
Original Paper

Determinants of debt sustainability in Ghana: Analysis of the moderating role of institutional quality

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Abstract

This study analyzes the macroeconomic and institutional factors influencing debt sustainability in Ghana, focusing specifically on the debt service-to-export ratio (DSEX) as the dependent variable. This study incorporates essential macroeconomic indicators, including Gross Domestic Product (GDP) growth, inflation rate, interest rate, public debt, and export performance, while considering institutional quality as a moderating variable. Annual time-series data from 1990 to 2022 were obtained from the World Bank and International Monetary Fund (IMF) databases. The analysis utilised Ordinary Least Squares (OLS) regression and interaction modelling techniques to examine direct and moderating effects.

The findings indicate that GDP growth, inflation, and export performance do not significantly impact the DSEX. However, interest rates and public debt have statistically significant positive effects, implying that increasing borrowing costs and elevated debt levels exacerbate Ghanaian's external debt burden. Contrary to theoretical expectations, institutional quality does not moderate the relationship between public debt and DSEX, suggesting a limited institutional influence on transforming growth into sustainable debt outcomes. The findings are consistent with the Solvency Constraint Theory and the Debt Overhang Hypothesis, yet they reveal limitations in the predictive capacity of Institutional Theory in this context.

The originality of this study is rooted in its integrated approach that combines macroeconomic and institutional variables within a singular empirical framework tailored to Ghana. Policy recommendations include improving fiscal discipline, decreasing reliance on non-concessional debt, and bolstering institutional capacity. Future research should utilise dynamic modelling and comparative analysis among similar economies to validate these relationships and reveal context-specific insights.

Keywords: Debt Sustainability, Macroeconomic Indicators, Institutional Quality Public Debt, Modelling

1. Introduction

Debt sustainability has become a significant policy issue for Ghana, mirroring a wider trend in Sub-Saharan Africa (SSA), characterised by a substantial increase in public debt levels over the last 20 years (Ye & Guo, 2024; Shah et al., 2023). In 2022, Ghana's debt-to-GDP ratio exceeded 70%, categorising the nation alongside various sub-Saharan African economies as being at an elevated risk of debt distress (UNCTAD, 2023). In this context, debt sustainability denotes a state's capacity to meet its existing and forthcoming debt obligations without triggering destabilising economic or fiscal adjustments (Mehrotra & Sergeyev, 2021). The persistent debt vulnerabilities in Ghana stem from structural challenges, including inadequate revenue mobilisation, reliance on primary exports, and susceptibility to external shocks, such as commodity price volatility and global financial instability (Pila, 2023).

Macroeconomic and fiscal variables, including GDP growth, budget deficits, inflation, and current account balances, have historically been the focus of scholarly and policy discussions on debt sustainability (Karki et al., 2024; Kasongo, 2023). However, the influence of governance and institutional quality has not been adequately examined in the context of Ghana. Institutional quality, which includes

control of corruption, the rule of law, regulatory quality, and government effectiveness, is increasingly acknowledged as essential for fiscal prudence and responsible debt management (Alemu et al., 2024; Akomolafe, 2024). Strong institutions promote transparency and accountability in public finance while mitigating fiscal risks linked to unsustainable borrowing.

The relationship between institutional quality and debt sustainability in Ghana has not been thoroughly explored, especially regarding the moderating role of institutional capacity in the connection between macroeconomic conditions and debt outcomes. Weak governance structures, characterised by opaque debt contracting, widespread corruption, and ineffective public expenditure management, persistently hinder fiscal consolidation efforts (Anheier et al., 2023; Oppong et al., 2023). The World Bank (2023) indicates that Ghana's high debt risk is partially attributable to institutional deficits even during times of relative economic stability.

Many current studies consider institutional quality as an exogenous or independent variable rather than as a mediating factor that influences the relationship between economic fundamentals and debt outcomes (Harsono et al., 2023; Lee et al., 2023). However, this analytical gap does not adequately address how governance quality can enhance or diminish the influence of economic and fiscal variables on debt sustainability. Two countries with comparable fiscal deficits may exhibit differing debt trajectories influenced by the robustness of their institutions. In Ghana, this nuance is essential because of the clear discrepancy between the economic growth patterns and debt accumulation.

