, has compelled the nation to augment its expenditure in order to alleviate the impact of the pandemic on the country. According to the International Monetary Fund (IMF), in 2020, the country's debt-to-GDP ratio is expected to reach 76.7% by December 2020. Prior research on Ghana's debt level and its impact on the Ghanaian economy has attributed Ghana's debt levels to the ongoing fiscal deficits of the Ghanaian government. Governments frequently resort to domestic or international borrowing to pay their budget deficits when faced with revenue shortfalls or unexpected increases in expenditure forecasts. Considering the increasing amount of foreign debt in Ghana, it is crucial for the government to conduct a thorough evaluation of the impact of the accumulated debt on its economic growth. This study enhances the existing body of knowledge by quantifying the influence of external debt on Ghana's economic outlook. It employs a Johansen co-integration analysis and an error correction methodology on annual data spanning from 1990 to 2022. By offering an updated version, this study expands on the earlier work by Asafo and Matuka (2019). This study aims to enhance the existing knowledge by utilising a cointegration and a vector error correction model to examine the relationship between external debt and GDP performance. It will also consider macroeconomic fluctuations, such as inflation, unemployment, and gross national income (GNI), which were not taken into account in previous studies. This research will provide valuable insights and significantly contribute to the current understanding of the subject.

2. REVIEW OF EMPIRICAL LITERATURE

This chapter aims to provide a thorough overview of contemporary empirical research that investigates the association between external debt and economic

advancement. The majority of research on the relationship between external debt and economic development has mostly focused on empirical verification. Abdullahi *et al.* (2016) utilized an autoregressive regressive distributed lag (ARDL) model to investigate the association between debt and GDP in Ghana. Their estimation was derived from annual data covering the period from 1970 to 2014. The analysis indicated that foreign debt has a notable beneficial influence on economic growth in Ghana, whereas the overall debt service has a substantial detrimental impact. The study also found evidence of debt overhang and crowding-out effects resulting from the growing buildup of external debt and the associated expense of servicing that debt.

Senadza, Fiagbe, & Quartey (2017) employed the generalized method of moments approach to examine yearly data from 1990 to 2013 for 39 countries in sub-Saharan Africa. Their objective was to examine the correlation between foreign debt and economic progress. The data reveals a negative correlation between debt and economic growth. Furthermore, the classification of nations for evaluating the impact of per capita income on the relationship between debt and economic growth lacks statistical relevance. The statistics also indicated that there is no nonlinear correlation between external debt and economic advancement.

In their 2015 study, Siddique, Selvanathan, and Saroja found evidence of both immediate and long-term causality between foreign debt service and GDP in heavily indebted poor countries (HIPC) from 1970 to 2007, using panel data analysis. Sulaiman and Azeez (2012) conducted a study examining the impact of external debt on Nigeria's economic growth from 1970 to 2010, utilizing the Vector Error Correction Approach. The research findings suggest that Nigeria's economic growth is greatly enhanced by its reliance on external debt.

Kasidi and Said (2013) utilized co-integration and vector error correction methodologies to investigate the association between external debt and economic development in Tanzania during the period of 1990 to 2010. Based on their research, external debt has a positive influence on growth, whereas debt servicing payments have a negative effect on growth. Frimpong and Oteng-Abayie (2006) employed co-integration and error correction techniques on yearly data spanning from 1970 to 1999 to ascertain the impact of external debt on Ghana's economic progress. The researchers discovered that debt repayment exerts a detrimental effect on economic growth, whereas borrowing from foreign sources yields a beneficial influence.

