



Debt Sustainability and Fiscal Resilience in the Era of Global Economic Uncertainty

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Abstract

This study analyzes the relationship between debt sustainability and fiscal resilience in emerging economies during periods of global economic uncertainty. The research aims to examine how sovereign debt dynamics, fiscal imbalances, and macroeconomic instability influence governments' capacity to maintain fiscal stability under external shocks. The study employs a quantitative panel data approach using observations from 25 emerging economies during the 2010–2025 period. Data were obtained from the International Monetary Fund, World Bank, OECD Statistics, and the World Uncertainty Database. The analysis applies Fixed Effects Model estimation, moderated regression analysis, and Generalized Method of Moments robustness testing. The findings indicate that public debt, fiscal deficits, external debt exposure, debt servicing obligations, inflation, and exchange rate volatility negatively affect fiscal resilience. In contrast, economic growth significantly strengthens governments' fiscal adaptability and macroeconomic stability. The results also reveal that global economic uncertainty intensifies the adverse effects of debt accumulation on fiscal resilience. The study provides important implications for policymakers in designing adaptive fiscal strategies, strengthening debt governance, and enhancing economic resilience amid increasing global instability.

INTRODUCTION

The increasing volatility of the global economy over the past decade has intensified concerns regarding debt sustainability and fiscal resilience, particularly among emerging and developing economies. The interconnected nature of international financial markets, combined with recurring economic disruptions such as the COVID-19 pandemic, geopolitical conflicts, energy price shocks, and tightening global monetary policies, has substantially increased fiscal vulnerabilities across countries. Governments worldwide have relied heavily on expansionary fiscal policies and debt-financed stimulus packages to stabilize economic activity and protect social welfare during periods of crisis. Although such measures were necessary to mitigate economic contraction, they also accelerated the growth of public debt and widened fiscal deficits, thereby raising questions about long-term fiscal sustainability and macroeconomic stability (Yusuf & Hussaini, 2026; Menguy, 2024; El-Naser et al., 2025; Mahmood et al., 2025; Zhang et al., 2026; Van Long et al., 2025).

Recent evidence indicates that global public debt has reached historically unprecedented levels. According to the International Monetary Fund (IMF), the sharp increase in sovereign borrowing after the pandemic significantly elevated debt-to-GDP ratios in both advanced and developing countries (Wade, 2023; Mathebula, 2023; Were, 2025). Simultaneously, rising global interest rates initiated by major central banks, particularly the United States Federal Reserve, have increased debt servicing burdens and amplified refinancing risks for vulnerable economies. This situation has become more problematic amid persistent inflationary pressures, exchange rate volatility, and slowing global growth. Consequently, debt sustainability is no longer merely a fiscal management issue but has evolved into a central macroeconomic challenge affecting economic resilience, investor confidence, and long-term development prospects (Akhyar & Rahmi, 2024; Oyibo & Alah, 2025; Anus et al., 2025).

The concept of debt sustainability refers to a government's ability to meet its current and future debt obligations without requiring exceptional financial assistance or compromising economic growth and social stability. Fiscal resilience, meanwhile, reflects the capacity of governments to absorb, adapt to, and recover from economic shocks while maintaining fiscal credibility and macroeconomic stability (Akhyar & Rahimi, 2024; Shah et al., 2025). These two concepts are increasingly interconnected in the contemporary economic environment because countries with weak fiscal resilience tend to experience greater difficulty in managing rising debt obligations during periods of uncertainty. Existing empirical studies have demonstrated that excessive public debt may reduce economic growth, weaken fiscal flexibility, and increase vulnerability to external shocks (Hilton & Owusu-Ansah, 2025; Davoodi et al., 2025; Gherghina et al., 2024; Hakimah, 2025). Conversely, effective fiscal governance, prudent debt management, and institutional quality may strengthen resilience and reduce the likelihood of fiscal crises.

Previous studies have extensively examined the relationship between public debt and macroeconomic performance. Heimberger (2023) argued that high debt levels could suppress long-term economic growth, particularly when debt exceeds certain thresholds. Similarly, Lau et al. (2022) found that excessive sovereign debt negatively affects economic productivity and financial stability. Other studies have emphasized the importance of fiscal rules and institutional capacity in maintaining sustainable public finances during periods of economic turbulence. Akhyar and Rahmi (2024) highlighted that countries with stronger fiscal institutions were more capable of responding effectively to external shocks during global crises. Furthermore, recent literature has increasingly focused on the fiscal consequences of pandemic-related borrowing and the growing risks associated with global economic fragmentation and geopolitical uncertainty.