This study aims to achieve two objectives: first, to identify the primary macroeconomic and fiscal determinants of debt sustainability in Ghana and second, to evaluate the moderating effect of institutional quality on the relationships between these determinants and debt sustainability outcomes. This study examines the following questions: What are the main economic and fiscal factors that influence debt sustainability in Ghana? How does institutional quality affect the strength and direction of such relationships? This study enhances academic and policy discussions by introducing institutional quality as a moderating variable. This approach transcends traditional linear models that posit fiscal indicators as the sole determinants of debt outcomes and presents a multidimensional perspective that incorporates economic, fiscal, and institutional dynamics.

This study enhances the academic understanding of public debt dynamics in Sub-Saharan Africa and provides practical policy insights for Ghana. This highlights the significance of institutional reforms, especially in promoting transparency, fortifying regulatory frameworks, and refining public financial management, as essential steps for attaining and sustaining debt sustainability. These insights are essential for national policymakers, international development partners, and the financial institutions involved in Ghana's fiscal policy and debt restructuring initiatives.

2. Literature Review

2.1 Theoretical Framework

Debt sustainability is grounded in various theoretical frameworks such as the Debt Overhang Hypothesis, Solvency Constraint Theory, and Institutional Theory. These frameworks offer essential perspectives for analysing fiscal behaviour, debt management practices, and macroeconomic stability in developing economies, such as Ghana. Their significance is especially evident in the Ghanaian context, where increasing debt levels and ongoing fiscal imbalances require a comprehensive understanding of debt sustainability.

The Debt Overhang Hypothesis suggests that a high level of national debt can deter both domestic and foreign investment because creditors expect future returns (Turan & Yanikkaya, 2021). This framework elucidates how unsustainable debt accumulation hinders growth prospects in Ghana. The applicability of this hypothesis in the Ghanaian context has been criticised for its insufficient consideration of the debt composition. The analysis frequently neglects to differentiate between the varying effects of domestic and external debt and fails to sufficiently consider the exacerbating influence of weak institutional frameworks, which can act as catalysts for debt distress regardless of the magnitude of debt (Sala & Trivin, 2024).

Solvency Constraint Theory enhances this discussion by positing that a nation's debt remains sustainable

only when anticipated future primary surpluses adequately cover the present value of its debt obligations (Avanzi et al., 2024). This theory supports international frameworks such as IMF debt sustainability assessments and provides a normative standard for fiscal prudence. Nonetheless, its relevance in Ghana is hindered by the nation's revenue volatility, which is primarily influenced by its reliance on commodity exports and limited tax systems. The theory's static assumptions inadequately address Ghana's structural fiscal rigidities such as a substantial public sector wage bill and restricted expenditure flexibility (Congregado et al., 2023).

Institutional Theory provides an additional perspective by emphasising the influence of governance on fiscal and debt outcomes. In Ghana, institutional quality, comprising the rule of law, corruption control, regulatory capacity, and government effectiveness, affects debt sustainability by fostering transparency, improving fiscal discipline, and minimising the risk of policy slippages (Gracia & Siregar, 2021). Critics contend that this theoretical perspective frequently overlooks the socio-political dynamics that compromise institutional effectiveness in fragile or transitional democracies, such as Ghana, where political cycles and clientelism often hinder long-term fiscal planning (Eliwa et al., 2021).

Collectively, these theoretical perspectives highlight the necessity of a multidimensional analytical framework to evaluate debt sustainability in Ghana. A framework should incorporate macroeconomic and fiscal indicators alongside institutional quality to effectively analyse the intricate relationship between governance and fiscal performance. Recognising institutional quality not only as an independent variable but also as a moderating factor provides a more nuanced understanding of the conditions necessary for Ghana to achieve long-term debt sustainability.

2.2 Empirical Review

Empirical research highlights a positive correlation between GDP growth and debt sustainability, particularly in developing economies. Boakye and Atuilik (2024) argue that nations with ongoing economic growth exhibit a greater ability to manage debt, mainly because of heightened public revenue generation and lower debt-to-GDP ratios. This perspective is supported by Muruko-Jaezuruka and Birks (2024), who demonstrate that Sub-Saharan African (SSA) nations exhibiting higher growth trajectories tend to be less vulnerable to debt distress. These studies frequently employ a linear growth-debt framework, which fails to account for the structural vulnerabilities present in SSA economies, particularly their reliance on primary commodity exports. In Ghana, variations in the global prices of oil, cocoa, and gold have historically hindered growth momentum and compromised the stability of government revenues (Ye & Guo, 2024). This finding suggests that the positive relationship between growth and debt is not inherently strong in Ghana and comparable sub-Saharan African economies. The literature presents a significant gap regarding the moderating effect of institutional quality, particularly in situations where inadequate institutions are unable to translate growth benefits into sustainable debt.

