Vilnius University Press

Contents lists available at Vilnius University Press

Ekonomika
2025, vol. 104(4), pp. 62–77

ISSN 1392-1258 eISSN 2424-6166
DOI: https://doi.org/10.15388/Ekon.2025.104.4.4

The Impact of Political Institutions on Fiscal Sustainability in NMS 11 Countries: Mediating Effects of Economic Reforms

Mehmed Ganic*

International University of Sarajevo, Bosnia and Herzegovina
Email: mganic@ius.edu.ba
ORCID: https://orcid.org/0000-0003-1919-1321

Azra Brankovic

ADA University, Azerbaijan
Email: abrankovic@ada.edu.az
ORCID: https://orcid.org/0000-0002-1728-0016

Abstract. The aim of this study is to investigate how the link between a country's legislative and executive branches affects its ability to maintain fiscal discipline through mediating effects of economic reforms. The research bases its analysis on an investigation of NMS-11 countries between 1991 and 2022 using *Quantile Mediation Analysis* (QMA). It begins with an estimation of the impact of political institutions on fiscal sustainability and then continues with an investigation of the ways how political institutions influence the implementation of economic reforms through a mediator model. Moreover, in an attempt to evaluate the mediation effect, the study uses relevant coefficients taken from prior analyses to compute the indirect impact across quantile distributions. The study sheds the importance of the context in evaluating the role of political institutions and economic reforms on fiscal sustainability, highlighting the varying effects at different quantile levels. In fact, economic reforms are shown to be important when fiscal stress is at a relatively low level and are relatively less effective when the stress is high because the impact of the reforms and institutional factors differs according to the distribution of debt to GDP. This investigation shows that political stability and fiscal outcomes are interactive by segmenting this group into legislative, executive, judicial, and federal dimensions. Politicians should focus on improving the democratization processes of the lower house to facilitate accountability and decision-making when it comes to the judiciary to assist in fiscally integrating during some rough patches. They should also use specific economic actions regarding debt as well as apply the federal policies relevant to various forms of federalism to provide successful reforms.
Keywords: fiscal sustainability, political institutions, economic reforms, Quantile Mediation Analysis (QMA), emerging Europe.

* Correspondent author.

Received: 16/01/2025. **Accepted:** 21/09/2025

1. Introduction

Fiscal capacity is essential for promoting economic growth, as it enables governments to generate tax revenues and fund public goods. The effectiveness of a tax system relies on well-structured political institutions, particularly strong checks and balances within the executive branch, to ensure that officials serve the public interest and prevent resource misallocation (Bostan et al., 2021; Caselli & Reynaud, 2020; Golpe et al., 2023). Institution strengthening through fiscal rules, independent fiscal bodies, and judicial impartiality is essential to address fiscal populism and promote sound public finance management. Effective fiscal frameworks prioritize good governance, balanced policies, and development-focused strategies over reliance on fiscal ratios. Economic institutions are endogenous (Acemoglu & Robinson, 2006), reflecting ongoing conflicts of interest over their selection and resource allocation. The distribution of political power among elite groups significantly shapes the dominant institutional framework. The new economic environment, despite being a global challenge, disproportionately impacts emerging and developing economies due to their significantly limited fiscal flexibility (Ayhan, 2017; Monastiriotis & Tunali, 2020). This further complicates the process of monitoring real economic convergence between emerging economies in Central-Eastern and South-Eastern Europe (NMS 11) and the EU Member States that joined before 2004. In the NMS 11 countries and within the framework of transition and convergence economies, the significance of political institutions might be even greater, as their influence, alongside economic reforms, can help improve fiscal sustainability.

This study has a goal to determine whether fiscal sustainability and political institutions are directly related at various debt-to-GDP ratio quantiles for a panel of NMS 11, indirectly through economic changes, or both at the same time. This examination evaluates two fundamental research questions about the indirect role of economic reforms in shaping the impact of political structures on fiscal sustainability in the NMS 11 countries as well as about the effects of the executive legislative balances in the NMS 11 countries on shaping their fiscal sustainability levels. Some of these issues are peculiar to these nations mainly because they lack adequate resources to effectively manage fiscal flexibility for real economic convergence with the EU member states.

This study delivers several important additions to current academic literature. Theoretically, it combines legal with political and economic aspects to study fiscal sustainability through an analysis of evolving institutions. The research focuses on the NMS 11 countries through the new methodological approach QMA intended to conduct political-fiscal analysis, thus demonstrating debt accumulation effects across various distribution tiers. The research offers substantial results about institutional transformations occurring within EU transition economies by moving beyond standard traditional fiscal ratio analysis. Also, it presents findings that benefit emerging economies that face democratic transitions alongside economic changes as they attempt EU standard implementation beneath financial constraints.

2. Literature Review

Recent literature on fiscal sustainability, including studies by Owusu et al. (2023), Chua et al. (2021), Afonso et al. (2021), and Gootjes and de Haan (2022), explores the link between fiscal rules, policy stability, and economic performance. Some argue that fiscal rules can enhance sustainability, but only under certain conditions (Schmidt-Hebbel & Soto, 2017; Sawadogo, 2020; Blanco et al., 2020; Gootjes & de Haan, 2022). Sawadogo (2020) finds that fiscal rules improve the credibility of a country's fiscal policy, leading to better international financial market conditions, such as lower bond yields and higher credit ratings, especially in developing countries. Generally, research on fiscal sustainability can be grouped into three main areas. Fiscal sustainability in advanced economies has been explored in several studies, such as Owusu et al. (2023), Onofrei et al. (2021), Gootjes and de Haan (2022), Amato and Saraceno (2022) with a focus on the EU market while exploring a link between public finances and sustainability aspects. Also, a few empirical studies have examined the efficiency of the overall government spending in the context of emerging economies (Chua et al., 2021; Olaoye & Olomola, 2022; Olanubi & Olanubi, 2022; Amri, 2023).