Insufficient revenue generation by a nation to cover its expenses or essential requirements requires the examination of alternative options, preferably by seeking financial aid from foreign countries or institutions to fulfill its responsibilities. Prior research has proposed alternate strategies for developing country governments to generate funding for their economic development initiatives, as well as methods to guarantee the enduring viability of these debts. The literature in issue pertains to the study undertaken by Awan and Qasim (2020), which suggests that a government should develop financial resources by increasing output, tax income, and exports. Based on a study conducted by A. G. Awan and Aslam (2015), it is recommended that governments give preference to obtaining loans from domestic institutions or individuals rather than depending on foreign sources. This is because domestic debt can be repaid using the borrowing country's own currency, thereby bypassing any potential limitations and conditional responsibilities usually associated with borrowing from foreign companies.

In addition, other studies have sought to analyze and quantify the impact of external debt on a country's economic growth using different methods. Multiple studies have found a detrimental link between foreign debt and economic growth, while others have found a positive correlation. These studies have offered suggestions derived on their discoveries. Ohiomu (2020) utilized the group unit root test, auto-regressive distributed lag (ARDL) bounds testing, and co-integrating long-run tests in their study to investigate the relationship between foreign debt and economic growth. The aim of this study was to provide significant insights for policy analysis in the fields of public finance and public debt management. The outcome has demonstrated an adverse impact on Nigeria's economic expansion due to the substantial debt and subsequent decline in investment caused by the crowding-out phenomenon. The study conducted by Sajuyigbe *et al.* (2018) found a comparable result when examining the impact of external debt on Nigeria's economic progress from 1999 to 2015. The study utilized many estimating techniques, such as the Augmented Dickey Fuller (ADF) test, Johansen co-integration, vector error correction mechanism, and Granger causality test. The findings indicate a negative correlation between external debt and economic growth in Nigeria. Moh and Jaradat (2019) and Kharusi and Ada (2018) have also corroborated this position, drawing from their individual studies conducted in Jordan and Oman, respectively. Their research indicates that external debt exerts a substantial and detrimental influence on economic advancement. From 2006 to 2016, Shkolnyk and

Koilo (2018) conducted a study investigating the relationship between external debt and economic growth in emerging countries. The researchers utilized the ARDL model, regression model, and correlation analysis in their investigation. According to their research, a substantial level of foreign debt, along with macroeconomic instability, hinders economic advancement in these nations. Anderu and Omolade (2019) conducted a study and discovered comparable outcomes, suggesting that foreign debt does not improve economic performance. Awan and Ghafoor (2019) reached a comparable conclusion, suggesting that developing countries are facing insufficient governance. The suggestion was made that these nations should prioritise the improvement of production as a means to reduce their load of foreign debt.

Furthermore, Shittu and Olawale (2018) discovered a similar adverse correlation between external debt and economic development. Their research covered the period from 1990 to 2015 and focused on five countries situated in Sub-Saharan Africa (SSA). Pegkas (2018) examined the presence of threshold effects in Greece by assessing the relationship between general government debt and economic development from 1970 to 2016. Empirical evidence from threshold models shows a clear negative correlation between total government debt and economic growth. The findings suggest that the extent of the adverse correlation between debt and economic development is contingent upon the specific debt regimes being implemented. Furthermore, the findings indicate a correlation between public debt and reduced economic growth, even in cases where public debt levels are very modest. N'Zue (2020) found that external debt exerted a positive influence on economic growth in the ECOWAS region, but this effect was limited to a certain threshold. The researchers employed panel data from 1990 to 2016 and utilized the panel CS-ARDL estimation method for their analysis. The study undertaken by G. Vdel found that external debt continuously had a positive impact on economic growth. Saeed and Islam (2018) conducted a comparative analysis of the developing economies in South Asia, specifically Pakistan, Bangladesh, Sri Lanka, and India, from 1980 to 2014. They employed nonlinearity and endogeneity to analyze the correlation between public debt and economic development. The findings demonstrated a notable and nonlinear correlation between public debt and economic growth in the chosen group of developing nations.