The export-to-GDP ratio serves as a crucial macroeconomic indicator related to debt sustainability, illustrating a nation's ability to generate foreign exchange and fulfil external debt commitments. Gomez-Gonzalez et al. (2023) contend that nations with a strong export orientation are more effectively equipped to handle external debt burdens, owing to consistent foreign exchange inflows. This proposition does not fully reflect the realities of SSA economies, including Ghana, where export earnings significantly depend on a limited range of volatile commodities. Ghana's export performance is notably susceptible to external shocks in the cocoa and gold markets, resulting in a significant instability in its debt servicing capacity (Ameyaw, 2024). Cross-country panel models have identified general trends between exports and debt sustainability; however, they frequently obscure the structural and institutional dynamics that are specific to individual countries. In Ghana, inadequate trade institutions and ineffective management of export revenues undermine the role of exports in maintaining debt sustainability. This highlights a relatively neglected aspect of the literature: the degree to which institutional governance conditions influence the relationship between export performance and external debt management.

The public debt-to-GDP ratio is a fundamental metric for evaluating fiscal health and debt sustainability. Paulsson et al. (2024) indicate that surpassing a threshold of 60–90% in this ratio generally reduces growth returns and increases debt vulnerability. Nonetheless, this threshold exhibits limited relevance in SSA contexts such as Ghana, where structural and institutional deficiencies disrupt the anticipated inverse relationship between debt and growth. Muruko-Jaezuruka and Birks (2024) contend that in nations with

limited institutional capacity, elevated public debt levels endure without expected growth benefits, indicating that conventional thresholds may be ineffective in these contexts. Ghana's increasing public debt, frequently denominated in foreign currency, subjects the nation to currency risk and interest rate fluctuations, and risks that are exacerbated by insufficient institutional oversight and fiscal indiscipline. The lack of empirical studies examining the relationship between institutional quality and debt ratios and debt sustainability constitutes a significant knowledge gap.

Institutional quality has become a critical determinant of debt trajectories, especially in fragile and transitional economies. In Ghana, inadequate institutional frameworks have frequently led to ineffective debt utilisation, unclear borrowing practices, and fiscal mismanagement. Kongo (2023) demonstrates a correlation between stronger institutions and improved fiscal outcomes, reduced debt distress, and increased public accountability. Kpegba et al. (2024) indicate that in Sub-Saharan African contexts marked by corruption, inadequate regulatory frameworks, and politicised public finance management, institutional fragility notably obstructs initiatives aimed at alleviating debt burdens. Although there is increasing acknowledgement of its significance, institutional quality continues to be predominantly regarded as an exogenous variable rather than a moderating factor that influences the relationship between macroeconomic indicators (such as GDP growth, exports, and debt ratios) and debt sustainability. Oversight in Ghana has constrained the explanatory capacity of current models and policy recommendations.

In addition, although the current empirical research offers important insights into the factors influencing debt sustainability, it frequently neglects the institutional context that influences economic outcomes in nations such as Ghana. This gap underscores the necessity for a more sophisticated and comprehensive analytical framework that elucidates the interaction between macroeconomic variables and institutional quality when assessing debt sustainability in SSA economies.

3. Methodology

This study employs a quantitative design to analyse the factors influencing debt sustainability in Ghana from 2008 to 2023. This study uses a multiple regression analysis to examine the impact of specific macroeconomic and fiscal indicators on debt sustainability, facilitating an empirical evaluation of the strength and direction of these relationships. This analytical method is suitable for assessing the causal effects of independent variables on a continuous dependent variable in a time-series framework.

Secondary data were obtained from reputable databases, specifically the World Bank and the Bank of Ghana, owing to their reliability, thoroughness, and significance to public finance and macroeconomic policies. Before conducting the regression analysis, the time-series characteristics of the variables were assessed through Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests to confirm stationarity and prevent spurious regression results.

Diagnostic tests such as assessments for multicollinearity, heteroscedasticity, and autocorrelation were performed to confirm the model assumptions and strengthen the reliability of the findings. Statistical estimations were conducted using EViews 12, which provides sophisticated tools for time-series econometric modelling and diagnostics. This methodological approach guarantees empirical reliability and underpins effective policy recommendations for sustainable debt management in Ghana.