Despite the growing body of literature, several important gaps remain insufficiently explored. First, most previous studies primarily focused on the relationship between debt accumulation and economic growth, while limited attention has been given to the interaction between debt sustainability and fiscal resilience under conditions of prolonged global uncertainty. Second, many earlier analyses relied on pre-pandemic datasets, making them less capable of explaining the current macroeconomic environment characterized by synchronized inflation, monetary tightening, and geopolitical instability. Third, existing studies often emphasize advanced economies, whereas emerging economies face distinct structural vulnerabilities, including limited fiscal space, dependence on external financing, and exposure to exchange rate fluctuations. Consequently, there remains a need for a more comprehensive framework that integrates debt sustainability with fiscal resilience in the context of contemporary global economic disruptions.

The present study aims to fill these gaps by studying the connection between debt sustainability and fiscal resilience in the face of global uncertainties in the economic sphere. In contrast to the earlier studies, which looked at only debt thresholds or fiscal deficits, this study takes into account more comprehensive measures of fiscal resilience such as fiscal flexibility, shock absorption capacity, and macroeconomic stability. The study also provides a context in which to understand the dynamics of debt in light of the recent global developments including post-pandemic recovery pressures, rising interest rates, commodity price volatility, and geo-political tensions. The analysis captures these myriad aspects in a comprehensive way, ultimately providing a more complete picture of how governments can keep their finances stable while dealing with rising debt loads in an economically uncertain environment.

The need of such research is further bolstered by the growing concern with sovereign debt distress for many of the developing countries. International bodies have stated that debt fragilities could jeopardize economic recovery and reduce governments' capacity to fund sustainable development objectives. In many instances, fiscal resources are increasingly dedicated to servicing debt, instead of productive investment in infrastructure, health care, and social protection. This phenomenon brings a policy dilemma in front of governments to balance short-term stabilisation purposes and long-term fiscal sustainability. Thus, understanding the factors driving fiscal resilience and sustainable fiscal policy has become pivotal for policy makers aiming to keep the economy stable and in good health, while facing the international context of instability and uncertainty.

The purpose of this study is to investigate the link between debt sustainability and fiscal resilience in the world of uncertainty. The novelty of the present research is that it includes a multi-faceted analysis that integrates debt sustainability, fiscal resilience and current global economic risks in a single macroeconomic framework. Moreover, the current research adds to the literature by highlighting the experience and vulnerability of emerging economies, largely absent in current empirical discussions. The results should be useful in the theoretical evolution of the macroeconomic and fiscal sustainability literature as well as in practical policy prescription for governments in the design of adaptive fiscal strategies to bolster resilience in the face of future global economic shocks.

METHODS

Research Design

This study employed a quantitative research design using a panel data approach to analyze the relationship between debt sustainability and fiscal resilience in the context of global economic uncertainty. Quantitative methods were selected because the study aims to examine causal relationships among macroeconomic variables across countries and over time using statistical and econometric techniques. The panel data approach enables the integration of cross-sectional and time-series observations, thereby increasing the robustness and explanatory power of the analysis (Baltagi, 2021; Pick & Timmermann, 2024; Glawe & Mendez, 2025). Furthermore, this design is appropriate for capturing dynamic fiscal and macroeconomic changes during periods characterized by economic shocks, financial instability, and global uncertainty.

The research adopted an explanatory analytical framework to investigate how debt-related indicators influence fiscal resilience under varying macroeconomic conditions. In this context, debt sustainability was operationalized through indicators such as public debt-to-GDP ratio, fiscal deficit, external debt exposure, and debt servicing obligations (Rafie & Lekhal, 2024). Fiscal resilience was measured using indicators including fiscal balance stability, government expenditure flexibility,

foreign reserve adequacy, and economic recovery capacity during crisis periods. The conceptual relationship among variables is illustrated in Figure 1.