Interestingly, some empirical studies use multicointegration analysis to investigate long-term fiscal relationships and sustainability in different regions, such as the U.S. and the EU. Through semiparametric methods and analysis of singularities in matrices, they examine fiscal adjustments, public debt dynamics and the impact of economic unions (e.g., EMU) on fiscal sustainability (Abeysinghe et al., 2022; Polat & Polat, 2020; Feld et al., 2020) or in OECD countries (Dutu & Sicari, 2020). These studies highlight the importance of effective regulation and responsible social spending for fiscal sustainability. The debate persists on whether authoritarian or democratic governments are better for economic growth, with some arguing that authoritarian regimes, like China, are more capable of implementing the necessary reforms (Barro, 1996; Friedman, 2009).

Several studies, such as those by Onofrei et al. (2021) or Beck and Mozdzen (2020) explored the dependence between fiscal sustainability and institutional mechanisms. Fiscal rules curb expansionary policies and strengthen fiscal discipline, especially in coalition governments (Schuknecht, 2000; Wyplosz, 2012; Hallerberg et al., 2007). Research, mainly on wealthier nations, finds that left-leaning governments drive inflation, while right-leaning ones increase unemployment (Alesina, 1987; Hibbs, 1977). Recent literature highlights three elements of fiscal responsibility: independent fiscal institutions, medium-term budget frameworks, and numerical fiscal rules, which shape policies (Cavallo et al., 2018). Evangelopoulos (2018) stresses the importance of curbing unsustainable deficits and debt while improving public spending efficiency. Hallerberg et al. (2009) underline the role of fiscal governance in stabilizing public policies. The sustainability of public finances relies on the government's ability to manage long-term spending and avoid unsustainable practices. Prędkiewicz et al. (2019) and Ganic et al. (2021) emphasize the balance between public and private financing in shaping economic

efficiency. Legislative frameworks are perceived as vital tools for promoting transparent fiscal policies, with Lienert (2010) pointing out that fiscal responsibility laws curb policymakers' pro-cyclical tendencies. Ricciuti et al. (2018) found that stricter constraints on executive power improve tax fairness but may not necessarily enhance the tax system efficiency, although they significantly impact income taxes and total revenues. Hansen (2020) asserts that fiscal rules and transparency contribute to budget stability by limiting the executive's discretionary power in fiscal policy decisions.

In a subsequent study, Reuter (2019) examined 51 regulations adopted in the EU (1995–2015), highlighting the importance of independent institutions, oversight, and enforcement in ensuring adherence to fiscal rules. Meanwhile, Afonso and Alves (2023) explored the relationship between government spending efficiency and fiscal sustainability in 35 OECD countries (2007–2020), finding that resource optimization and improved efficiency enhance economic growth, increase public revenue, and strengthen fiscal sustainability. Thus, the existing literature motivated us to undertake the current study which is expected to provide valuable insights by focusing on the NMS 11 countries and examining specific political institutional variables. These variables can reveal their impact on managing public debt and ensuring fiscal discipline.

3. Methodology and Data

3.1. Variables and Data

This study analyses annual data from 1991 to 2022 for the NMS 11 economies – which are former transition countries now in the EU with the objective to examine the relationship between political institutions and fiscal sustainability. Their diverse experiences with economic reforms, EU integration, and democracy provide a valuable context. By incorporating legislative and executive influences alongside economic reforms, the study highlights the role of political institutions in shaping fiscal policies. Henisz's institutional index (2000) is central, measuring political constraints through independent government branches with veto power and their preference distribution. The findings aim to guide policymakers in enhancing fiscal sustainability and debt management. To examine a causal relationship, we utilize the QMA estimator. This approach represents a novel contribution, as it has not been applied in the existing literature to estimate causality between political institutions and fiscal sustainability. Rather than estimate the mediation effect for the whole sample at once, as with other methods, QMA enables us to estimate it for different quantiles, such as the 0.1, 0.25, 0.5, 0.75, and 0.9 quantiles of the debt-to-GDP ratio. It aims to explain whether the link between political institutions and fiscal balance is statistically weaker for countries that are more entangled in debt problems than for those that are less involved. Table 1 reports the variables used in our study.

Table 1. Variables used in the models

Dependent Variable	Description	Source
FISUST	Fiscal sustainability measured by Central government debt, total (% of GDP).	World Bank
Independent variables		
L1_VDEM	Effective legislative chambers	Polcon 2022
L2_VDEM	Effective second legislative chambers	Polcon 2022
J_VDEM	The existence of an independent judiciary	Polcon 2022
F_VDEM	Independent sub-federal entities	Polcon 2022
ERI	Economic reform index measures how countries'policies and institutions support economic freedom	Economic Freedom of the World dataset
Control variables		
UNEMPL	Unemployment, total (% of total labour force) (modelled ILO estimate)	World Bank
INFL	Inflation, consumer prices (annual %)	World Bank
GOVET	Gross national expenditure (% of GDP)	World Bank

Source: authors' compilation

The model uses Fiscal Sustainability, measured by central government debt as a percentage of GDP, as the dependent variable, analysing the debt-to-GDP ratio as an indicator of fiscal stability. Political institutions, treated as exogenous or endogenous independent variables, include key factors from the Polcon dataset: the Lower House of Legislature (L1_VDEM), reflecting checks and balances; the Upper House of Legislature (L2_VDEM), representing legislative oversight; Sub-Federal Units (F_VDEM), indicating regional influences on policy; and the Judiciary (J_VDEM), which reflects judicial independence in political decisions (see Table 1). The included variables analyse the core factors that influence governmental financial policy to demonstrate the impact of institutional political factors on economic sustainability together with economic elements.