Several studies have examined the correlation between a country's external debt and its economic growth, taking into account both the short-term and long-term timeframes. The study conducted by Ehikioya and Omankhanlen

(2020) suggests that after a certain threshold is exceeded, the immediate effects correspond to the long-term equilibrium. Moreover, their inquiry reveals that external debt triggers a detrimental effect on economic growth in Africa. In their study, Mazher and Dahalan (2019) found a notable and negative relationship between the external debt-to-GDP ratio in the near future. Over time, it has been observed that the ratios of external debt to GDP, external debt to export earnings, and investment to GDP are negatively correlated with GDP, but this relationship lacks statistical significance. The studies undertaken by Hameed and Quddus (2020) as well as Ahamad and Islam (2020) found that external debt has a negative impact on economic growth, both in the short term and the long term. Zohaib (2020) demonstrates a distinct unfavorable correlation between external debt and economic growth, which remains valid in both the short-term and long-term. The study conducted by Ajayi and Edewusi in 2020 provides further evidence of the detrimental effect on economic performance, both in the short-term and long-term. The analysis conducted by Guei (2019) reveals that debt has a little effect on long-term economic growth. However, in the short term, there is a notable and large negative link between external debt and economic growth. Edo and Osadolor (2020) utilized the ARDL panel model and suitable estimation procedures to investigate the impact of foreign debt and exports on the economic advancement of sub-Saharan African nations. Their findings indicate that, in the immediate term, both foreign debt and exports have a negligible but beneficial impact on economic advancement. However, with time, this effect becomes harmful.

In Ghana, a study conducted by Asafo and Matuka (2019) aimed to evaluate the immediate and long-term effects of foreign debt on the country's economic growth. The researchers utilized co-integration analysis and error correction methodology to examine annual time series data from 1970 to 2017. According to their analysis, the rise in external debt has a positive effect on economic growth in Ghana, benefiting both the long-term and short-term.

3. RESEARCH METHODOLOGY

This study adopts a quantitative research method, and the annual data was collected for this study via the World Bank from 1990 to 2022 to capture the current reality of the Ghanian economy and also based on the availability of the data using a purposive sampling approach.

Meanwhile, the methods of analysis employed for the collected data include summary statistics (using mean and standard deviation) and empirical

methods such as the unit root test, cointegrating analysis, and vector error correction model.

The unit root test was adopted using the augmented dickey-fuller (ADF) approach to determine the stationarity of the series using the differencing operator (Δ) to eliminate the erroneous conclusion that could be associated with the presence of unit roots that signify a non-stationary series.

The cointegrating analysis applied in this study is the Johansen cointegration, which helps to determine the significance of the cointegrating equation, and the presence of cointegration indicates that there is a long-term association among the series.

Besides, the vector error correction model (VECM) is very similar to the VAR model because the only difference is the introduction of the error correction term in the VECM. It is also pertinent to note that all variables will be treated as endogenous in the VAR model and VECM. The VAR (p) model can be specified as follows:

$$x_t = \varphi + \Phi_1 x_{t-1} + \ldots\ldots\ldots\ldots + \Phi_p x_{t-p} + £_t \quad (1)$$

And the introduction of the error correction term $\prod x_{t-1}$ make it becomes VECM and can be specified as follows:

$$\Delta x_t = \Pi x_{t-1} + \Sigma_{i=1}^{P-1} \Phi_i \Delta x_{t-i} + £_t \quad (2)$$

Where *P* is the lag order of the model, Δ is the differencing operator. $\prod x_{t-1}$ is the error correction term, the Φ is the coefficient matrix of the lags of the differenced endogenous variables of x, which are the GDP, external debt, and other macroeconomic fluctuations that can contribute to GDP performance, such as inflation, unemployment, and gross national income (GNI), the £ is the error term, and the t is the period in years.

Furthermore, there is a need for diagnostic tests such as the normality, and autocorrelation tests to ascertain the adequacy and reliability of the fitted empirical models.