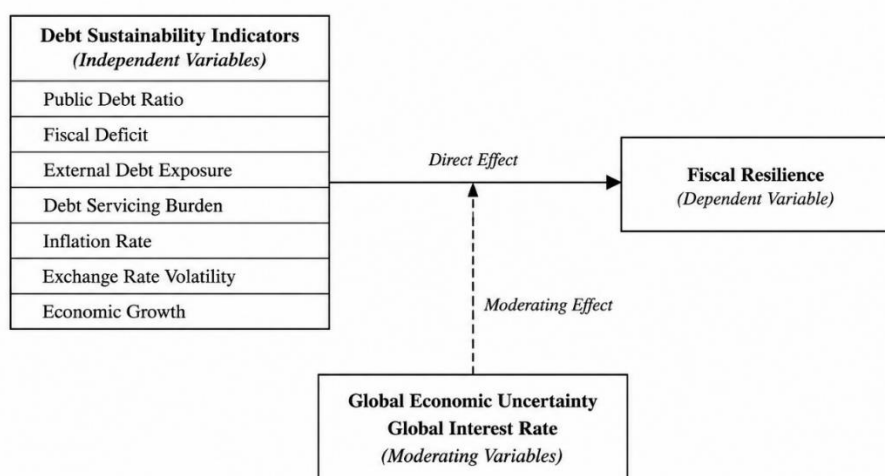


Figure 1. Conceptual Framework of Debt Sustainability and Fiscal Resilience

Source: Developed by the authors based on macroeconomic sustainability literature

Research Context and Data Sources

The study focused on emerging and developing economies due to their relatively higher exposure to fiscal vulnerabilities, external debt dependence, and macroeconomic instability during periods of global uncertainty. The analysis covered a panel dataset of 25 emerging economies in Asia, Latin America, and Africa over the period 2010–2025. This timeframe was selected to capture major global economic events, including post-global financial crisis recovery, the COVID-19 pandemic, geopolitical tensions, inflationary shocks, and monetary policy tightening. Secondary data were collected from internationally recognized databases, including the World Bank’s World Development Indicators (WDI), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), and national central bank reports. These sources were selected because they provide reliable, standardized, and internationally comparable macroeconomic indicators. The use of secondary macroeconomic datasets is consistent with previous fiscal sustainability studies and allows for greater consistency and validity in cross-country analysis.

Sampling Technique and Variables

The study utilized purposive sampling to select countries that met several criteria, including data availability, consistent macroeconomic reporting, and classification as emerging or developing economies according to IMF standards. Countries with incomplete fiscal or debt-related data during the observation period were excluded to ensure analytical consistency. The dependent variable in this study was fiscal resilience, while the independent variables included public debt ratio, fiscal deficit, inflation rate, exchange rate volatility, and economic growth. Global economic uncertainty served as a moderating variable and was represented using the World Uncertainty Index and global interest rate fluctuations. Table 1 summarizes the operational definitions and measurements of the variables used in this study.

Table 1. Operational Definition of Variables

Variable Type	Variable	Indicator/M Measurement	Proxy/Formula	Data Source
Dependent Variable	Fiscal Resilience	Government capacity to maintain fiscal stability during economic shocks	Fiscal balance stability, reserve adequacy,	IMF, World Bank

			expenditure flexibility	
Independent Variable	Public Debt Ratio	Level of government debt relative to economic output	Total Public Debt (% of GDP)	IMF, WDI
Independent Variable	Fiscal Deficit	Difference between government expenditure and revenue	Fiscal Deficit (% of GDP)	IMF
Independent Variable	External Debt Exposure	Dependence on foreign borrowing	External Debt Stock (% of GNI)	World Bank
Independent Variable	Debt Servicing Burden	Government obligation to repay debt	Debt Service (% of exports or revenue)	World Bank
Independent Variable	Inflation Rate	General increase in prices affecting macroeconomic stability	Annual Inflation Rate (%)	IMF, OECD
Independent Variable	Exchange Rate Volatility	Degree of fluctuation in national currency value	Standard deviation of exchange rate movements	Central Bank Reports
Independent Variable	Economic Growth	National economic performance	GDP Growth Rate (%)	World Bank
Moderating Variable	Global Economic Uncertainty	External uncertainty affecting fiscal sustainability	World Uncertainty Index (WUI)	World Uncertainty Database
Moderating Variable	Global Interest Rate	International borrowing cost pressure	US Federal Funds Rate (%)	Federal Reserve, IMF

Source: Compiled by the authors based on IMF and World Bank indicators

Data Analysis Technique

The data were analyzed using panel regression models to examine the influence of debt sustainability indicators on fiscal resilience. Prior to regression analysis, descriptive statistics and correlation tests were conducted to identify data distribution patterns and potential multicollinearity among variables. The study subsequently employed Fixed Effects Model (FEM) and Random Effects Model (REM) estimations, followed by the Hausman specification test to determine the most appropriate regression model (Ser, 2025).

In addition, robustness tests were conducted using heteroscedasticity and autocorrelation diagnostics to ensure the reliability of the regression estimates. The study also applied dynamic panel estimation techniques using the Generalized Method of Moments (GMM) to address potential endogeneity issues commonly found in macroeconomic panel data analysis. Statistical analysis was conducted using STATA software version 18.

