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Wagner in the Balkans? A Comparative Analysis of Government Size and Economic Growth

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Wagner in the Balkans?

A Comparative Analysis of Government Size and Economic Growth

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Abstract

Determining the appropriate size of government remains central for fiscal sustainability, social protection, and macroeconomic stability. Wagner's law, formulated in the 19th century, posits that government expenditures rise with income, yet contemporary evidence is mixed. This paper revisits the relationship between economic growth and government spending in Europe over the period 1990–2024, with particular attention to the Balkans. Using an instrumental variable strategy based on trade-weighted partner growth, we find no evidence that rising income systematically expands government expenditure. On the contrary, faster growth is associated with modest declines in expenditure, particularly for current spending, while capital outlays remain largely unaffected. These patterns are stronger in high-debt countries, suggesting that fiscal rules and debt constraints increasingly shape spending decisions. The Balkan economies largely follow these trends, though heterogeneity reflects transition dynamics and EU integration. Our findings imply that Wagner's law no longer describes spending behavior in modern European economies. Policymakers should focus less on income-driven expenditure growth and more on strengthening fiscal frameworks, improving spending efficiency, and prioritizing high-return investments in infrastructure and human capital. These measures can enhance fiscal resilience while supporting public service provision and long-term development goals.

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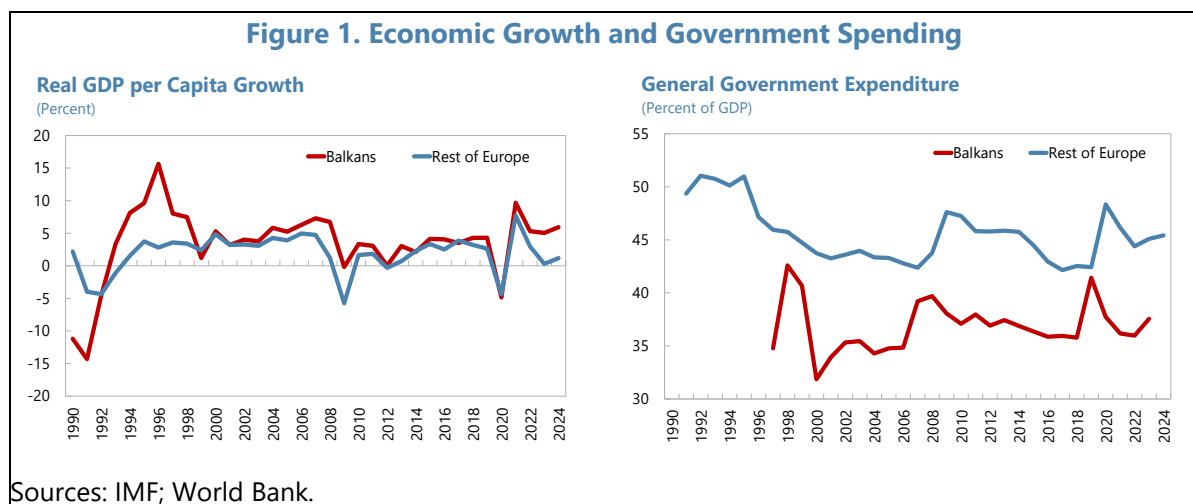
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I. INTRODUCTION

How large should government be? Can it become too large or too small, and what determines these thresholds? Is there a systematic relationship between economic development and the size of the public sector, or does government expansion primarily reflect historical legacies, institutional constraints, and political choices rather than income growth alone? These questions lie at the heart of debates in public finance, political economy, and development economics, shaping discussions of fiscal sustainability, state capacity, governance quality, and the evolving role of government across countries.

Over the past two centuries, the growth of government expenditure as a share of national income has been a defining structural transformation of modern economies. Public spending has expanded far beyond traditional functions to encompass social protection, health and education, infrastructure, regulation, and a broad array of public services. Yet despite the scale and persistence of this transformation, there is no consensus on its drivers. Does economic development inherently generate a larger state? Are there structural limits to public expenditure? And as economies mature, does government size eventually stabilize, continue to expand, or contract under demographic, institutional, or fiscal pressures?

These debates are closely linked to Wagner’s law of increasing state activity, first articulated in the late nineteenth century. Observing the industrializing economies of Europe, Adolph Wagner (1883) argued that government expenditure tends to rise more than proportionally with national income over the long run. The underlying intuition is that economic development increases demand for public goods and services—particularly infrastructure, education, social protection, and regulatory functions—whose income elasticity exceeds unity. As societies become wealthier and more complex, the scope and scale of government activity are therefore expected to expand. Sustained economic growth, in this view, should be accompanied by a larger public sector, both in absolute terms and relative to GDP. Wagner’s proposition has since served as an important conceptual benchmark for understanding the structural evolution of fiscal systems and continues to guide empirical research on the determinants of government size. Importantly, Wagner’s



proposition is best understood as a historically grounded empirical regularity associated with the structural transformation from agrarian to industrial economies, rather than as a universal “law” applicable uniformly across all income levels and time periods. Its relevance in contemporary settings—particularly in advanced economies with already large public sectors and binding fiscal constraints—therefore remains an open empirical question.

Wagner’s framework identifies several mechanisms linking development to government expansion. Industrialization and urbanization create coordination failures and externalities that require public intervention; rising incomes increase demand for publicly provided or subsidized goods and services; technological and economic complexity intensifies administrative and regulatory requirements; and political modernization and democratization strengthen pressures for redistribution and social protection. Together, these forces suggest a systematic and potentially enduring relationship between economic development and government size. However, the strength and direction of this relationship are likely to depend on the stage of development and institutional context in which these forces operate.