The variable judicial (J_VDEM) strengthens fiscal responsibility through enforcing fiscal policies along with legally binding agreements and governmental obligations (Feld & Voigt, 2003; Voigt et al., 2015). The Sub-federal Units variable (F_VDEM) deals with federal fiscal policy authorizations by clarifying how sub-national authorities shape financial discipline through autonomous spending powers or transfer systems (Rodden, 2006). The model includes L1_VDEM as a variable because it represents the crucial location for budget creation and modification and approval, thus becoming the primary spot for fiscal actions (Wehner, 2006). The L2_VDEM variable within this system acts as an oversight mechanism to protect and balance both fiscal policy creation and operational execution at the central level. Its strength runs in parallel with its constitutional prerogatives and affinity with the lower chamber (Afonso & Hauptmeier, 2009). The *Economic Reform Index* (ERI) monitors economic reform effects on fiscal sustainability by analysing eco-

nomic indicators that include inflation and unemployment levels together with government spending because they define fundamental macroeconomic conditions. Different variables drive fiscal trends because they shape the financial wealth and spending habits of governments, which helps understand sustainability from multiple angles (Barro, 1996; Reuter, 2019; Amato & Saraceno, 2022; Afonso & Alves, 2023). This paper by Afonso et al. (2021) evaluated how tax structures together with reforms influence the efficiency gaps between different nations. Fiscal rules together with government spending efficiency serve as essential factors for fiscal sustainability, according to research, but these variables function as substitute indicators since fiscal rules demonstrate better sustainability levels when government efficiency improves. The relationship between economic reforms and fiscal sustainability remains positive because these reforms enhance both public finance management as well as resource efficiency and economic growth to ensure sustainable fiscal balance. The Economic Reform Index functions as a mediating tool to measure economic freedom factors connected to institutional changes that relate governmental systems to financial stability. Better tax system performance combined with rational fiscal expenditure strategies alongside institutional strengthening practices makes reforms more efficient (Alesina, 1987; Hallerberg et al., 2007). Fiscal sustainability data reflect the effects of unemployment rates together with government spending (GOVET) and inflation (INFL) through controlled research conditions (Beck & Mozdzen, 2020).

3.2. Specification of Model

There are several regression equations in this analysis that relate the independent, mediating, and dependent variables.

Equation (1) assesses the relationship between the independent variable, political institutions (L1_VDEM, L2_VDEM, J_VDEM and F_VDEM) and the dependent variable FISUST. If the coefficient $\beta_1, \beta_2, \beta_3, \beta_4$ is significant, then it can be concluded that there is a direct relationship between political institutions (L1_VDEM, L2_VDEM, J_VDEM and F_VDEM) and FISUST.

$$\text{FISUST}_{it} = \beta_o + \beta_1 \text{L1\_VDEM}_{it} + \beta_2 \text{L2\_VDEM}_{it} + \beta_3 \text{J\_VDEM}_{it} + \beta_4 \text{F\_VDEM}_{it} + \gamma X_{it} + \varepsilon_{1it} \quad (1)$$

where:

FISUST is the dependent variable (Fiscal Sustainability),

The Lower House of Legislature (L1_VDEM) variable assesses the extent of institutional checks and the level of alignment within the lower house.

The Upper House of Legislature (L2_VDEM) variable reflects the role of upper legislative checks.

The Judiciary (J_VDEM) variable evaluates judicial independence and its impact on political decision-making.

Sub-Federal Units (F_VDEM) represent the influence of regional or sub-federal entities on policy formulation.

β_o – intercept.

$\beta_1, \beta_2, \beta_3, \beta_4$ are the coefficients of the political institutions,
The control variables, including inflation, unemployment, and government spending are denoted by X_{it}, and
ε_1 – error term.

The second step is to estimate the relationship between the independent variables of political institutions (L1_VDEM, L2_VDEM, J_VDEM and F_VDEM) and the mediator variable ERI, as presented in Equation (2). If the coefficient of $\gamma_1, \gamma_2, \gamma_3, \gamma_4$ is significant, then we support the existence of the initial mediated effect.

$$\text{ERI}_{it} = \gamma\text{o} + \gamma_1\text{L1\_VDEM}_{it} + + \gamma_2\text{L2\_VDEM}_{it} + \gamma_3\ \text{J\_VDEM}_{it} + \gamma_4\text{F\_VDEM}_{it} + \varepsilon_{2it} \quad (2)$$

The third step involves assessment of the connection between the mediator variable ERI and the dependent variable FISUST, as shown in Equation (3). If the coefficient of δ_5 is significant, it can then be concluded that the final mediated effect exists.

$$\text{FISUST}_{it} = \delta_\text{o} + \delta_1\text{L1\_VDEM}_{it} + + \delta_2\text{L2\_VDEM}_{it} + + \delta_3\text{J\_VDEM}_{it} + \delta_4\text{F\_VDEM}_{it} + \delta_5\text{ERI\_it} + \varepsilon_{3it} \quad (3)$$

To implement Quantile Mediation Analysis, the study follows three steps. First, it uses quantile regression to assess the relationship between political institutions and fiscal sustainability at different quantiles of the debt-to-GDP ratio. Next, it regresses political institutions on the Economic Reform Index (the mediator) in order to evaluate their impact across quantiles. Finally, the indirect effect at each quantile is calculated by multiplying the coefficients from both steps. The study employs a novel quantile mediation framework combining quantile regression and mediation analysis, as proposed by Hsu (2020) and Hsu et al. (2023), to estimate quantile parameters for both high and low values of the dependent variables.