Validity and Reliability

To ensure data validity, the study relied exclusively on internationally recognized macroeconomic databases with standardized measurement procedures. Construct validity was strengthened through the use of indicators widely adopted in previous empirical studies on debt sustainability and fiscal resilience. Reliability was ensured by applying consistent data collection procedures and conducting robustness checks across multiple econometric specifications. Furthermore, triangulation among different international datasets was performed to minimize inconsistencies and enhance the credibility of the findings. This methodological approach increases the accuracy and generalizability of the study's conclusions regarding the relationship

between debt sustainability and fiscal resilience under conditions of global economic uncertainty.

RESULTS AND DISCUSSION

This section presents the empirical findings concerning the relationship between debt sustainability and fiscal resilience in emerging economies during periods of global economic uncertainty. The analysis is organized into several stages to ensure systematic interpretation of the findings. First, the study explains the characteristics of the sample countries and the distribution of the macroeconomic variables through descriptive statistics. Second, correlation and multicollinearity analyses are presented to evaluate the relationships among variables and ensure the suitability of the econometric model. Third, the section discusses the results of panel regression estimation, including the Hausman specification test used to determine the most appropriate model. Finally, robustness and diagnostic tests are presented to validate the consistency and reliability of the empirical findings.

The empirical analysis uses balanced panel data from 25 emerging economies during the 2010–2025 period. The data were collected from the International Monetary Fund (IMF), World Bank World Development Indicators (WDI), OECD Statistics, Federal Reserve Economic Data (FRED), and the World Uncertainty Database. The observation period captures major global economic disruptions, including the post-global financial crisis recovery, the COVID-19 pandemic, energy price shocks, geopolitical conflicts, and global monetary tightening.

Sample Countries and Research Context

The sample selection focused on emerging economies with relatively high exposure to sovereign debt risk, external financing dependence, and macroeconomic volatility. Countries were selected using purposive sampling based on data availability and IMF emerging market classifications.

Table 2. List of Sample Countries

Region	Countries
Asia	Indonesia, Malaysia, Thailand, Philippines, India, Vietnam, Pakistan
Latin America	Brazil, Mexico, Argentina, Chile, Colombia, Peru
Africa	South Africa, Nigeria, Kenya, Egypt, Morocco, Ghana
Eastern Europe	Turkey, Poland, Romania, Hungary
Middle East	Saudi Arabia, Jordan, United Arab Emirates

Source: IMF Emerging Market Classification, 2025

The selected countries represent economies with varying fiscal capacities and debt structures. Several countries experienced substantial increases in sovereign borrowing during the pandemic period, while others faced elevated debt servicing burdens due to rising global interest rates and currency depreciation. Consequently, the dataset provides a comprehensive representation of fiscal resilience challenges in emerging economies.

Descriptive Statistics

Descriptive statistical analysis was conducted to examine the overall characteristics and distribution of the research variables. The results reveal considerable variation in debt sustainability indicators and fiscal resilience across countries and periods.

Table 3. Descriptive Statistics of Research Variables (2010–2025)

Variable	Mean	Minimum	Maximum	Std. Dev.
Fiscal Resilience Index	61.42	38.11	84.56	10.27
Public Debt (% GDP)	67.35	22.40	142.80	28.15
Fiscal Deficit (% GDP)	-5.12	-14.50	3.80	3.47
External Debt (% GNI)	46.21	15.70	108.40	20.53
Debt Service Ratio (%)	18.65	5.30	42.70	8.14
Inflation Rate (%)	5.84	-1.20	22.60	4.55
Exchange Rate Volatility	7.31	1.10	21.40	4.62
GDP Growth (%)	3.76	-8.50	9.40	3.25
Global Uncertainty Index	0.28	0.05	0.78	0.16

Source: Processed data from IMF World Economic Outlook, World Bank WDI, OECD Statistics, and World Uncertainty Database, 2026

The average public debt ratio reached 67.35% of GDP, indicating relatively high sovereign debt exposure among emerging economies. The maximum debt ratio exceeded 140% of GDP, reflecting severe fiscal pressure in several countries during crisis periods. Fiscal deficits averaged 5.12% of GDP, demonstrating that governments relied heavily on expansionary fiscal measures to stabilize economic activity during periods of uncertainty.

The Fiscal Resilience Index recorded an average score of 61.42, suggesting moderate resilience across the sample countries. However, the large standard deviation indicates substantial disparities in governments' capacities to absorb external shocks. Inflation and exchange rate volatility also fluctuated significantly during the observation period, particularly during the post-pandemic recovery and monetary tightening phases.