Yet the empirical validity of Wagner’s law is highly context-dependent. Cross-country evidence is far from uniform: some studies find strong positive correlations between income growth and government size, while others report weak, statistically insignificant, negative, or even inverted relationships (Booms and Greytak, 1969; Bird, 1971; Gandhi, 1971; Diamond, 1977; Ganti and Kolluri, 1979; Abizadeh and Gray, 1985; Landau, 1986; Ram, 1987; Grier and Tullock, 1989; Barro, 1990; Gyles, 1991; Henrekson, 1993; Hayo, 1994; Oxley, 1994; Bairam, 1995; Ahsan, Kwan, and Sahni, 1996; Bohl, 1996; Devarajan, Swaroop, and Zou, 1996; Payne and Ewing, 1996; Thornton, 1999; Peacock and Scott, 2000; Islam, 2001; Chang, 2002; Akitoby et al., 2006; Kolluri and Wahab, 2007; Shelton, 2007; Hakro, 2009; Durevall and Henrekson, 2011; Lamartina and Zaghini, 2011; Bruckner et al., 2012; Magazzin, 2012; Afonso and Jalles, 2014; Cavicchioli and Psitoresi, 2016; Funashima and Hiraga, 2017; Irandoust, 2019; Jalles, 2019; Sedrakyan and Varela-Candamio, 2019; Karceski and Kiser, 2020; Arestis, Şen, and Kaya, 2021; Gallegati and Tamberi, 2022; Murphy, 2022).

This divergence highlights that the relationship between income and government size is mediated by institutional, structural, and political factors rather than dictated by growth alone. Fiscal frameworks, automatic stabilizers, political regimes, demographic trends, financial development, and historical legacies all shape expenditure dynamics. In post-socialist and transition economies, public spending has often reflected large-scale restructuring, privatization, external assistance, and institutional reform rather than steady, income-driven growth. In mature European welfare states, high initial expenditure levels, demographic pressures, and binding supranational fiscal rules may limit further expansion even amid robust GDP growth.

Overall, these patterns caution against interpreting Wagner’s law as a universal regularity. Rather than a structural feature of development, the income–government size nexus appears contingent on institutional capacity, fiscal space, and the stage of economic and political transformation. Recognizing these conditioning factors is essential for assessing the law’s relevance and for designing fiscally sustainable, development-oriented policies in contemporary Europe.

Revisiting the relationship between economic growth and public expenditure is far from a purely academic exercise. Our empirical analysis carries important implications for fiscal sustainability, macroeconomic stabilization, income distribution, and the state's ability to provide essential public goods and social protection. By examining Europe—including the Balkans, which have undergone profound institutional and fiscal transformation—this paper reassesses Wagner's law in a contemporary policy context. This distinction is particularly relevant in Europe, where Balkan economies have experienced rapid structural transformation and income convergence—conditions under which Wagner's mechanism may still be operative—while high-income European countries face mature welfare states and tighter fiscal constraints that may weaken or even reverse the traditional income–expenditure relationship. Against this backdrop, we ask whether income growth continues to exert an independent influence on government spending, or whether expenditure dynamics are increasingly shaped by fiscal rules, institutional arrangements, and structural legacies.

Our analysis covers 34 European countries over 1990–2024, a period marked by post-socialist transitions, EU accession and integration, major macroeconomic shocks, and the tightening of supranational fiscal governance frameworks. Balkan economies offer a particularly informative setting: many experienced rapid catch-up growth from low initial income levels—circumstances under which Wagner's law would predict strong government expansion. At the same time, these countries faced increasingly binding fiscal constraints linked to convergence requirements and debt sustainability, providing a valuable context for evaluating Wagner's law today.

To uncover the mechanisms underlying aggregate results, we examine multiple layers of heterogeneity. We contrast Balkan economies with the broader European sample, differentiate between current and capital expenditure, and assess whether public debt levels condition the elasticity of expenditure with respect to income. Methodologically, we address endogeneity using an instrumental variable approach based on trade-weighted growth in partner economies, isolating exogenous income fluctuations from contemporaneous fiscal decisions.

The results challenge the contemporary relevance of Wagner's law in Europe. Contrary to its traditional prediction, we find no evidence that income growth systematically drives government expansion over 1990–2024. Faster GDP growth is associated, if anything, with a modest decline in government spending, concentrated in current expenditure, while capital spending remains largely unresponsive. The negative association is particularly pronounced in high-debt countries, suggesting that fiscal rules and financing constraints dominate income-driven expenditure pressures. Balkan economies broadly follow these patterns, though with greater heterogeneity reflecting divergent transition paths, institutional development, and EU integration dynamics.

Several mechanisms may explain these counterintuitive results. Automatic stabilizers operate countercyclically: during expansions, social transfers decline while progressive taxes rise, mechanically reducing expenditure-to-GDP ratios. Binding fiscal rules constrain discretionary spending, prompting governments to allocate revenue windfalls toward deficit and debt reduction. Political economy considerations may favor tax relief over spending expansion, while

privatization and public sector rationalization in transition economies reduce measured expenditure without necessarily diminishing service provision.

These findings carry clear policy implications. Wagner’s law appears historically contingent, reflecting earlier phases of industrialization and welfare-state development rather than a structural feature of fiscally disciplined contemporary Europe. Government size today is shaped less by income growth than by the interaction of fiscal institutions, expenditure composition, demographic pressures, and political incentives. For the Balkans and other transition economies, sustainable public sector expansion will not arise automatically from growth; it requires stronger fiscal institutions, improved expenditure efficiency, and strategic investment in infrastructure and human capital. Policymakers should design fiscal rules and budgetary frameworks that balance sustainability with flexibility, ensuring growth translates into improved public services and social protection without compromising macroeconomic stability.