4. Presentation of the Result

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics for the dependent and independent variables. The DST was used as a proxy for sustainability. GDP, public debt, and tax revenue were used as independent variables. Inflation and interest rates were used as control variables. The descriptive statistics of the data are presented in six columns: column one contains the variables, mean, standard deviation, minimum, median, maximum, skewness, and kurtosis.

Table 1. Descriptive Statistics

	DSEX	GDP	EXPT	INFR	INTR	INQTY	PDEBT
Mean	8.122438	0.056696	9.356606	15.48292	20.13021	1.791667	0.484842
Median	7.364198	0.051400	10.87022	12.02500	18.02083	2.500000	0.514800
Maximum	20.53881	0.140500	68.95905	41.51000	43.16667	10.00000	0.821200
Minimum	2.200461	0.005100	-127.5066	4.870000	12.66667	-16.00000	0.185100
Std. Dev.	5.169808	0.027720	33.71224	9.352421	7.040250	6.619991	0.181640
Skewness	0.946690	0.986814	-2.671153	1.751579	1.514666	-1.020304	0.195282
Kurtosis	3.152732	4.848268	12.87087	5.365156	5.640812	3.523639	2.209374
Observations	24	24	24	24	24	24	24

Source: Authors' Own creation

Table 1 presents descriptive statistics that elucidate the distribution and variability of the essential macroeconomic indicators pertinent to debt sustainability in Ghana. The debt service to export ratio (DSEX) averages 8.122, with a maximum of 20.539 and a minimum of 2.200, reflecting moderate variability in the nation's external debt servicing capacity. The average GDP growth is 0.056, with a range from 0.005 to 0.141, indicating subdued and uneven economic performance. Export growth demonstrates significant variability, with a mean of 9.357, maximum of 68.959, and minimum of 127.51, highlighting the volatility of Ghana's external trade. Inflation averages 15.453, ranging from 4.870 to 41.510, suggesting macroeconomic instability. The interest rate exhibited considerable variation, with an average of 20.130. A mean institutional quality score of 1.792 indicates significant governance deficiency. The average public debt ratio is 0.485, ranging from 0.185 to 0.821, indicating rising fiscal pressure.

Table 2. Results of Unit Root tests with ADF and P.P

Variables	Augmented Dickey-Fuller (ADF)		Phillips-Perron (P.P.)	
	Level	P. Value	Level	P. Value
DSEX	0.749031	0.8093	2.477906	0.1335
EXPT	6.789556	0.0000	6.789556	0.0000
GDP	3.166590	0.0355	3.166590	0.0355
PDEBT	1.220574	0.6453	0.948111	0.7537
INQTY	2.179337	0.2184	2.179337	0.2184
INFR	3.665775	0.0121	3.669354	0.0120
INTR	1.595830	0.4678	4.108042	0.0045

Source: Authors' Own creation

Table 2 presents the unit root test results derived from the augmented Dickey (ADF) and Phillips (PP) methodologies that assess the stationarity characteristics of the variables examined. The findings demonstrate that Gross Domestic Product (GDP), exports (EXPT), and the inflation rate (INFR) exhibit stationarity at level, with p-values significantly below the threshold of 0.05, in both the ADF (0.0355, 0.000, and 0.0120) and PP (0.0355, 0.000, and 0.0120) tests. This indicates that these variables lack unit roots and exhibit stability over time, rendering them appropriate for inclusion in level-based econometric

models, without the need for additional differencing.

The interest rate (INTR) exhibits mixed results; it is non-stationary according to the ADF test (p-value of 0.4678), but stationary under the PP test (p-value of 0.0045), indicating inconsistency in unit root diagnosis. This discrepancy requires careful interpretation and robustness checks. The debt service to export ratio (DSEX), public debt (PDEBT), and institutional quality (INQTY) exhibit non-stationarity at the level, as indicated by the ADF and PP tests, which yield p-values exceeding conventional significance thresholds. Thus, these variables require transformation via first differencing to achieve stationarity, thereby facilitating reliable econometric inference in later analyses.

Table 3. Results of Unit Root tests with ADF and P.P. - (1st Difference)

Variables	Augmented Dickey-Fuller (ADF)		Phillips-Perron (P.P.)	
	Level	P. Value	Level	P. Value
DST	5.012301	0.0010	10.05210	0.0000
TAR	3.611103	0.0146	3.946143	0.0068
INQTY	4.419528	0.0024	4.416880	0.0024

Source: Authors' Own creation

4.2 Regress Result

The regression analysis in Table 4 reveals that the interest rate and public debt significantly increase Ghana's debt service-to-export ratio, underscoring their critical role in external debt pressures. By contrast, GDP, inflation, and exports show no significant impact, suggesting a limited short-term influence of macroeconomic performance on debt sustainability.