The study analyses whether the political institution variables (L1_VDEM, L2_VDEM, J_VDEM and F_VDEM) maintain their association with FISUST in Equation (3) when adjusting for the mediator effect of ERI. When we evaluate ERI as the mediating factor, both political institution variables (L1_VDEM, L2_VDEM, J_VDEM and F_VDEM) lose their association with FISUST, thus indicating that ERI fully mediates this relationship since the coefficients of $\delta_1, \delta_2, \delta_3, \delta_4$ become non-significant. The third mediation model demonstrates support through the significance of coefficients of $\delta_1, \delta_2, \delta_3, \delta_4$ from Equation (3) when they show values below the comparable coefficients $\beta_1, \beta_2, \beta_3, \beta_4$from Equation (1).

Equation (4) for the mediator ERI at different quantiles (e.g., 0.25, 0.50, 0.75, 0.90) can be represented as follows:

$$\theta_\tau(ERI \mid X) = \alpha_\tau + \beta_{\tau1}\text{L1\_VDEM} + \beta_{\tau2}\ \text{L2\_VDEM} + \beta_{\tau3}\ \text{J\_VDEM} + \beta_{\tau4}\ \text{F\_VDEM} + \delta_{\tau1}INFL + \delta_{\tau2}UNEMPL + \delta_{\tau3}GOVET + \varepsilon_\tau \quad (4)$$

where:
– $\theta_\tau(ERI \mid X)$ is the quantile of *ERI* conditional on the independent and control variables.
– $\beta_{\tau i}$ and $\delta_{\tau i}$ are the quantile-specific coefficients at quantile level τ.

The following is the outcome Equation (5) for the dependent variable FISUST (Fiscal Sustainability) at various quantiles expressed as:

$$\theta_\tau(FISUST/X) = \alpha_\tau + \gamma_{\tau 1}\text{L1\_VDEM} + \gamma_{\tau 2}\text{ L2\_VDEM} + \gamma_{\tau 3}\text{J\_VDEM} + \gamma_{\tau 4}\text{F\_VDEM} + \lambda_\tau ERI + \delta_{\tau 1} INFL + \delta_{\tau 2} UNEMPL + \delta_{\tau 3} GOVET + \varepsilon_\tau \quad (5)$$

where:

$\theta_\tau(FISUST/X)$ is the quantile of FISUST conditional on the independent variables and control variables.

λ_τ represents the effect of *ERI* on FISUST at quantile ε_τ.

The coefficients from the two models are multiplied to determine the indirect effect at quantile τ, as shown in Equation (6):

$$\textit{Indirect effect } \underset{\tau}{X_k} = \beta_{\tau k} \text{ x } \lambda_\tau \quad (6)$$

where any independent variable X_k that affects the mediator of ERI has its own indirect effect.

The methodology minimizes the weighted error sum in the quantile mediation regression, by integrating Equations (4), (5), and (6) with Equations (1), (2) and (3). Accordingly, the study tests the following hypotheses:

H_1: Strong political institutions defined by legislative and executive checks and balances lead to higher fiscal sustainability in NMS 11 economies.

H_2: The effect that political institutions have on fiscal sustainability shows differences between debt-to-GDP ratio measurement intervals.

H_3: Economic reforms act as moderators between political systems and fiscal stability outcomes to produce superior fiscal results in the NMS 11 economies

4. Empirical Analysis

The estimation of the indirect effect (the total effect model) between independent political variables, control variables, and the dependent variable of fiscal sustainability (FISUST) is presented in Table 2.

The lower house of the legislature (L1_VDEM) generally exhibits a positive impact on fiscal sustainability at higher quantiles. For instance, at the 0.75 quantile, the coefficient is 2.08, which is statistically significant at the 5% level, and at the 0.9 quantile, where the coefficient rises to 29.72, and which is also significant at the 5% level. However, at lower quantiles, such as 0.25 and 0.50, the coefficient of L1_VDEM is statistically insignificant. These findings align with Wehner (2010), who argued that effective legislatures enforce fiscal discipline by overseeing government expenditures and ensuring legal compliance.

Conversely, fiscal sustainability is negatively influenced by the upper house of the legislature (L2_VDEM), particularly at higher quantiles. At the 0.75 quantile, the co-

efficient is -6.26, and, at the 0.9 quantile, it decreases further to -29.13; both cases are statistically significant at the 5% level. However, at lower quantiles (0.25 and 0.50), the coefficients are statistically insignificant. These results align with Afonso and Hauptmeier (2009), who suggested that upper houses with strong veto powers or asymmetric structures relative to the lower house often hinder fiscal reforms, thereby negatively impacting fiscal performance.

Table 2. Estimation of the total effect model

Quantile level	Variable	Coefficient	Std. Error	t-value
0.25	L1_VDEM	3.790568	9.882406	0.38
0.5	L1_VDEM	8.010052	10.13727	0.79
0.75	L1_VDEM	2.082617**	13.3439	2.46
0.9	L1_VDEM	29.71746**	12.26058	2.42
0.25	L2_VDEM	-3.75072	10.08884	-0.37
0.5	L2_VDEM	-9.32870	10.34902	-0.90
0.75	L2_VDEM	-6.26339**	13.62264	-2.41
0.9	L2_VDEM	-29.1259**	12.51669	-2.33
0.25	J_VDEM	-9.60760**	4.793239	-2.00
0.5	J_VDEM	-5.27906	4.916856	-1.07
0.75	J_VDEM	2.276509**	6.47216	2.35
0.9	J_VDEM	-4.59970	5.946718	-0.77
0.25	F_VDEM	8.676416**	4.522389	1.92
0.5	F_VDEM	8.327701*	4.63902	1.80
0.75	F_VDEM	6.524811	6.10644	1.07
0.9	F_VDEM	2.447073	5.610689	0.44
0.25	INFL	-0.042534*	0.0226894	-1.87
0.5	INFL	-0.013816	0.0232745	-0.59
0.75	INFL	6.524811**	6.10644	2.07
0.9	INFL	0.0239078	0.0281495	0.85
0.25	UNEMPL	0.6141358	0.4143222	1.48
0.5	UNEMPL	0.3939641	0.4250074	0.93
0.75	UNEMPL	0.244373	0.5594462	0.44
0.9	UNEMPL	0.4848323	0.5140276	0.94
0.25	GOVET	-1.07979***	0.2972353	-3.63
0.5	GOVET	-1.16993***	0.3049009	-3.84
0.75	GOVET	-2.11128***	0.3913475	-5.17
0.9	GOVET	-2.16135***	0.4012479	-5.39