The remainder of the paper proceeds as follows. Section II reviews the theoretical and empirical literature on Wagner’s law. Section III describes the data and descriptive patterns. Section IV outlines the econometric strategy. Section V presents the main results and extensions. Section VI concludes with policy implications for fiscal management in Europe and the Balkans.

II. DATA OVERVIEW

We construct a panel dataset of annual observations covering 34 countries in Europe over the period 1990–2024, with particular attention to a subsample of Balkan countries—Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia.² This dual focus allows us to draw broad cross-country inferences while providing a more granular assessment of fiscal dynamics in economies that share common historical legacies, institutional challenges, and transitional constraints, yet have followed divergent post-socialist trajectories.

The primary dependent variable is government spending, measured. To capture the heterogeneity of fiscal responses, we also examine disaggregated components of government expenditure—current and capital spending—expressed as shares of GDP. The key explanatory variable is real GDP per capita, which serves as a proxy for economic growth and allows us to test the core predictions of Wagner’s law in contemporary Europe.

Estimating the causal effect of real GDP per capita growth on government spending poses well-known empirical challenges. Fiscal policy is not exogenous: public expenditures respond systematically to cyclical conditions through both automatic stabilizers and discretionary interventions. At the same time, economic growth may be influenced by prior fiscal decisions, generating reverse causality. In addition, unobserved institutional, political, or structural factors—such as fiscal rules, governance quality, or demographic trends—may jointly affect growth and public spending, biasing ordinary least squares (OLS) estimates. Absent credible identification,

² There is no universal agreement on the geographic definition of the Balkans. In this study, we focus on a subset of the region, excluding more developed countries such as Bulgaria, Croatia, Romania, and Slovenia, as well as Greece and Turkey, which are typically considered part of the wider Balkan Peninsula.

the estimated growth–government relationship may therefore reflect simultaneity and omitted-variable bias rather than a structural causal effect.

To address these concerns, we implement an IV strategy that exploits exogenous cross-country variation in the trade-weighted real GDP growth of a country’s trading partners. The instrument is motivated by the premise that external demand shocks—transmitted through established trade linkages—affect domestic output growth while remaining plausibly orthogonal to contemporaneous domestic fiscal policy decisions (Cevik, 2018; Cevik and Naik, 2023). In open economies such as those in Europe and the Balkans, partner-country growth constitutes a major source of exogenous variation in domestic economic conditions. The identifying assumption is that foreign growth influences domestic government spending only indirectly, through its effect on domestic income, thereby satisfying the exclusion restriction. This approach has been widely used in the open-economy macroeconomic literature and is particularly well suited to highly integrated European economies, where trade exposure is substantial and cross-border spillovers are strong.

Our empirical specification incorporates a standard set of control variables to mitigate residual confounding. These include population growth, which captures demographic pressures on public finances; consumer price inflation, reflecting macroeconomic stability and nominal budget dynamics; and trade openness, measured as the ratio of exports plus imports to GDP, which accounts for countries’ differential exposure to external shocks and varying degrees of integration into global markets. We further examine whether fiscal space—proxied by the public debt-to-GDP ratio—conditions the responsiveness of government spending to economic growth, thereby allowing for state-dependent effects across countries with heterogeneous debt burdens. All variables are obtained from the International Monetary Fund and the World Bank.

Table 1 reports summary statistics for the full sample and all variables included in the analysis. The data exhibit substantial cross-country and intertemporal variation in government spending dynamics. The mean growth rate of government expenditure is 0.3 percent, with observations ranging from –27.9 percent (Ireland, 2011) to 62.6 percent (Kosovo, 2002), reflecting episodes of sharp fiscal consolidation as well as rapid expansion. Disaggregated components—current and capital expenditure—display similarly pronounced dispersion. For example, Kosovo recorded the largest increase in current spending in 2020 in response to the COVID-19 pandemic, reflecting emergency fiscal measures to support health systems and social protection. Conversely, Lithuania experienced the largest contraction in capital spending in 1998, while Ireland saw the largest surge in capital expenditure in 2010 in the aftermath of the global financial crisis. These episodes illustrate the interplay of cyclical pressures, crisis responses, and country-specific policy decisions in shaping expenditure dynamics across Europe.

Real GDP per capita growth is likewise highly heterogeneous, ranging from –31.2 percent (Latvia, 1992) to 47.8 percent (Bosnia and Herzegovina, 1996), with an average growth rate of 2.2 percent over the sample period. Control variables—including population growth, inflation, and trade openness—also display considerable dispersion, underscoring the diversity of demographic

Table 1. Summary Statistics for Full Sample (1990-2024)

Variable	Observations	Mean	Std. dev.	Minimum	Maximum
Growth in government spending	989	0.3	6.7	-27.9	62.6
Current spending	724	0.2	5.5	-25.9	27.1
Capital spending	724	4.0	31.0	-75.4	248.8
Real GDP per capita growth					
Own	1,145	2.2	5.1	-31.2	47.8
Trading partners	1,190	2.3	2.3	-10.1	13.4
Population growth	1,156	0.1	1.1	-10.0	4.3
Consumer price inflation	1,121	10.8	66.9	-11.7	1,518.5
Trade openness	1,124	107.3	53.9	12.6	412.2
Public debt	1,025	58.2	33.6	3.9	209.9

Source: IMF; World Bank; authors' calculations.

Notes: Full sample countries include Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Malta, Moldova, Montenegro, Netherlands, North Macedonia, Poland, Portugal, Romania, Serbia, Slovak Republic, Slovenia, Spain, and Sweden.

conditions, macroeconomic environments, and degrees of economic integration across European economies. This pronounced heterogeneity provides substantial variation for identification while highlighting the importance of a strategy that credibly isolates exogenous growth fluctuations.