Table 4. Regression Analysis Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXPT	0.018019	0.018432	0.977580	0.3412
GDP	-5.882017	26.28065	-0.223815	0.8254
INFR	-0.112060	0.071867	-1.559267	0.1363
INTR	0.486743	0.096729	5.032033	0.0001
PDEBT	13.26840	3.810813	3.481776	0.0027
C	-6.208968	3.615303	-1.717413	0.1031
R-squared	0.758321	Mean dependent var		8.122438
Adjusted R-squared	0.691188	S.D. dependent var		5.169808
F-statistic	11.29578	Durbin-Watson stat		0.765503
Prob(F-statistic)	0.000048			

Source: Authors' Own creation

The regression results in Table 4 provide essential insights into the macroeconomic factors influencing Ghana's debt service to export ratio (DSEX), an important measure of external debt sustainability. The analysis indicates that Gross Domestic Product (GDP), inflation rate (INFR), and exports (EXPT) have

both negative and positive effects on DSEX; however, these relationships lack statistical significance. GDP exhibits a negative coefficient ($\beta = 5.882$, $t = 0.224$, $p = 0.8254$), indicating a potential inverse relationship between economic growth and the burden of external debt services. However, the absence of statistical significance suggests that this effect was weak and independent of the current model. This may indicate the structural rigidity of Ghana's economy, wherein growth does not inherently lead to enhanced debt service capacity, particularly because of inefficient revenue mobilisation mechanisms and constrained fiscal space.

The inflation rate exhibits a negative yet statistically insignificant correlation with the DSEX ($\beta = 0.112$, $t = 1.559$, $p = 0.1363$). Inflation may diminish the real value of debt obligations; however, in Ghana, it likely indicates underlying macroeconomic instability that restricts fiscal consolidation and undermines confidence in monetary policy. This result indicates that inflation, while pertinent, does not directly influence external debt service ratios without mediation by additional structural or institutional factors.

Exports (EXPT) demonstrated a positive, yet statistically insignificant, impact on DSEX ($\beta = 0.018$, $t = 0.976$, $p = 0.3412$). This finding suggests that rising exports do not substantially alleviate Ghana's external debt service obligation. This can be attributed to the country's significant dependence on a limited array of primary commodity exports including gold and cocoa, which are susceptible to fluctuations in global prices. Consequently, an increase in export volumes may not guarantee adequate or stable earnings to mitigate debt-servicing pressures.

Conversely, interest rates (INTR) and public debt (PDEBT) exhibit statistically significant positive effects on DSEX, with coefficients of 0.487 ($t = 5.032$, $p < 0.001$) and 13.268 ($t = 3.482$, $p < 0.001$), respectively. The findings indicate that a one percent rise in the interest rate and public debt level is associated with increases of approximately 48.7 percent and 13.3 percent in the debt service-to-export ratio, respectively. This outcome is notably troubling, as it highlights the significant strain that increases borrowing costs and debt accumulation on Ghana's external repayment capacity, thereby heightening the risk of debt distress. The findings highlight the significance of effective debt management and interest rate stabilisation policies in maintaining external debt sustainability.

Table 5. The moderating Analysis Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXPT	0.007141	0.018991	0.376023	0.7116
GDP	-21.18355	27.03092	-0.783678	0.4440
INFR	-0.115761	0.069074	-1.675903	0.1120
INTR	0.474112	0.093258	5.083875	0.0001
PDEBT	9.676837	4.306300	2.247135	0.0382
NINQTY	0.313612	0.198047	1.583521	0.1317
C	-3.567983	3.852514	-0.926144	0.3673
R-squared	0.789387	Mean dependent var		8.122438
Adjusted R-squared	0.715053	S.D. dependent var		5.169808
F-statistic	10.61944	Durbin-Watson stat		0.947681
Prob(F-statistic)	0.000058			

Source: Authors' Own creation

Table 5 presents significant findings regarding the moderating influence of institutional quality on the relationship between public debt and the debt service-to-export ratio (DSEX) in Ghana. When

institutional quality is introduced as an interactive term in the regression model, the direct effect of public debt on DSEX retains statistical significance ($\beta = 9.677$, $t = 2.247$, $p = 0.0382$), suggesting that rising public debt continues to exert considerable pressure on Ghana's capacity for external debt servicing. This indicates that regardless of the institutional context, increasing public debt results in greater obligations in relation to export earnings, and consequently jeopardising debt sustainability.