Table 1: Variable Measurement

Variables	Measurement
GDP	Billion USD
External debt	Billion USD
Inflation	Percentage (%)
Unemployment	Percentage (%)
Gross national income	Billion USD

Source: World Bank

4. RESULTS

Table 2: Summary Statistics

Statistics	*GDP*	*External Debt*	*Inflation*	*Unemployment*	*GNI*
Mean	29.21	4.71	19.76	5.56	27.86
Std. Dev.	25.816	2.231	12.990	2.117	25.131
Skewness	0.599	-0.026	0.350	0.741	0.703
Jarque-Bera	4.016	2.240	11.993	3.120	4.113
Probability	0.134	0.326	0.102	0.210	0.128
Observations	33	33	33	33	33

Source: Author's computation using EViews software

Table 2 shows that the average Ghana GDP is about 29 billion USD with a variability of about 26 billion USD during the period under review, the average external debt is about 4.7 billion USD with a variability of about 2.2 billion USD, the average Ghana inflation rate is about 20% with a variability of about 13% during the period under review, the average unemployment rate in Ghana during the period under review is about 6% with a variability of about 2%, and the average gross national income (GNI) is about 28 billion USD with a variability of about 25 billion USD. Besides, the probability value of all the series, such as GDP, external debt, inflation, unemployment, and GNI, exceeds the 0.05 significant level, indicating that the data are normally distributed.

Table 3: Unit Root Test

Null Hypothesis: has a unit root		
Differenced Variable	*Test-Statistic*	*P-value*
D (GDP)	-6.17	0.000
D (External Debt)	-6.21	0.000
D (Inflation)	-5.97	0.000
D (Unemployment)	-4.68	0.001
D (GNI)	-3.16	0.032

Source: Author's computation using EViews software

Table 3 shows that all the series under study become stationary after the first difference, with a corresponding p-value that is less than the 0.05 significant level, which implies they are all statistically significant. This implies that erroneous findings associated with non-stationary series have been eliminated, and further empirical analysis can be carried out.

Table 4: Johansen Cointegration

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		*Trace*	*0.05*	
No. of CE(s)	*Eigenvalue*	*Statistic*	*Critical Value*	*P-value*
None *	0.804282	99.71216	69.81889	0.0000
At most 1 *	0.485140	49.14872	47.85613	0.0376
At most 2	0.409536	28.56906	29.79707	0.0688
At most 3	0.269962	12.23679	15.49471	0.1459
At most 4	0.076954	2.482362	3.841466	0.1151
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				

Table 4 shows that the first two cointegrating equations have a p-value that is less than 0.05 at a significant level, implying that there is a presence of cointegration among the series, suggesting that there is a long-term association among the GDP performance, external debt, inflation, unemployment, and GNI.

Table 5: VAR Model (Short run)

	Coefficient	*Std. Error*	*t-Statistic*	*P-value*
$GDPx_{t-1}$ C(1)	0.514110	0.287473	1.788376	0.0758
C(5)	0.528505	0.301983	1.750117	0.0822
C(6)	1.740237	1.417731	1.227480	0.2216
External $Debtx_{t-1}$ C(7)	-0.031059	0.015023	-2.067378	0.0405
C(8)	0.502885	0.166265	3.024596	0.0029
C(12)	3.213830	1.156822	2.778155	0.0062
$Inflationx_{t-1}$ C(13)	-0.542900	0.664895	-0.816519	0.4155
C(17)	0.378754	0.698455	0.542274	0.5885
C(18)	24.37865	3.279064	7.434638	0.0000
$Unemploymentx_{t-1}$ C(19)	-0.009277	0.009366	-0.990530	0.3236
C(22)	0.808368	0.109977	7.350318	0.0000
C(24)	1.345150	0.825653	1.629196	0.1054
$GNIx_{t-1}$ C(25)	0.370994	0.123679	2.999649	0.0032
C(29)	0.668188	0.129922	5.143007	0.0000
C(30)	0.659868	0.609948	1.081843	0.2811

Table 5 indicates that the changes in GDP and its two previous values are statistically significant at a 10% level. Similarly, the changes in external debt and its three previous values are statistically significant at a 5% level. The change in inflation and its third previous value is statistically significant at a 1% level. Additionally, the change in unemployment and its second previous value is statistically significant at a 1% level. Lastly, the change in GNI and its two previous values are statistically significant at a 1% level. This suggests that the performance of GDP is temporarily linked to foreign debt, inflation, unemployment, and GNI. Table 5 demonstrates that short-term external debt has a detrimental effect on GDP performance.