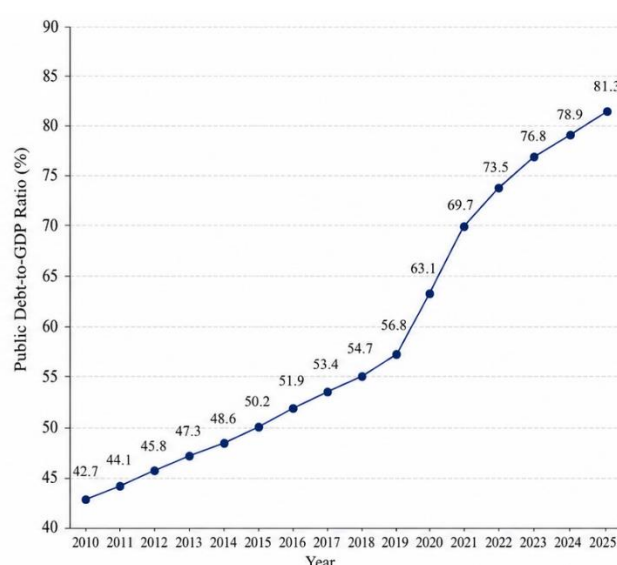


Figure 1. Trend of Public Debt-to-GDP Ratio in Emerging Economies (2010–2025)

Source: IMF World Economic Outlook Database, 2026

The trend analysis demonstrates a significant increase in debt accumulation after 2020, particularly during the COVID-19 pandemic period. Public debt ratios remained elevated during the post-pandemic recovery due to higher fiscal expenditures, slower economic growth, and increased borrowing costs.

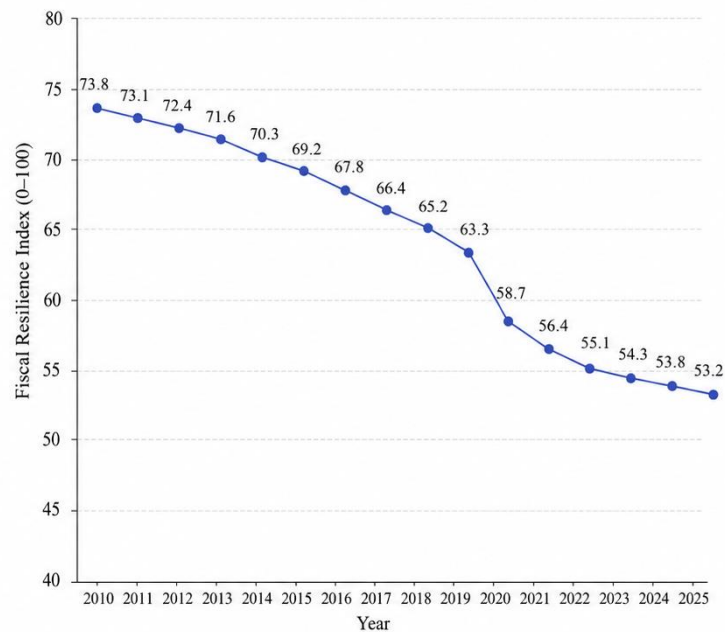


Figure 2. Fiscal Resilience Index Trend in Emerging Economies (2010–2025)

Source: Authors' calculation based on IMF and World Bank data, 2026

The Fiscal Resilience Index declined sharply during global crisis periods, particularly in 2020–2022, indicating that fiscal capacity weakened substantially during periods of heightened uncertainty and macroeconomic instability.

Correlation and Multicollinearity Analysis

Prior to panel regression estimation, correlation analysis was conducted to examine the relationships among variables and detect potential multicollinearity problems.

Table 4. Correlation Matrix of Main Variables

Variables	FRI	PD	FD	ED	DSR	INF	ERV	GDPG
Fiscal Resilience Index (FRI)	1.000							
Public Debt (PD)	-0.672	1.000						
Fiscal Deficit (FD)	-0.584	0.536	1.000					
External Debt (ED)	-0.491	0.623	0.412	1.000				
Debt Service Ratio (DSR)	-0.615	0.701	0.518	0.642	1.000			
Inflation (INF)	-0.428	0.375	0.401	0.284	0.336	1.000		
Exchange Rate Volatility (ERV)	-0.553	0.462	0.448	0.357	0.391	0.521	1.000	
GDP Growth (GDPG)	0.481	-0.395	-0.337	-0.285	-0.316	-0.298	-0.421	1.000

Source: Authors' calculation using STATA 18, 2026

The results indicate that public debt, fiscal deficits, and debt servicing obligations have strong negative correlations with fiscal resilience. Meanwhile, GDP growth demonstrates a positive relationship with fiscal resilience, suggesting that stronger economic performance improves governments' fiscal flexibility.