A comparison between Balkan and other European economies, reported in Appendix Tables A1 and A2, reveals pronounced differences in both fiscal and macroeconomic dynamics. On average, government spending growth is substantially higher in the Balkans, at 1.3 percent, compared with 0.2 percent in the rest of Europe. The dispersion of spending growth is also greater among Balkan countries: values range from –17.8 percent to 62.6 percent, whereas in other European economies the range spans –27.9 percent to 38.6 percent. Real GDP per capita growth exhibits a similarly marked divergence. The Balkan average of 3.9 percent significantly exceeds the 1.9 percent observed in other European countries, reflecting faster convergence dynamics from lower initial income levels.

These contrasts are consistent with the distinct economic and institutional trajectories observed across Balkan economies. Over the sample period, these countries underwent profound structural transformation, post-socialist restructuring, and extensive institutional rebuilding—often in parallel with EU accession processes. Episodes of rapid growth were frequently accompanied by sizable fiscal adjustments, reflecting both the demands of fiscal consolidation and broader efforts to modernize public sector institutions. Taken together, these dynamics underscore the extent to which the Balkan economies have operated under a dual transition: converging toward higher income levels while simultaneously strengthening fiscal and institutional capacity. In contrast, mature European welfare states operated from higher initial income and expenditure levels, within more established fiscal governance frameworks and under

tighter supranational constraints. As a result, both the level and volatility of fiscal and growth outcomes differ systematically across the two groups.

The greater variability in both spending and growth among Balkan economies underscores the importance of explicitly accounting for cross-country heterogeneity when evaluating the growth–government spending nexus. Without a strategy that isolates exogenous variation in income growth and controls for structural differences, estimated relationships may reflect transitional dynamics, crisis episodes, or institutional shifts rather than a stable structural linkage.

III. EMPIRICAL STRATEGY AND RESULTS

The empirical objective of this paper is to assess the validity of Wagner’s law using a panel of 34 countries over the period 1990–2024, and to investigate whether the relationship between government spending and economic growth in the Balkans differs from that observed elsewhere in Europe. Following standard practice in the empirical literature on Wagner’s law, we begin by estimating a fixed-effects OLS specification that accounts for unobserved country-specific heterogeneity while capturing the average relationship between real GDP per capita growth and changes in government expenditure:

$$\Delta gov_{i,t} = \alpha + \beta \Delta gdp_{i,t} + \delta X_{i,t} + \eta_i + \mu_t + \varepsilon_{it}$$

where $gov_{i,t}$ and $gdp_{i,t}$ denote government spending and real GDP per capita in country i and time t . $X_{i,t}$ denotes a vector of control variables as described in the previous section. The η_i and μ_t coefficients denote the time-invariant country-specific effects and the time effects controlling for common shocks that may affect economic growth across all countries in a given year, respectively, while ε_{it} is an idiosyncratic error term. To account for possible heteroskedasticity, robust standard errors are clustered at the country level.

While fixed-effects OLS controls for time-invariant unobserved heterogeneity across countries, it imposes a strong assumption of homogeneity in both short-run and long-run dynamics—an assumption that may be overly restrictive given the substantial diversity in economic structures, fiscal institutions, and policy regimes within our sample. In particular, fixed-effects OLS may fail to capture heterogeneous adjustment processes in the relationship between government spending and economic growth, potentially obscuring important country-specific short-run responses.

To address this limitation, we employ the pooled mean group (PMG) estimator, which allows short-run dynamics and error variances to vary across countries while imposing homogeneity only on the long-run coefficients. This approach strikes a balance between flexibility and parsimony: it accommodates idiosyncratic short-run responses to economic fluctuations while retaining a common long-run equilibrium relationship across countries. By explicitly modeling heterogeneous dynamics, the PMG estimator enhances the robustness of our findings and provides a richer understanding of the cointegration structure underlying Wagner’s law, capturing both long-run tendencies and short-run adjustments. Although the model is specified in growth rates to capture short-run dynamics, the PMG framework identifies an underlying cointegrating relationship between government spending and income. The reported long-run

coefficients should therefore be interpreted as the equilibrium elasticity linking these variables, providing a direct test of Wagner-type behavior within an error-correction representation.

To further mitigate endogeneity concerns, we complement the PMG framework with an IV strategy, using the trade-weighted output growth of a country's trading partners as an external instrument for domestic economic growth. Following Cevik (2018) and Cevik and Naik (2023), this approach leverages exogenous growth spillovers transmitted through trade linkages, isolating variation in domestic output growth that is plausibly exogenous to contemporaneous fiscal policy decisions. Together, these methodological choices provide a robust framework for estimating the causal relationship between income growth and government spending, extending the analysis beyond simple correlations and allowing for meaningful inference on the applicability of Wagner's law in contemporary Europe and the Balkans.

To validate Wagner's law, the estimated coefficient on real GDP per capita growth should be equal to or greater than unity, reflecting the hypothesis that government spending increase more than proportionally with income. Under a broader interpretation, even a positive coefficient below one would indicate that government spending rises with real GDP per capita, consistent with the general intuition of income-driven state expansion.

We begin the empirical analysis by reporting the results from OLS estimations in Table 2. Columns [1] and [2] present specifications for the full sample of countries, columns [3] and [4] focus on Balkan economies, and columns [5] and [6] report results for other European countries. These specifications incrementally include control variables, allowing us to assess the robustness of the income–government relationship across alternative model formulations.