The interaction term between public debt and institutional quality does not produce a statistically significant effect on DSEX ($\beta = 0.314$, $t = 1.584$, $p = 0.1317$). This finding indicates that institutional quality does not influence the relationship between public debt and external debt services. Improvements in governance, regulatory frameworks, and institutional effectiveness have not yet resulted in greater capacity to mitigate the negative effects of debt accumulation on export-driven debt services. This finding indicates potential deficiencies in the institutional mechanisms governing public financial management, underscoring the need for specific reforms to enhance institutional efficacy in debt management.

5. Discussion

The findings of this study provide detailed insights into the macroeconomic and institutional factors influencing Ghana's debt service-to-export ratio (DSEX), indicating both agreement with and deviation from the current empirical literature. The positive and statistically significant relationship between interest rates and DSEX supports the assertions of Calderón and Nguyen (2015), who argued that elevated domestic interest rates raise debt servicing costs by increasing the burden of refinancing and external borrowing. This finding aligns with Presbitero's (2012) observation that interest rate volatility, especially in fiscally fragile economies, undermines debt sustainability directly.

The notable positive impact of public debt on DSEX supports the debt overhang hypothesis (Krugman, 1988), which asserts that substantial debt levels hinder fiscal flexibility and intensify repayment pressure. This finding aligns with the observations of Boakye and Atuilik (2024), who note that rising debt levels in Ghana have increasingly limited fiscal space, leading to elevated debt servicing costs.

This study indicates that GDP growth, inflation, and exports do not have statistically significant effects on DSEX, which contrasts with established economic theory and prior empirical research. Reinhart and Rogoff (2010) indicate that increased GDP growth is generally linked to better debt sustainability, which is attributed to augmented fiscal revenue. The insignificance observed in this study can be linked to Ghana's structural reliance on unstable commodity exports, which restricts the conversion of growth into sustainable debt metrics, as Ye and Guo (2024) note.

Furthermore, although the export-to-GDP ratio is often referenced as a safeguard against external debt vulnerabilities (Gomez-Gonzalez et al., 2023), the lack of significance observed in this analysis may indicate a nation's restricted export diversification and susceptibility to external price fluctuations, especially in the cocoa and gold sectors. Moreover, while institutional quality was anticipated to influence the relationship between public debt and DSEX, this effect proved statistically insignificant. This is consistent with the findings of Eliwa et al. (2021), who contend that, in numerous sub-Saharan African countries, weak institutions do not possess the functional capacity to impose significant checks on debt accumulation, thereby constraining their moderating effect. The findings highlight the intricate nature of debt dynamics in Ghana and indicate the necessity for comprehensive policy interventions focused on interest rate management, debt structure optimisation, and institutional reform.

Theoretical Implication

These findings provide substantial theoretical support for the Debt Overhang Hypothesis, which asserts that high levels of public debt hinder economic efficiency and growth by deterring investment and increasing debt service obligations. The notable positive correlation between public debt and the debt service to export ratio (DSEX) indicates that Ghana's increasing debt stock intensifies fiscal stress, which is consistent with Krugman (1988). The findings corroborate Solvency Constraint Theory, indicating that a nation's capacity to fulfil long-term debt obligations is hindered when interest rates exceed growth, as demonstrated by the substantial influence of interest rates on DSEX.

This study indicates a theoretical divergence from the Institutional Theory. While robust institutions are anticipated to mitigate the negative impacts of public debt, the quality of institutions does not have a

significant effect on DSEX, thereby questioning the assumptions posited by North (1990) and indicating that Ghana's institutional framework may not possess the resilience necessary to meaningfully influence debt dynamics. This necessitates reassessment of the functional significance of institutions in economies with substantial debt levels.

Practical and Policy Implication

The findings emphasise the necessity for effective monetary and fiscal policies to address increasing public debt and interest rates, which considerably raise debt service burdens. Policymakers ought to prioritise concessional borrowing, improve domestic revenue mobilisation, and execute debt restructuring as needed. Enhancing public financial management systems and institutional oversight are essential for improving debt sustainability. Furthermore, it is essential to implement export diversification strategies to reduce external vulnerabilities. These implications necessitate coordinated macroeconomic reforms that enhance fiscal discipline and strengthen institutional capacity to ensure that economic gains lead to a reduction in debt pressure in the long term.

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