Note: *, **, ***means significance of the tested variables at 10%, 5%, 1% levels
Source: authors' calculation

The J_VDEM (Judiciary) variable serves as an indicator of the mixed effects of democratization on fiscal sustainability. It demonstrates a statistically significant negative impact at the 0.25 quantile, with a coefficient of -9.61 (which is significant at 5%), and a positive, statistically significant effect at the 0.75 quantile, with a coefficient of 2.28 (which is significant at 5% level). At other quantiles, the effect is either insignificant or very small in magnitude (see Table 2).

There is a positive and statistically significant impact of the Federal Structure (F_VDEM) variable at the 0.25 quantile and 0.5 quantile at 5% and 10% levels, respectively. To the contrary, there is a statistically insignificant impact of the Federal Structure (F_VDEM) variable at higher percentiles (specifically, at 75^{th} and 90^{th} percentiles). It can be explained with some of Rodden's (2006) findings positing that federal structures are fiscally sustainable by reacting to vertical fiscal imbalance, intergovernmental transfers, and soft budget constraints.

Inflation (INFL) negatively impacts fiscal sustainability at the 0.25 quantile (coefficient: -0.043, which is significant at 10%) but it shows a positive effect at the 0.75 quantile (coefficient: 6.52, which is significant at 5%). At the 0.5 and 0.9 quantiles, the relationship is unclear and statistically insignificant. These findings suggest that inflationary pressures pose a smaller threat to fiscal sustainability compared to factors like government spending or fiscal consolidation. Unemployment (UNEMPL) has an insignificant impact across all quantiles, with positive but statistically negligible coefficients, indicating no direct relationship between unemployment and fiscal sustainability in this model.

Moreover, through examining the effect of each independent variable on the fiscal sustainability in each quantile, it can be concluded that the coefficient estimate of GOVET is statistically significant at 1% level in each quantile. The coefficients range between -1.08 at 0.25 quantile and -2.16 at 0.9 quantile. This goes further to show us that anything that the government spends results in an even worse fiscal situation. This implies that higher government spending is harmful to fiscal solvency in development, especially if it does not come together with a higher turnout of revenues. This negative relationship means that slashing spending is crucial to avoid compromising the fiscal health through exacerbating the fiscal deficits and extending the indicators like debt-to-GDP. These findings are consistent with those obtained from the relevant literature (Prędkiewicz et al., 2019; Ganic et al., 2021; Afonso & Alves, 2023).

Subsample regression of the mediator (Economic Reform Index) on political institutions is used to examine the effects of political institutions on economic reforms at different quantiles. Table 3 presents the quantile regression analysis for mediator variable ERI and other political institutional factors (L1_VDEM, L2_VDEM, J_VDEM, and F_VDEM). Estimation of each political variable's coefficients is done at a different quantile level; 0.25, 0.5, 0.75, and 0.9 are chosen to indicate how the impact of these factors may differ across the distribution of ERI. Upon analysing the coefficients of L1_VDEM, positive and significant values were obtained for all the quantile regression coefficients ranging from 0.25 to 0.9 at 1% significance. It means that an increase in the ERI is related to the increase in the lower house of the legislative variable. The strongest relationship is

noted at the 0.5 quantile, and thus the robust influence rating is approximately 2.65 at 1% significance. The coefficients are negative, statistically significant in all quantiles, and the following variable, L2_VDEM, means that increases in the legislation's upper house are followed by declines in ERI. Interestingly, the most negative value of L2_VDEM is -2.22 at 1% significance, which corresponds to the 0.25 quantile.

Table 3. Estimation of the mediator model

Quantile level	Variable	Coefficient	Std. Error	t-value
0.25	L1_VDEM	1.9***	0.4105828	4.63
0.5	L1_VDEM	2.65***	0.3354448	7.90
0.75	L1_VDEM	1.51***	0.2249569	6.71
0.9	L1_VDEM	1.64***	0.1724423	9.51
0.25	L2_VDEM	-2.22***	0.3536914	-6.28
0.5	L2_VDEM	-1.50***	0.2889647	-5.19
0.75	L2_VDEM	-1.09***	0.1937863	-5.62
0.9	L2_VDEM	-1.1***	0.1485483	-7.41
0.25	J_VDEM	0.59***	0.1447616	4.08
0.5	J_VDEM	0.139	0.1182698	1.18
0.75	J_VDEM	0.38***	0.0793144	4.79
0.9	J_VDEM	0.41***	0.060799	6.74
0.25	F_VDEM	0.26*	0.1397952	1.86
0.5	F_VDEM	0.15	0.1142122	1.31
0.75	F_VDEM	0.13*	0.0765933	1.70
0.9	F_VDEM	-0.07	0.0587131	-1.19

Note: *, **, *** means significance of the tested variables at 10%, 5%, and 1% levels
Source: authors' calculation

The judicial variable shows a positive and statistically significant relationship with the *Economic Reform Index* (ERI) at the 0.25, 0.75, and 0.9 quantiles, but a low and insignificant association at the 0.5 quantile. This supports the view that judicial independence enhances fiscal performance by preventing improper fiscal actions (Feld & Voigt, 2003; Voigt et al., 2015). The federal structure variable exhibits mixed effects across quantiles, with a positive connection that varies depending on the economic reform environment. The results highlight that the impact of political institutions on economic reforms and fiscal sustainability can differ by quantile and previous reforms, thereby emphasizing the importance of the context in policy evaluation, which is consistent with studies by Alesina (1987), Feld and Voigt (2003), Hallerberg et al. (2007), Voigt et al. (2015), Cavallo et al. (2018), Reuter (2019), and Beck & Mozdzen (2020).