The results provide no empirical support for Wagner's law in Europe during the period 1990–2024. Contrary to the classic expectation of a positive, and potentially more-than-proportional, relationship between income growth and government size, the estimated coefficient on real GDP per capita growth is negative and statistically significant at the 1 percent level across all specifications. This negative relationship persists even after controlling for covariates, highlighting its robustness.

Quantitatively, the findings are economically meaningful. A one-percentage-point increase in real GDP per capita growth is associated with a 0.57-percentage-point decline in the growth rate of general government spending. This negative elasticity suggests that, in contemporary Europe, government size contracts rather than expands in periods of stronger economic performance. We obtain broadly similar results for the sample excluding Balkan countries, both in terms of the magnitude and statistical significance of the estimated coefficient on economic growth, though the magnitude of the contraction is somewhat more pronounced in high-debt and institutionally constrained economies. In contrast, when the model is estimated exclusively for Balkan countries, the effect of income growth on government spending becomes statistically insignificant, with the estimated coefficient approximately half the size (-0.33) of that observed for other European countries, though it retains a negative sign. This loss of statistical significance is partly attributable to the smaller sample and higher volatility in both GDP growth and government spending ratios during the transition period.

Table 2. Government Spending and Economic Growth: OLS

	All		Balkans		Rest of Europe	
	[1]	[2]	[3]	[4]	[5]	[6]
Real GDP per capita growth	-0.521*** [0.100]	-0.565*** [0.095]	-0.330 [0.301]	-0.324 [0.389]	-0.564*** [0.106]	-0.603*** [0.097]
Population growth		-0.136 [0.291]		-0.073 [0.385]		0.142 [0.367]
Inflation		-0.048*** [0.005]		0.286 [0.220]		-0.052*** [0.004]
Trade openness		0.001 [0.009]		0.018 [0.054]		-0.002 [0.009]
Number of observations	982	981	137	137	845	844
Number of countries	34	34	6	6	28	28
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.42	0.44	0.54	0.54	0.44	0.46
Note: The dependent variable is the growth rate of government spending. Robust standard errors are reported in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.						
Source: Author's estimations.						

However, the distinct fiscal patterns observed in the Balkans cannot be fully attributed to statistical limitations. Additional evidence points to genuine structural heterogeneity between Balkan countries and the rest of Europe. Notably, population growth is negatively associated with government spending in the Balkans, whereas the relationship is positive in other European countries, suggesting that demographic pressures translate more directly into spending demands outside the region. Inflation exhibits a stronger—albeit statistically insignificant—positive correlation with government spending growth in the Balkans, consistent with a greater reliance on nominal adjustments to preserve real public sector wages in environments with less firmly anchored inflation expectations. The inclusion of inflation as a control variable also mitigates concerns related to nominal scaling effects, allowing the estimated relationships to be interpreted in real terms without requiring a separate specification in levels. Trade openness is positively correlated with government spending in the Balkans but negatively elsewhere, potentially reflecting that deeper integration in more advanced European economies intensifies competitive pressures for fiscal discipline and constrains the scope for state expansion.

These differential responses suggest that fiscal dynamics in the Balkans are shaped by distinct macroeconomic conditions and institutional arrangements relative to advanced European welfare states. Contributing factors include: (i) incomplete transition from socialism to market economies,

with residual state ownership in key sectors affecting measured government spending; (ii) weaker automatic stabilizers, due to underdeveloped social insurance systems, narrow tax bases, and high informality, which dampen countercyclical adjustments; (iii) binding fiscal rules and external constraints, imposed via EU accession conditionality, IMF programs, or market discipline, limiting discretionary spending regardless of domestic income growth; (iv) higher macroeconomic volatility, generating more frequent and larger shocks that disrupt systematic growth–spending relationships; and (v) institutional capacity constraints in budget planning, execution, and forecasting, which weaken the responsiveness of fiscal policy to economic conditions.

Overall, these results challenge the conventional interpretation of Wagner’s law as a universal economic regularity. Rather than exhibiting an automatic, income-driven expansion, government expenditures in contemporary European economies appear to respond to countercyclical fiscal rules, debt management considerations, and institutional constraints. The observed procyclical contraction of government size during periods of growth underscores the importance of fiscal frameworks, automatic stabilizers, and political economy dynamics in shaping public spending—factors that may override the classical income-driven mechanisms postulated by Wagner.

To further explore these dynamics, we decompose the effects into short- and long-run components by re-estimating the models using the PMG estimator. Results, reported in Table 3, are broadly consistent with the OLS estimates and again provide no evidence supporting Wagner’s law. In the baseline specification without controls (column [1] for the full sample), long-run effects are more pronounced than short-run dynamics; however, both coefficients remain negative and statistically significant at the 1 percent and 5 percent levels, respectively. The estimated long-run elasticity is -0.95 for the full sample and increases in absolute value to -1.04 when Balkan countries are excluded (column [5]), implying that long-run increases in real GDP per capita are associated with nearly proportional declines in government expenditures. These long-run coefficients can be interpreted as the elasticity of government spending with respect to income in the underlying equilibrium relationship. As such, they provide a direct test of Wagner-type behavior, despite the dynamic specification being expressed in growth rates.

For the Balkan sample, by contrast, the long-run negative relationship becomes statistically insignificant, while short-run effects are larger and highly significant (column [3]). This pattern indicates substantial heterogeneity in fiscal behavior: Balkan economies exhibit stronger short-run responsiveness but weaker long-run linkages between growth and government size compared to more advanced European economies.

Including control variables produces a similar pattern, though the magnitude of the long-run coefficients diminishes, aligning more closely with OLS estimates. Specifically, the estimated long-run income elasticity declines from -0.95 to -0.60 for the full sample, from -1.04 to -0.67 for non-Balkan European countries, and remains broadly unchanged at -0.19 for the Balkans. These differences likely reflect cross-country variation in fiscal space and institutional capacity, as well as heterogeneous interactions with other determinants—such as population growth, inflation, and trade openness—between Balkan economies and the rest of Europe.