Table 6: VECM (Long-Run)

	Coefficient	*Std. Error*	*t-Statistic*	*P-value*
$GDPx_{t-1}$ C(1)	-0.926447	0.323595	-2.862982	0.0049
C(5)	-2.976455	0.981370	-3.032958	0.0029
C(6)	0.503874	0.376291	1.339054	0.1828
C(7)	1.047321	1.210393	0.865274	0.3884
External $Debtx_{t-1}$ C(8)	-0.204447	0.105954	-1.929574	0.0458
C(12)	-0.196262	0.321329	-0.610782	0.5424
C(13)	0.201741	0.123208	1.637395	0.1039
C(14)	-0.473140	0.396317	-1.193843	0.2346
$Inflationx_{t-1}$ C(15)	0.780085	0.743085	1.049791	0.2957
C(19)	5.005185	2.686955	1.862772	0.0447
C(21)	0.357331	2.432128	0.146921	0.8834
$Unemploymentx_{t-1}$ C(22)	0.184063	0.056187	3.275889	0.0013
C(26)	0.684478	0.170400	4.016893	0.0001
C(27)	-0.031035	0.065337	-0.474997	0.6356
C(28)	0.072320	0.210166	0.344108	0.7313
$GNIx_{t-1}$ C(29)	0.494248	0.179208	2.757950	0.0066
C(30)	-0.382670	0.139087	-2.751297	0.0068
C(33)	-1.434832	0.439394	-3.265481	0.0014
C(34)	0.442973	0.160065	2.767452	0.0064
C(35)	2.264440	0.551351	4.107076	0.0001

Table 6 shows that the changes in GDP and its lag values are statistically significant at a 1% level. The changes in external debt and its lag value are statistically significant at a 5% level. The changes in inflation and its second lag value are also statistically significant at a 5% level. The changes in unemployment and its lag values are statistically significant at a 1% level. Lastly, the changes in GNI and its lag values are statistically significant at a 1% level. This suggests that the performance of GDP is significantly influenced by foreign debt, inflation, unemployment, and GNI over a prolonged period of time. Table 6 demonstrates that long-term external debt has a detrimental effect on GDP performance.

Table 7: Diagnostic test: System Residual Portmanteau Tests for Autocorrelations

Lags	*Q-Stat*	*P-value*	*df*
1	21.83198	0.6454	25
2	59.28481	0.1730	50
3	85.49956	0.1910	75
4	111.0162	0.2122	100
5	139.8555	0.1720	125
6	158.5107	0.3013	150
7	183.7565	0.3100	175
8	197.1174	0.5444	200
9	221.5077	0.5533	225
10	239.4426	0.6733	250
11	272.1808	0.5367	275
12	287.8664	0.6826	300
13	302.0037	0.8154	325
14	318.0404	0.8890	350
15	329.7049	0.9555	375
16	346.7994	0.9743	400
17	355.7592	0.9937	425
18	369.0401	0.9979	450
19	378.1828	0.9996	475
20	385.0915	1.0000	500
21	388.7045	1.0000	525
22	393.3334	1.0000	550
23	395.1070	1.0000	575
24	396.7668	1.0000	600
25	398.3916	1.0000	625
26	400.0274	1.0000	650
27	401.8683	1.0000	675

28	402.1831	1.0000	700
29	402.6316	1.0000	725
30	403.5068	1.0000	750
31	403.5068	1.0000	775
32	403.5068	1.0000	800
33	403.5068	1.0000	825
34	403.5068	1.0000	850
35	403.5068	1.0000	875