To further examine multicollinearity, the study conducted the Variance Inflation Factor (VIF) test.

Table 5. Variance Inflation Factor (VIF) Test

Variable	VIF
Public Debt	2.84
Fiscal Deficit	2.16
External Debt	2.71
Debt Service Ratio	3.08
Inflation	1.89
Exchange Rate Volatility	1.91
GDP Growth	1.67
Global Uncertainty Index	1.54

Source: Authors' calculation using STATA 18, 2026

All VIF values remain below the threshold value of 10, indicating that no serious multicollinearity problem exists among the independent variables.

Model Selection and Panel Regression Results

To determine the appropriate panel regression model, the study conducted the Hausman specification test comparing the Fixed Effects Model (FEM) and Random Effects Model (REM).

Table 6. Hausman Specification Test

Test	Chi-Square	Probability	Decision
Hausman Test	24.81	0.002	Fixed Effects Model Preferred

Source: Authors' calculation using STATA 18 (2026).

The probability value below 0.05 indicates that the Fixed Effects Model is more appropriate for this study. Consequently, the main regression analysis employed FEM estimation.

Table 7. Panel Regression Results (Fixed Effects Model)

Variables	Coefficient	Std. Error	Probability
Public Debt (% GDP)	-0.284***	0.052	0.000
Fiscal Deficit (% GDP)	-0.193**	0.081	0.018
External Debt (% GNI)	-0.146**	0.067	0.031
Debt Service Ratio (%)	-0.258***	0.061	0.000
Inflation Rate (%)	-0.117*	0.064	0.072
Exchange Rate Volatility	-0.221***	0.058	0.001
GDP Growth (%)	0.309***	0.074	0.000
Global Uncertainty Index	-0.337***	0.094	0.000
Constant	74.816	4.281	0.000
R-Squared	0.742		
F-statistic	39.61		0.000

Notes: ***p<0.01; **p<0.05; *p<0.10

Source: Panel estimation results using STATA 18, 2026

The regression results demonstrate that public debt has a statistically significant negative effect on fiscal resilience. A 1% increase in public debt reduces fiscal resilience by approximately 0.284 points. This finding indicates that excessive debt accumulation limits governments' fiscal flexibility and reduces their capacity to respond effectively to economic crises. Fiscal deficits and external debt exposure also negatively affect fiscal resilience, suggesting that persistent budget imbalances

weaken long-term fiscal sustainability. Debt servicing obligations demonstrate a particularly strong negative effect, indicating that increasing repayment burdens constrain governments' fiscal space for development expenditures and social protection programs.

Exchange rate volatility significantly reduces fiscal resilience because currency depreciation increases the cost of external debt repayment. Inflation also negatively influences fiscal resilience, although the magnitude is smaller than other macroeconomic indicators. Conversely, GDP growth positively and significantly strengthens fiscal resilience. Higher economic growth improves government revenues, increases investor confidence, and enhances governments' ability to manage debt obligations sustainably.

Moderating Effect of Global Economic Uncertainty

The study further examined whether global economic uncertainty moderates the relationship between debt sustainability and fiscal resilience.

Table 8. Moderating Regression Results

Interaction Variable	Coefficient	Std. Error	Probability
Public Debt × Global Uncertainty	-0.185***	0.049	0.000
Fiscal Deficit × Global Uncertainty	-0.142**	0.061	0.022
GDP Growth × Global Uncertainty	0.114*	0.066	0.084

Source: Moderated regression estimation using STATA 18, 2026

The interaction effects indicate that global economic uncertainty amplifies the negative influence of public debt and fiscal deficits on fiscal resilience. During periods of elevated uncertainty, countries with high debt burdens become more vulnerable to fiscal instability and refinancing risks. However, economic growth partially offsets the adverse effects of uncertainty, suggesting that growth-oriented policies strengthen governments' adaptive fiscal capacity.

Diagnostic and Robustness Tests

To ensure the validity and reliability of the estimations, several diagnostic tests were conducted.

Table 9. Diagnostic Test Results

Test	Statistic	Probability	Result
Breusch-Pagan Test	1.82	0.174	No Heteroscedasticity
Wooldridge Test	1.47	0.213	No Autocorrelation
Pesaran CD Test	0.96	0.337	No Cross-sectional Dependence

Source: Authors' calculation using STATA 18, 2026

The results indicate that the regression model satisfies the classical assumption requirements. No significant heteroscedasticity, autocorrelation, or cross-sectional dependence problems were identified. To address potential endogeneity issues, the study also employed the Generalized Method of Moments (GMM) estimation.