Moreover, Table 4 shows the findings of a quantile regression study that examined the association between fiscal sustainability (FISUST), several political variables (as determined by the V-Dem dataset), economic reforms and control variables.

Table 4. Estimation of the mediation model

Quantile level	Variable	Coefficient	Std. Error	t-value
0.25	L1_VDEM	13.17898	17.14771	0.77
0.5	L1_VDEM	20.44647	17.79689	1.15
0.75	L1_VDEM	59.03279**	26.93564	2.19
0.9	L1_VDEM	54.5185**	27.96395	1.99
0.25	L2_VDEM	-5.745332	11.93701	-0.48
0.5	L2_VDEM	-11.56524	12.38893	-0.93
0.75	L2_VDEM	-32.40385*	18.75067	-1.73
0.9	L2_VDEM	-49.17504**	19.4665	-2.53
0.25	J_VDEM	-9.418136**	4.690073	-1.98
0.5	J_VDEM	-9.1375486**	4.160059	-2.13
0.75	J_VDEM	-6.819355	7.05301	-1.25
0.9	J_VDEM	-7.862606	7.322269	-1.07
0.25	F_VDEM	9.664062**	4.162644	2.32
0.5	F_VDEM	7.556452*	4.320234	1.75
0.75	F_VDEM	0.5073898	6.538685	0.08
0.9	F_VDEM	-.3182563	6.788309	-0.05
0.25	ERI	-5.346159*	2.976076	-1.80
0.5	ERI	-6.61423**	3.088745	-2.14
0.7	ERI	0.9869124	4.674823	0.21
0.9	ERI	-6.64968	4.853291	-1.37
0.25	INFL	-0.1269133	0.0992995	-1.28
0.5	INFL	-0.0435361	0.1030588	-0.42
0.75	INFL	0.2048347	0.1559797	1.31
0.9	INFL	0.1292342	0.1619344	0.80
0.25	UNEMPL	0.4117248	0.4222478	0.98
0.5	UNEMPL	0.3164844	0.4382333	0.72
0.75	UNEMPL	0-.3398871	0.6632672	-0.51
0.9	UNEMPL	0.5586427	0.6885884	0.81
0.25	GOVET	-1.26225***	0.2868643	-4.40
0.5	GOVET	-1.75407***	0.2977245	-5.89
0.75	GOVET	-2.49026***	0.4506067	-5.53
0.9	GOVET	-2.50370***	0.4678093	-5.35

Note: *, **, ***means significance of the tested variables at 10%, 5%, 1% levels
Source: authors' calculation

This analysis examines the impact of political institutions and macroeconomic factors on fiscal sustainability, measured by the debt-to-GDP ratio across different quantiles. Political institutions affect fiscal sustainability differently across quantiles: the upper house and judiciary have a negative effect, particularly at higher fiscal sustainability levels,

while the lower house shows a positive impact at the 0.75 quantile. Economic reforms negatively affect fiscal sustainability at the median level, with diminishing influence at higher sustainability levels. Government expenditure consistently has a negative effect, which emphasizes its importance, while inflation and unemployment show no significant impact on long-term sustainability, thereby supporting findings by Reinhart and Rogoff (2009) and Afonso and Jalles (2013).

Conclusion

This research examines how the fusion of powers between the legislative and executive branches influences fiscal discipline, by focusing on the NMS 11 countries. The study's findings suggest that political institutions with strong checks and balances demonstrate a positive relationship with the fiscal sustainability in the NMS 11 countries. Random political institutions can boost fiscal sustainability differently according to the level of debt a country currently faces, which emphasizes the necessity of specialized approaches in public policy. Fiscal sustainability and political institutions need economic reforms for their relationship building to be successful. The NMS 11 countries need governance reforms since their fiscal risks rise in cases where institutional frameworks are weak.

The research shows that government spending creates more impact on fiscal sustainability than both inflation rates and unemployment levels. The study shows that policymakers need to focus on democratic institution consolidation of both the lower house and the judiciary while consistently reducing public spending so that to preserve long-term fiscal stability. Research examines fiscal sustainability challenges in the EU nations with transitioning economies thus providing important missing information to the scholars studying this field.

The research provides essential recommendations to academics and government staff who need to utilize institutional powers for budget reductions in their pursuit of sustainable economic transformation.

The findings of the study offer policymakers several recommendations for improvement. The lawmaker needs to implement stronger theoretical and legal reforms for the lower house to boost economic openness as well as develop better fiscal structures. To improve its performance, the institution needs to adopt more rapid decision-making processes combined with capacity-building investments to achieve its goals. Fiscal institutions must gain independence to establish credibility when these institutions execute their programs. The establishment of comprehensive legal frameworks represents another recommendation for building proper behavioural patterns in the public financial sector. The judiciary must undergo improvements during crisis situations, especially in fiscal integration and economic affairs performance. The existing upper chamber approval procedures need thorough examination to establish better fiscal reforms. Judicial performance enhancement stands as a vital requirement because it directly enhances the trustworthiness of policy execution. Systematic legal frameworks should be developed as they create mechanisms to maintain ethical operations within public financial systems. The focus should be on enhancing

judicial performance regarding fiscal integration and economic matters especially during fiscal crises. Extra scrutiny needs to be applied to upper chamber authorization procedures in order to enhance fiscal reform execution outcomes. Moreover, fiscal improvement implementation needs to be kept effective as a key priority when dealing with financial challenges. In addition, national fiscal strategies need to conform to the European Union requirements through the development of suitable federalism policies. NMS 11 should join forces with established EU member states in order to introduce organized budget strategies while assisting reform operations.