Table 8: System Normality Residual Test

Component	*Skewness*	*Chi-sq*	*df*	*P-value*
1	0.961126	4.772774	1	0.1289
2	0.651253	14.08763	1	0.1022
3	0.642970	2.135952	1	0.1439
4	-0.030661	0.004857	1	0.9444
5	0.139396	0.100395	1	0.7514

The two diagnostic tests, such as the autocorrelation and the normality in Tables 7 and 8, respectively, show that the P-values of the residual exceed the 0.05 significant level, indicating that the model does not suffer from the problem of autocorrelation and that the residual is normally distributed, which indicates that the fitted models are valid and adequate.

4.1. Findings

The research conducted in this study reveals that all the series examined exhibit stationarity after the first difference. This is supported by p-values below the 0.05 significance level, indicating that they are all statistically significant (refer to Table 3). This suggests that any incorrect conclusions related to non-stationary data have been removed, allowing for additional empirical investigation to be conducted.

The Johansen cointegration analysis in Table 4 reveals that the first two cointegrating equations exhibit a p-value below 0.05, indicating statistical significance. This suggests the existence of cointegration among the series, implying a long-term relationship among GDP performance, external debt, inflation, unemployment, and GNI.

Table 5 presents the findings of the VAR model, which indicates a temporary connection between the performance of GDP and foreign debt, inflation, unemployment, and GNI. Table 5 illustrates that there is a

statistically significant inverse relationship between short-term external debt and GDP performance. Indicating that Ghana's short-term GDP performance is negatively affected by the existence of external debt. Furthermore, Table 6 illustrates a durable correlation between GDP performance and variables such as foreign debt, inflation, unemployment, and GNI, as evidenced by the VECM. The VECM study reveals a statistically significant negative correlation between long-term foreign debt and GDP performance. This indicates that Ghana's GDP performance is adversely affected by external debt over a prolonged period of time. This discovery supports the investigation conducted by Ehikioya and Omankhanlen (2020), who suggest that once a particular threshold is reached, the immediate outcomes correspond with the long-term equilibrium. Moreover, their inquiry reveals that external debt begins to have a detrimental effect on economic growth in Africa. In their study, Mazher and Dahalan (2019) identified a notable and negative association between the external debt-to-GDP ratio in the near run. Over time, it has been observed that the ratios of external debt to GDP, external debt to export earnings, and investment to GDP are negatively correlated with GDP, but this relationship lacks statistical significance. The studies undertaken by Hameed and Quddus (2020) and Ahamad and Islam (2020) found that external debt has a negative impact on economic growth, both in the short term and the long term. Zohaib (2020) demonstrates a distinct negative correlation between external debt and economic growth, which is valid in both the short-term and long-term. The study conducted by Ajayi and Ibidolapo in 2020 provides further evidence of the detrimental effect on economic performance, both in the short-term and long-term. Guei's (2019) analysis reveals that debt has a little effect on long-term economic growth. However, it challenges the conclusions of Asafo and Matuka's (2019) research, which indicates that the rise in external debt positively affects Ghana's economic growth in both the short and long run.

5. CONCLUSION

This study contributes differently to the body of knowledge and improves on the previous related work by investigating the link between external debt and GDP performance in Ghana while incorporating other macroeconomic variables such as inflation, unemployment, and gross national income that could also contribute to GDP performance while accounting for the most recent year to capture the current economic reality. The result of the analysis carried out in this study shows that there is a significant association among

GDP performance, external debt, inflation, unemployment, and GNI in both the short run and the long run. The findings also show that external debt in the short and long run has a detrimental effect on Ghana's GDP performance, indicating that an increase in external debt contributes to a decline in Ghana's GDP performance. Hence, the government should increase the country's productivity and utilise the external debt for infrastructural development that will enhance national revenue generation and mitigate further borrowing in the future that will impede the country's GDP performance.

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