Table 3. Government Spending and Economic Growth: PMG

	All		Balkans		Rest of Europe	
	[1]	[2]	[3]	[4]	[5]	[6]
Long-Run Equation						
Real GDP per capita growth	-0.953*** [0.056]	-0.600*** [0.063]	-0.191 [0.190]	-0.197 [0.236]	-1.039*** [0.057]	-0.668*** [0.065]
Population growth		-0.232 [0.303]		-0.782 [0.677]		-0.094 [0.329]
Inflation		-0.058*** [0.015]		0.032 [0.170]		-0.063*** [0.016]
Trade openness		-0.002 [0.007]		0.029 [0.030]		-0.007 [0.007]
Short-Run Equation						
Real GDP per capita growth	-0.179** [0.063]	-0.270*** [0.066]	-0.508*** [0.139]	-0.460** [0.200]	-0.140* [0.074]	-0.217** [0.071]
Population growth		-3.646** [1.534]		-3.395 [2.235]		-4.565** [2.072]
Inflation		0.105 [0.069]		0.068 [0.102]		0.116 [0.081]
Trade openness		-0.166*** [0.040]		-0.164 [0.106]		-0.171*** [0.044]
ECT	-0.913*** [0.039]	-0.920*** [0.041]	-0.960*** [0.050]	-0.963*** [0.043]	-0.907*** [0.048]	-0.925*** [0.048]
Number of observations	948	947	131	131	817	816
Number of countries	34	34	6	6	28	28
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Note: The dependent variable is the growth rate of government spending. Robust standard errors are reported in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.						
Source: Authors' estimations.						

Short-run dynamics also adjust with the inclusion of controls. For the full sample, the short-run elasticity increases from -0.18 to -0.27 ; for non-Balkan Europe, it rises from -0.14 to -0.22 , mirroring the attenuation in long-run effects. In the Balkan sample, the short-run elasticity decreases slightly from -0.51 to -0.46 , suggesting that short-run fiscal adjustments are more sensitive to demographic and macroeconomic conditions in these economies. This reflects both

tighter fiscal constraints and a stronger reliance on discretionary adjustments relative to more advanced European economies.

Collectively, these findings highlight heterogeneity in the growth–government nexus, with Balkan countries exhibiting distinct short-run dynamics and weaker long-run responses compared to mature European economies. They underscore that contemporary fiscal behavior is shaped not merely by income growth but by institutional, structural, and macroeconomic contexts that vary markedly across countries and regions.

The error correction term (ECT) is negative and statistically significant across all specifications, confirming the existence of a stable long-run equilibrium relationship between government spending and economic growth. The magnitude of the ECT coefficient—consistently exceeding -0.90 —indicates a relatively rapid adjustment process, whereby deviations from the long-run equilibrium are corrected by approximately 90 percent within one period. This rapid reversion is particularly pronounced for Balkan countries, reflecting a stronger fiscal response mechanism that realigns government expenditures swiftly with underlying economic fundamentals. Such expedited adjustment likely arises from tighter fiscal constraints, elevated macroeconomic volatility, and heightened sensitivity to economic fluctuations in transitional economies, underscoring the critical role of short-run fiscal policy dynamics in these regions.

To address endogeneity concerns, we complement the PMG estimations with a two-stage least squares instrumental variable (2SLS-IV) approach. Specifically, we instrument a country's real GDP per capita growth using the trade-weighted real GDP growth of its trading partners, exploiting the intuition that external demand shocks transmitted via trade linkages affect domestic economic conditions while remaining plausibly exogenous to domestic fiscal policy decisions on government size. This approach isolates variation in domestic growth that is less likely to be contaminated by reverse causality or unobserved confounders.

Standard IV diagnostics support the validity of this strategy. The underidentification test rejects the null hypothesis, with Kleibergen–Paap rk LM statistics of approximately 25 for the rest of Europe and 30 for the full sample, indicating instrument relevance. The Cragg–Donald Wald F statistic exceeds conventional critical values—at least 70 for the Balkan sample and over 450 for both the rest of Europe and full samples—demonstrating strong instrument relevance. The Kleibergen–Paap rk Wald F statistic also comfortably exceeds the 1 percent critical value of 10, confirming the strength of the instruments in line with Staiger and Stock (1997). Collectively, these diagnostics indicate that the IV models are well-identified, though results should be interpreted with appropriate caution, given the standard limitations of cross-country instruments.

The 2SLS-IV estimates, reported in Table 4, are consistent with the OLS and PMG results, while indicating a larger economic effect. Across all specifications, the coefficient on instrumented GDP growth is negative and statistically significant at the 1 percent level. In the full sample, a one-percentage-point increase in real GDP per capita growth corresponds to a 1.14-percentage-point decline in the growth rate of general government spending. Estimating the model separately for

Table 4. Government Spending and Economic Growth: 2SLS-IV

	All		Balkans		Rest of Europe	
	[1]	[2]	[3]	[4]	[5]	[6]
Trade-weighted real GDP growth	-1.139*** [0.090]	-1.135*** [0.092]	-1.078*** [0.176]	-1.115*** [0.172]	-1.151*** [0.101]	-1.151*** [0.104]
Population growth		-0.623 [0.414]		-1.320** [0.478]		-0.176 [0.406]
Inflation		-0.064*** [0.005]		0.167** [0.070]		-0.069*** [0.006]
Trade openness		-0.013 [0.008]		-0.016 [0.039]		-0.017** [0.008]
Number of observations	982	981	137	137	845	844
Number of countries	34	34	6	6	28	28
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.58	0.61	0.55	0.63	0.58	0.60
Kleibergen–Paap rk Wald LM-stat	30.0	29.9	5.4	5.4	24.7	24.5
Kleibergen–Paap rk Wald F-stat	68.5	72.6	17.1	124.8	53.7	57.0
Cragg–Donald Wald F-stat	518.8	550.1	70.3	79.5	448.6	465.9
Note: The dependent variable is the growth rate of government spending. Robust standard errors are reported in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.						
Source: Authors' estimations.						

the Balkans and the rest of Europe produces similar results, with a slightly smaller coefficient for Balkan countries (−1.12) compared to other European economies (−1.15), suggesting broadly similar long-run patterns once endogeneity is addressed.