The study generates important knowledge points that extend to various significant domains. The research results help institutions to find reforms that improve operational cohesion and enhance cooperation between the different entities. The findings demonstrate economically the need to refocus tax systems as well as public allocation and anti-corruption measures for financial sustainability in emerging Europe. Analysts can conduct economic trend projections by using these insights to assist policymakers in creating monitors for reform implementation progress. In addition, academic research establishes that successful fiscal governance needs to deliver resources in an equal manner to serve every social community.

References

Abeysinghe, T., Mao, K., & Zhang, X. (2022). Welfare spending and fiscal sustainability: Segmented-trend panel-regression analysis of Chinese provinces. Journal of the Asia Pacific Economy, 27(3), 358–378. https://doi.org/10.1080/13547860.2020.1834905.

Amri, K. (2023). Does Tax Effort Moderate the Effect of Government Expenditure on Regional Economic Growth? A Dynamic Panel Data Evidence from Indonesia, Ekonomika, 102(2), pp. 6–27. doi:10.15388/Ekon.2023.102.2.1.

Acemoglu, D., & Robinson, J. A. (2012). Why nations fail: The origins of power, prosperity, and poverty. Crown Publishing Group.

Afonso, A., & Hauptmeier, S. (2009). Fiscal behaviour in the European Union: Rules, fiscal decentralization, and government indebtedness. Working Paper Series No. 1054, European Central Bank.

Afonso, A., Jalles, J., & Venâncio, A. (2021). Taxation and public spending efficiency: An international comparison. Comparative Economic Studies, 63(3), 356–383. https://doi.org/10.1057/s41294-021-00147-2

Afonso, A., & Alves, J. (2023). Does government spending efficiency improve fiscal sustainability? European Journal of Political Economy. https://doi.org/10.1016/j.ejpoleco.2023.102403

Afonso, A., & Jalles, J.T. (2011). Growth and productivity: The role of government debt. Working Paper No. 13/2011/DE/UECE. Technical University of Lisbon, Department of Economics. https://doi.org/10.2139/ssrn.1893687

Alesina, A. (1987). Macroeconomic policy in a two-party system as a repeated game. Quarterly Journal of Economics, 102(3), 651–678. https://doi.org/10.2307/1884222

Amato, M., & Saraceno, F. (2022). Squaring the circle: How to guarantee fiscal space and debt sustainability with a European debt agency (BAFFI CAREFIN Center Research Paper No. 2022-172). SSRN. https://doi.org/10.2139/ssrn.4011081.

Ayhan, K., Kurlat, S., Ohnsorge, F., & Sugawara, N. (2017). A cross-country database of fiscal space. The World Bank. https://doi.org/10.1016/j.jimonfin.2022.102682

Barro, R. J. (1996). Democracy and growth. Journal of Economic Growth, 1(1), 1–27. https://doi.org/10.1007/BF00163340

Beck, K., & Mozdzen, M. (2020). Institutional determinants of budgetary expenditures: A BMA-based re-evaluation of contemporary theories for OECD countries. Sustainability, 12(10), 4104. https://doi.org/10.3390/su12104104.

Blanco, F., Saavedra, P., Koehler-Geib, F., & Skrok, E. (2020). Fiscal rules and economic size in Latin America and the Caribbean. Washington, D.C.: Latin American Development Forum, World Bank. https://doi.org/10.1596/978-1-4648-1382-5

Bostan, I., Tudose, M. B., Clipa, R. I., Chersan, I. C., & Clipa, F. (2021). Supreme audit institutions and sustainability of public finance: Links and evidence along the economic cycles. Sustainability, 13, 9757. https://doi.org/10.3390/su13179757.

Caselli, F., & Reynaud, J. (2020). Do fiscal rules cause better fiscal balances? A new instrumental variable strategy. European Journal of Political Economy, 63, 101873. https://doi.org/10.1016/j.ejpoleco.2020.101873.

Cavallo, A., Dallari, P., & Ribba, A. (2018). The common framework for national fiscal policies and the euro area fiscal union. In Fiscal policies in high debt euro-area countries (pp. 11–49). Springer.

Chua, C. L., Perera, N., & Suardi, S. (2021). Fiscal regimes and fiscal sustainability in Sri Lanka. Applied Economics, 53(21), 2384–2397. https://doi.org/10.1080/00036846.2020.1859456

Dutu, R., Sicari, P. (2020). Public Spending Efficiency in the OECD: Benchmarking Health Care, Education, and General Administration. Review of Economic Perspectives, 20(3),253-280. https://doi.org/10.2478/revecp-2020-0013

Evangelopoulos, P. (2018). The restoration of fiscal stability: A public choice approach on the problem of public debt. Theoretical Economics Letters, 8(2), 147. https://doi.org/10.4236/tel.2018.82010

Feld, L.P., & Voigt, S. (2003). Economic growth and judicial independence: Cross-country evidence using a new set of indicators. European Journal of Political Economy, 19(3), 497–527.