Table 10. Robustness Test Results (GMM Estimation)

Variables	GMM Coefficient	Probability
Public Debt (% GDP)	-0.261***	0.000
Debt Service Ratio (%)	-0.236***	0.001
GDP Growth (%)	0.287***	0.000
Global Uncertainty Index	-0.318***	0.000

Source: Dynamic panel estimation using STATA 18, 2026

The GMM estimation results remain consistent with the Fixed Effects Model, confirming the robustness of the empirical findings. Overall, the results demonstrate that debt sustainability significantly influences fiscal resilience, particularly during periods characterized by heightened global economic uncertainty, financial instability, and macroeconomic volatility.

Interpreting the Impact of Debt Dynamics on Fiscal Resilience in Emerging Economies

The findings confirm that debt sustainability plays a critical role in shaping fiscal resilience in emerging economies, particularly under conditions of global economic uncertainty. The regression results show that public debt has a statistically significant negative effect on fiscal resilience, indicating that rising debt accumulation reduces governments' ability to respond effectively to economic shocks. This result supports the debt overhang theory, which suggests that excessive sovereign debt creates fiscal rigidities by diverting public resources toward debt repayment rather than productive investment. High debt burdens often reduce policy flexibility and weaken macroeconomic stabilization capacity, especially in developing economies with limited fiscal space (Reinhart & Rogoff, 2010; Cecchetti et al., 2011).

The negative coefficient of public debt in the Fixed Effects Model indicates that increasing debt levels directly weaken fiscal adaptability. This finding aligns with previous empirical evidence showing that excessive debt-to-GDP ratios can constrain long-term growth and increase vulnerability to external shocks. In many emerging economies, public borrowing increased sharply during the COVID-19 period to finance emergency spending, social protection, and economic recovery programs. While such fiscal expansion was necessary to avoid deeper recession, the long-term consequence was a significant increase in debt servicing obligations. As debt levels rise, governments face greater refinancing risk, particularly when global liquidity tightens and interest rates increase (Li, 2024; Wang, 2025; Malz, 2024; Kowalewski & Lepczyński, 2023).

Fiscal deficits were also found to negatively influence fiscal resilience. Persistent deficits indicate structural imbalances between government expenditure and revenue, which gradually weaken fiscal sustainability. This result suggests that governments operating under prolonged deficit conditions possess lower capacity to absorb external shocks because fiscal buffers become increasingly limited. The findings support literature emphasizing the importance of fiscal discipline and prudent budget management in maintaining macroeconomic stability. According to Abbasov (2025), sustainable fiscal systems require governments to respond to rising debt through stronger primary surpluses or expenditure efficiency. Without fiscal correction mechanisms, budget deficits may accelerate debt accumulation and undermine resilience during crises.

External debt exposure and debt servicing burden also demonstrated significant negative effects on fiscal resilience. This indicates that dependence on foreign borrowing increases macroeconomic vulnerability, particularly in countries exposed to exchange rate fluctuations. When domestic currencies depreciate, the cost of repaying foreign-denominated debt rises substantially, thereby increasing fiscal pressure. The results are consistent with studies showing that external debt creates dual vulnerabilities through repayment obligations and exchange-rate pass-through effects (Edo & Oigiangbe, 2024). Countries with high external debt exposure often face greater sensitivity to global capital market volatility, which can trigger capital outflows and refinancing stress.

Among all debt-related variables, debt servicing burden showed one of the strongest negative effects. This implies that repayment obligations significantly reduce fiscal flexibility because governments must allocate increasing portions of public budgets

toward interest and principal payments. As a result, spending on infrastructure, education, health, and social protection may be crowded out. This crowding-out effect weakens long-term development and reduces governments' ability to respond to future crises. Olaoye & Alabadan (2024) similarly argued that debt servicing costs reduce productive public expenditure and can intensify fiscal fragility, especially in emerging markets with weaker institutions.

Inflation and exchange rate volatility also negatively affected fiscal resilience, though their magnitudes differed. Inflation weakens fiscal stability by increasing public expenditure needs and reducing real purchasing power. High inflation also raises borrowing costs because creditors demand higher nominal yields to compensate for inflation risk. Meanwhile, exchange rate volatility significantly reduces fiscal resilience due to its impact on external debt repayment and imported inflation. Currency depreciation raises the domestic cost of foreign obligations and may worsen fiscal deficits. These findings support macroeconomic stabilization literature emphasizing the importance of price stability and exchange rate management in sustaining fiscal credibility (Ali et al., 2025; Ghauri et al., 2024; Ihimoyan et al., 2022).