Under the IV specification, inflation and population growth gain statistical significance, particularly for the Balkans. This likely reflects the heightened fiscal pressures that demographic shifts and price-level changes impose on transitional economies, where public spending must respond to population dynamics and inflationary episodes. These findings reinforce the interpretation that the negative growth–spending relationship is robust and economically meaningful, highlighting that faster GDP growth does not automatically translate into larger government size in contemporary European economies, and may, under binding fiscal constraints and institutional pressures, be associated with relative contraction in government expenditure.

Table 5. Expenditure Components and Economic Growth: 2SLS-IV

	All		Balkans		Rest of Europe	
	Current	Capital	Current	Capital	Current	Capital
Trade-weighted real GDP growth	-1.203*** [0.085]	-0.291 [0.576]	-1.214*** [0.232]	1.332 [1.156]	-1.204*** [0.088]	-0.624 [0.619]
Population growth	-0.618** [0.321]	-0.771 [1.513]	-1.081** [0.545]	0.387 [2.291]	-0.419 [0.385]	-0.287 [1.725]
Inflation	-0.035** [0.002]	0.157*** [0.015]	0.160 [0.121]	-0.118 [0.422]	-0.035*** [0.001]	-0.151*** [0.016]
Trade openness	-0.021** [0.007]	0.006 [0.023]	-0.045 [0.035]	0.163* [0.099]	-0.021** [0.007]	-0.012 [0.020]
Number of observations	724	724	109	109	615	615
Number of countries	28	28	6	6	22	22
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.59	0.59	0.61	0.61	0.58	0.58
Kleibergen–Paap rk Wald LM-stat	25.3	25.3	5.4	5.4	20.1	20.1
Kleibergen–Paap rk Wald F-stat	347.7	347.7	46.0	46.0	35.5	35.5
Cragg–Donald Wald F-stat	46.5	46.5	52.7	52.7	296.7	296.7

Note: The dependent variable is the growth rate of government spending. Robust standard errors are reported in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Source: Author's estimations.

To further explore cross-country heterogeneity and provide a more nuanced understanding of fiscal dynamics, we re-estimate the 2SLS-IV model with control variables while disaggregating government expenditure into current (consumption) and capital (investment) components. The results, reported in Table 5, reveal pronounced heterogeneity across expenditure categories. Decomposing total expenditure into its major components reveals that the negative relationship between economic growth and government spending is driven primarily by the behavior of current expenditure. For the full sample, a one-percentage-point increase in real GDP per capita growth is associated with a 1.20-percentage-point decline in the growth rate of current spending. Estimating the model separately for the Balkans and the rest of Europe yields virtually identical coefficients (−1.21 and −1.20, respectively), indicating that once endogeneity is addressed, the procyclical contraction of current expenditure during growth episodes is a common feature across European economies rather than a region-specific phenomenon.

Table 6. Government Spending and Economic Growth: Role of Debt (2SLS-IV)			
	All	Balkans	Rest of Europe
Trade-weighted real GDP growth	-1.228*** [0.091]	-1.161*** [0.186]	-1.246*** [0.100]
Population growth	-1.166*** [0.304]	-1.395** [0.484]	-0.994** [0.326]
Inflation	-0.093** [0.037]	0.142 [0.091]	-0.124*** [0.038]
Trade openness	0.005 [0.011]	-0.012 [0.044]	0.003 [0.012]
Public Debt-to-GDP	-0.072*** [0.015]	-0.048 [0.067]	-0.072*** [0.015]
Number of observations	965	137	828
Number of countries	34	6	28
Country FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
R ²	0.63	0.66	0.62
Kleibergen–Paap rk Wald LM-stat	30.1	5.5	24.5
Kleibergen–Paap rk Wald F-stat	68.6	59.1	52.1
Cragg–Donald Wald F-stat	530.7	80.6	449.5
Note: The dependent variable is the growth rate of government spending. Robust standard errors are reported in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Source: Authors' estimations.			

By contrast, capital spending exhibits a much weaker and statistically insignificant relationship with economic growth, suggesting that public investment is relatively insulated from short-term cyclical dynamics. Estimating the model by region reveals a noteworthy divergence: in the Balkans, the coefficient on growth is positive—though statistically insignificant—whereas it is negative in the rest of Europe. While these effects lack precision, the differing signs point to potentially distinct fiscal adjustment mechanisms. In Balkan economies, growth episodes may create fiscal space for scaling up infrastructure and development projects, particularly in the context of EU accession and externally financed investment programs. In more advanced European economies, growth periods may instead coincide with consolidation efforts that restrain capital outlays or redirect spending toward debt reduction.

Overall, the disaggregated analysis underscores that the procyclical contraction of government size during expansions is concentrated in current expenditure, while capital spending remains broadly acyclical and institutionally anchored. This distinction highlights the importance of

expenditure composition in interpreting the growth–government nexus and shows that aggregate measures of government size can mask fundamentally different fiscal adjustment dynamics across spending categories.