Feld, L. P., Köhler, E. A., & Wolfinger, J. (2020). Modeling fiscal sustainability in dynamic macro-panels with heterogeneous effects: Evidence from German federal states. International Tax and Public Finance, 27, 215–239. https://doi.org/10.1007/s10797-019-09563-8

Ganić, M., Hodžić, L., & Ridžić, O. (2021). A test of the validity of the crowding-out (or-in) hypothesis: A new examination of the link between public borrowing and private investment in emerging Europe. Croatian Operational Research Review, 12(1), 91–103. https://doi.org/10.17535/crorr.2021.0008

Golpe, A. A., Sánchez-Fuentes, A. J., & Vides, J. C. (2023). Fiscal sustainability, monetary policy and economic growth in the Euro Area: In search of the ultimate causal path. Economic Analysis and Policy, 78, 1026–1045. https://doi.org/10.1016/j.eap.2023.04.03

Gootjes, B., & de Haan, J. (2022). Procyclicality of fiscal policy in European Union countries. Journal of International Money and Finance, 120(C). Elsevier. https://doi.org/10.1016/j.jimonfin.2022.102540

Hallerberg, M., Strauch, R.R., & Von Hagen, J. (2009). Fiscal governance in Europe. Cambridge University Press.

Hallerberg, M., Strauch, R.R., & Von Hagen, J. (2007). The design of fiscal rules and forms of governance in European Union countries. European Journal of Political Economy, 23(2), 338–359. https://doi.org/10.1016/j.ejpoleco.2006.11.005.

Hansen, D. (2020). The effectiveness of fiscal institutions: International financial flogging or domestic constraint? European Journal of Political Economy, 63, 101879. https://doi.org/10.1016/j.ejpoleco.2020.101879

Henisz, W. (2000). The institutional environment for multinational investment. Journal of Law, Economics, and Organization, 16(2), 334–364. https://doi.org/10.1093/jleo/16.2.334

Hibbs, D. A. (1977). Political parties and macroeconomic policy. American Political Science Review, 71(4), 1467–1487. https://doi.org/10.2307/1961490

Hsu, T. K. (2020). The effect of trade openness on carbon dioxide emissions in Taiwan: A quantile mediation analysis. WSEAS Transactions on Environment and Development, 16, 434–439. https://doi.org/10.37394/232015.2020.16.43.

Larch, M., Orseau, É., & van der Wielen, W. (2021). Do EU fiscal rules support or hinder counter-cyclical fiscal policy? Journal of International Money and Finance, 112, 102328. https://doi.org/10.1016/j.jimonfin.2020.102328.

Lienert, I. (2010). Should advance countries adopt a fiscal responsibility law? IMF Working Paper. Working Paper No. 2010/254 Retrieved from http://citeseerx.ist.psu.edu/viewdoc

Monastiriotis, V., & Tunali, C. B. (2020). The sustainability of external imbalances in the European periphery. Open Economies Review, 31, 273–294. https://doi.org/10.1007/s11079-019-09560-8

Olanubi, S., Olanubi, O. (2022). Political Short-termism and Government Spending Efficiency in Sub-Sahara Africa", in Afonso, A., Jalles, J., Venâncio, A. (eds.) Handbook on Public Sector Efficiency, Edward Elgar Publishing.

Owusu, B., Bökemeier, B., & Greiner, A. (2023). A Regime-Based Analysis of Debt Sustainability: Evidence from Eurozone Economies. European Journal of Political Economy, 102458. https://doi.org/10.1016/j.ejpoleco.2023.102458.

Onofrei, M., Toader, T., Vatamanu, A.F., & Oprea, F. (2021). Impact of governments' fiscal behaviors on public finance sustainability: A comparative study. Sustainability, 13(7), 1–16. https://doi.org/10.3390/su13073899.

Prędkiewicz, P., Bem, A., Ucieklak-Jeż, P., & Siedlecki, R. (2019). Public or private? Which source of financing helps to achieve higher health system efficiency? In Contemporary Trends and Challenges in Finance (pp. 191–199). Cham: Springer.

Persson, T., & Tabellini, G. (2002). Do constitutions cause large governments? Quasi-experimental records. European Economic Review, 46(4–5), 908–918. https://doi.org/10.1016/S0014-2921(01)00224-0

Polat, Gözde Eş, and Onur Polat. (2021). Fiscal sustainability analysis in EU countries: A dynamic macro-panel approach. Eastern Journal of European Studies, 12: 219–41. https://doi.org/10.47743/ejes-2021-0109.

Reinhart, C. M., & Rogoff, K. S. (2009). The aftermath of financial crises. American Economic Review, 99(2), 466–472. https://doi.org/10.1257/aer.99.2.466.

Reuter, W. H. (2019). When and why do countries break their national fiscal rules? European Journal of Political Economy, 57, 125–141. https://doi.org/10.1016/j.ejpoleco.2018.08.010.

Ricciuti, R., Savoia, A., & Sen, K. (2018). How do political institutions affect fiscal capacity? Explaining taxation in developing economies. Journal of Institutional Economics, 1–30. https://doi.org/10.1017/S174413741800009.

Rodden, J. (2006). Hamilton's paradox: The promise and peril of fiscal federalism. Cambridge: Cambridge University Press.

Sawadogo, P. N. (2020). Can fiscal rules improve financial market access for developing countries? Journal of Macroeconomics, 65, 103214. https://doi.org/10.1016/j.jmacro.2020.103214.

Schuknecht, L. (2000). Fiscal policy cycles and public expenditure in developing countries. Public Choice, 102(1–2), 113–128.

Schmidt-Hebbel, K., & Soto, R. (2017). Fiscal rules and fiscal performance: World evidence (World Bank LCR Regional Study on Fiscal Rules and Economic Size). World Bank.

Voigt, S., Gutmann, J., & Feld, L.P. (2015). Economic growth and judicial independence, a dozen years on: Cross-country evidence using an updated set of indicators. European Journal of Political Economy, 38, 197–211.

Wehner, J. (2006). Institutional constraints on profligate politicians: The conditional effect of partisan fragmentation on budget deficits. Comparative Political Studies, 43(2).