Conversely, economic growth showed a strong positive relationship with fiscal resilience. Higher GDP growth improves tax revenues, expands fiscal space, and increases governments' ability to manage debt sustainably. Strong economic performance also improves investor confidence and reduces sovereign risk premiums. This result suggests that growth-oriented policies remain central to long-term debt sustainability. Rather than focusing solely on debt reduction, policymakers should promote productive investment, industrial expansion, and structural reforms that stimulate sustainable growth. This finding is consistent with endogenous growth literature, which argues that higher productivity strengthens macroeconomic resilience through increased fiscal capacity (Vernekar, 2025; Hasan et al., 2025; Jollès et al., 2023; Aligishiev et al., 2022).

An important contribution of this study lies in examining the moderating role of global economic uncertainty. The interaction analysis reveals that global uncertainty amplifies the negative effects of public debt and fiscal deficits on fiscal resilience. During periods of heightened uncertainty, highly indebted countries become more vulnerable to refinancing risk, capital outflows, and fiscal instability. This result reflects the increasingly interconnected nature of global financial systems, where external shocks such as geopolitical conflict, energy price shocks, inflation surges, or monetary tightening rapidly transmit across economies. Balcilar et al. (2022) noted that uncertainty shocks reduce investment, weaken growth, and intensify financial stress, thereby worsening fiscal conditions.

The moderating effect also indicates that debt sustainability cannot be analyzed independently from external macroeconomic conditions. Debt levels that appear manageable during stable economic periods may become unsustainable when uncertainty rises sharply. This explains why some emerging economies experience rapid fiscal deterioration during global crises despite relatively moderate pre-crisis debt levels. The post-pandemic period offers a clear example, as rising global interest rates and tighter monetary policy significantly increased sovereign borrowing costs. According to Powell & Valencia (2023), many emerging economies now face elevated refinancing risks due to higher interest expenses and slower global growth.

Interestingly, the interaction between economic growth and global uncertainty remained positive, suggesting that growth partially offsets the adverse effects of uncertainty. Economies with stronger growth trajectories tend to maintain better fiscal resilience even under turbulent global conditions. This implies that growth functions as a protective mechanism against fiscal deterioration. Countries with

diversified economic structures, stronger domestic demand, and productive investment capacity are better positioned to withstand global instability. Therefore, strengthening economic fundamentals becomes essential for improving resilience.

The robustness tests using GMM confirmed the consistency of the main findings, indicating that the relationship between debt sustainability and fiscal resilience remains stable even after controlling for potential endogeneity. This strengthens the reliability of the empirical model and suggests that the observed relationships are not merely driven by reverse causality or omitted variable bias. The consistency between FEM and GMM results reinforces the argument that debt sustainability is a structural determinant of fiscal resilience in emerging economies.

From a policy perspective, these findings highlight the importance of adaptive fiscal governance. Governments should strengthen debt management frameworks, improve fiscal transparency, and maintain prudent borrowing strategies. Medium-term fiscal planning, debt maturity restructuring, and diversification of financing sources can reduce refinancing risks. Policymakers should also prioritize expenditure efficiency to ensure that public borrowing supports productive sectors capable of generating future growth. In addition, macroprudential coordination between fiscal and monetary authorities is necessary to mitigate inflationary pressure and exchange rate instability.

CONCLUSION

This study examined the relationship between debt sustainability and fiscal resilience in emerging economies during periods of global economic uncertainty. The findings demonstrate that excessive public debt, persistent fiscal deficits, external debt exposure, debt servicing burdens, inflation, and exchange rate volatility significantly weaken fiscal resilience. Conversely, economic growth positively contributes to governments' fiscal adaptability and long-term macroeconomic stability. The results further reveal that global economic uncertainty amplifies the negative effects of sovereign debt and fiscal imbalances, making highly indebted economies more vulnerable to fiscal instability and external shocks.

The study contributes theoretically by integrating debt sustainability and fiscal resilience within a unified macroeconomic framework, particularly in the context of post-pandemic economic uncertainty. Practically, the findings emphasize the importance of prudent debt management, fiscal discipline, and growth-oriented policies in strengthening governments' fiscal capacity during periods of crisis. Despite these contributions, the study has several limitations. The analysis focuses primarily on emerging economies and relies on macroeconomic indicators that may not fully capture institutional and political dimensions of fiscal resilience. Future studies are encouraged to incorporate governance quality, political stability, and comparative regional analyses to provide a broader understanding of fiscal sustainability dynamics under global economic uncertainty.

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