We also examine whether fiscal space, measured by the public debt-to-GDP ratio, conditions the responsiveness of spending to real GDP per capita growth. Results indicate that fiscal space is a key determinant of the growth–spending relationship. Across the full sample, higher debt is associated with subsequent contractions in government spending, consistent with financing constraints and market discipline. Excluding Balkan countries, the negative effect of debt remains statistically significant, reflecting the stronger pressures faced by high-debt European economies. In contrast, in the Balkans, the debt coefficient is negative but not statistically significant, likely because public debt levels are generally lower and multilateral financing arrangements mitigate short-run constraints.

These findings suggest that fiscal space fundamentally shapes how governments respond to income growth. In high-debt countries, revenue gains are often used to reduce deficits rather than expand expenditure, whereas economies with moderate debt can maintain greater cyclical flexibility. Debt sustainability considerations therefore substantially reshape—and in constrained settings, effectively overturn—the positive growth–spending relationship implied by Wagner’s law.

Methodologically, it is important to note that cross-country correlations between income and government size reflect institutional, political, and historical differences alongside income effects. Our within-country fixed-effects approach isolates the impact of income changes within a given institutional setting, mitigating these confounding factors. Similarly, the PMG estimator separates short-run adjustments from long-run equilibrium effects. Income elasticities are negative and statistically significant in both horizons, and IV estimates confirm the same conclusion.

Taken together, the evidence indicates that in contemporary European economies—where fiscal rules, automatic stabilizers, and debt constraints shape policy—economic growth does not automatically lead to public sector expansion. This challenges the general applicability of Wagner’s law beyond the historical context in which it was originally formulated.

IV. CONCLUDING REMARKS

This paper revisits the question of government size by providing a regional reassessment of Wagner’s law for the Balkans and the rest of Europe over 1990–2024. Using a comprehensive panel dataset and an identification strategy addressing endogeneity concerns, the analysis shows that the relationship between economic growth and government spending is neither universal nor mechanically determined by income. Instead, observed expenditure patterns appear to be conditioned by institutional quality, fiscal constraints, structural legacies of post-socialist transitions, and evolving European fiscal governance. Contemporary government expenditure patterns therefore reflect the interaction of fiscal rules, institutional capacity, demographic pressures, and political economy considerations rather than income growth alone.

The results provide no support for Wagner's law. Faster GDP growth is associated with modest declines in government spending: a one-percentage-point increase in real GDP per capita growth corresponds to a 0.57-percentage-point decline in government expenditure growth. This finding is robust across specifications and persists when using an instrumental variable approach based on trade-weighted partner growth, suggesting that reverse causality or omitted variable bias does not drive the effect. These patterns indicate that income growth alone does not mechanically expand government size in contemporary Europe.

The observed reversal of Wagner's law appears to reflect multiple mechanisms. In mature welfare states, automatic stabilizers operate countercyclically, fiscal rules constrain discretionary spending during periods of rapid growth, and political economy dynamics can favor tax moderation over expenditure expansion. Decomposition shows that these negative growth–spending associations are concentrated in current expenditure, whereas capital spending is less responsive, consistent with the idea that strategic long-term investment is less sensitive to cyclical pressures.

Fiscal dynamics in the Balkans exhibit distinct patterns. Growth–spending relationships are generally weaker and often statistically insignificant, with responses to demographic, inflation, and trade factors differing from other European economies. These patterns are consistent with legacies of socialist fiscal systems, incomplete institutional transitions, macroeconomic volatility, weaker stabilizers, and EU accession-related constraints. The findings highlight that structural and institutional factors shape fiscal outcomes, without implying prescriptive targets for government size.

Overall, the results suggest that debates about “optimal” government size may benefit from shifting focus away from income-based benchmarks and toward the mechanisms that influence fiscal responsiveness, expenditure composition, and institutional effectiveness. In contemporary Europe, the scale of government interacts with institutional quality, fiscal frameworks, and the composition of spending to shape the observed growth–spending dynamics. Understanding these interactions helps explain variations across regions and periods, emphasizing the interpretive value of fiscal patterns rather than providing normative guidance on government size.

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Appendix Table A1. Summary Statistics: Balkan Countries

Variable	Observations	Mean	Std. dev.	Minimum	Maximum
Government spending growth	144	1.3	10.0	-17.8	62.6
Current spending growth	109	0.3	6.6	-13.7	27.1
Capital spending growth	109	6.0	33.1	-63.7	165.5
Real GDP per capita growth					
Own	175	3.9	6.7	-27.6	47.9
Trading partners	210	2.3	2.5	-7.6	12.2
Population growth	204	-0.5	1.5	-10	4.3
Consumer price inflation	173	10.0	33.7	-11.7	338.7
Trade openness	173	87.1	25.2	12.6	166.2
Public debt (% of GDP)	148	46.4	23.6	5.6	200.6

Source: IMF; World Bank; author's calculations.

Appendix Table A2. Summary Statistics: Other European Countries

Variable	Observations	Mean	Std. dev.	Minimum	Maximum
Government spending growth	845	0.2	5.9	-27.9	38.6
Current spending growth	615	0.1	5.3	-25.9	24.7
Capital spending growth	615	3.6	30.6	-75.4	248.8
Real GDP per capita growth					
Own	970	1.9	4.7	-31.2	23.4
Trading partners	980	2.3	2.3	-10.1	13.4
Population growth	952	0.2	0.9	-3.8	4.1
Consumer price inflation	948	11.0	71.3	-1.7	1518.5
Trade openness	951	111.0	56.9	33.8	412.2
Public debt (% of GDP)	877	60.2	34.6	3.9	209.9

Source: IMF; World Bank; author's calculations.



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