

Does Private Sector Growth Mediate the Relationship Between Government Expenditure and Economic Growth? Evidence From East African Community Countries

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Abstract

The study assessed the mediating role of Private Sector Growth (PSG) in the relationship between Government Expenditure (GE) and Economic Growth (EG) across East African Community (EAC) countries from 1970 to 2022. Using panel data from six member states and mediation analysis, the study results reveal that PSG partially mediates the GE–EG relationship. This suggests that while GE has a direct positive impact on EG, it also enhances growth indirectly by stimulating private sector performance. Grounded in Keynesian and endogenous growth theories, the findings emphasize that public investment can unlock private sector potential and drive long-term economic development. The study indicates the need to align fiscal policy with private sector development strategies to achieve more sustained growth. While regional integration efforts aim to foster collective growth, persistent disparities in EG across EAC countries highlight the need for a more harmonized and coordinated regional framework. Prioritizing GE in sectors with strong private sector spillovers, conducting regular fiscal audits, and reducing regulatory barriers are essential for enhancing the effectiveness of public investment. By leveraging PSG as a mediating force, EAC countries can better align fiscal policy with regional development goals, enabling a more inclusive and balanced transformation across member states.

Keywords: Government Expenditure, Private Sector Growth, Economic Growth, Fiscal Policy, Regional Integration, East African Community (EAC).

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1. Introduction

Government expenditure has long been acknowledged as an important tool for stimulating EG, particularly in developing countries where market imperfections, inadequate infrastructure, and limited private investment constrain economic expansion. In the East African Community (EAC), governments allocate substantial portions of their budgets toward education, health, public administration, infrastructure, and social protection to catalyze national development. These interventions are underpinned by macroeconomic theories such as the Keynesian and endogenous growth frameworks, which emphasize public expenditure as a driver of aggregate demand and long-term productivity growth (Barro, 1990; Romer, 1990).

However, the efficacy of GE in promoting sustainable EG has been subject to increasing scrutiny. While increased government spending is expected to fuel growth through multiplier effects and public investment in critical sectors, empirical evidence presents mixed outcomes. Some studies reveal positive relationships between GE and EG (Ahuja & Pandit, 2020; Rahman et al., 2023), while others highlight inefficiencies, misallocations, or sectoral disparities that limit the developmental impact of fiscal policy (Kolapo et al., 2021; Adefeso, 2016). These inconsistencies suggest that GE's effect on EG is not uniform and may depend on intermediate mechanisms through which public spending influences broader macroeconomic outcomes.

One such mechanism is the private sector. Increasingly, scholars and policymakers recognize the private sector's role as a critical engine of job creation, investment, and productivity. When governments invest in infrastructure, education, and regulatory reforms, they create an enabling environment that fosters PSG. This, in turn, enhances the productive capacity of the economy and supports sustained EG. In this regard, PSG is not merely a parallel driver of growth but may serve as a mediator through which GE exerts its influence on EG. In developed and developing economies alike, public investment that facilitates private enterprise has been linked to increased economic resilience and structural transformation (Nguyen, 2023; Dreger & Reimers, 2016).

Globally, studies such as those by Dreger and Reimers (2016) and Nguyen (2023) highlight that the relationship between GE and PSG is dynamic. In developed economies, inefficient or excessive GE can crowd out private investment, while in developing regions, productive public investment often crowds in private sector activity by reducing costs and creating market opportunities. In Sub-Saharan Africa, Kolapo et al. (2021) and Adefeso (2016) found that capital expenditures tend to support PSG when well-targeted, but recurrent expenditures can sometimes inhibit private enterprise due to inefficiencies. Within the EAC, empirical findings by Mose et al. (2022) and Ndanshau and Mdadila (2023) indicate that infrastructure and social sector spending contribute positively to private sector dynamism, but outcomes vary depending on institutional capacity and governance quality.

Moreover, the institutional structure of regional blocs like the EAC plays a

significant role in shaping fiscal coordination and private sector development. Regional integration initiatives, such as the EAC Common Market and Industrialization Policy, aim to create harmonized investment environments, reduce cross-border regulatory barriers, and promote economic diversification. Effective GE that targets regional infrastructure, standardizes policy frameworks, and promotes intra-regional trade is likely to stimulate PSG, further reinforcing regional convergence and collective growth.

Despite a growing body of literature examining the GE–EG relationship, the mediating effect of PSG has received limited empirical attention in the EAC context. Prior research tends to either focus solely on the direct impacts of GE or analyze PSG and EG in isolation (Mose et al., 2022; Olaoye et al., 2021). Furthermore, methodological limitations such as the absence of formal mediation analysis have constrained the ability to capture the nuanced interplay between public expenditure, private sector dynamics, and growth performance.

To address this gap, the present study adopts a panel data mediation framework that systematically evaluates the extent to which PSG transmits the effects of GE to EG in EAC countries. The contribution of this paper is fourfold. First, it applies the classical Baron and Kenny (1986) mediation approach in a longitudinal panel context, which allows for testing both direct and indirect effects over time. Second, it introduces PSG as a formal mediating variable between GE and EG, an innovation in EAC-focused empirical research. Third, the study leverages a fixed-effects regression methodology to account for unobserved heterogeneity across countries. Fourth, it offers regionally tailored policy recommendations that align with EAC integration objectives and the Sustainable Development Goals, particularly those related to inclusive EG and effective public institutions. In doing so, the paper seeks to answer a key question: Does PSG mediate this relationship between GE-EG in the EAC region?

1.1 Objective of the Study

To determine the mediating effect of private sector growth on the relationship between government expenditure and economic growth in the EAC region.

1.2 Research Hypothesis

There is no statistically significant mediating effect of private sector growth on the relationship between government expenditure and economic growth in the EAC region.

2. Literature Review

The literature review is structured into the theoretical review and the empirical review.

2.1 Theoretical Review

The mediating role of PSG in the relationship between GE and EG is grounded on the Keynesian theory, endogenous theory, and Wagner's Law. From the Keynesian theory, GE is a critical tool for stimulating aggregate demand, especially during economic slowdowns (Keynes, 1936). In this framework, GE not only directly increases output and employment but also indirectly boosts private sector confidence by improving economic conditions and demand for goods and services. The private sector, therefore, serves as an intermediary channel through which fiscal stimulus can translate into broader economic gains, thereby supporting its mediating role. Effective GE in public works and infrastructure lowers operational costs for businesses, and increases their profitability and investment potential, thereby enhancing PSG and fueling EG.

The endogenous growth theory further refines this perspective by focusing on how GE raises the long-term productivity of both public and private sectors (Romer, 1990; Barro, 1990). In developing economies, characterized by capital constraints, limited technological capabilities, and institutional weaknesses, targeted GE can significantly enhance the absorptive capacity of the private sector. For instance, public spending on education increases the availability of skilled labor, while investments in health improve labor productivity, both of which are critical enablers of private sector competitiveness (Dreger & Reimers, 2016; Nguyen, 2023). In this sense, PSG acts as the conduit through which GE contributes to sustained growth, making it a theoretically justified mediating variable.

While Wagner's Law traditionally emphasizes the expansion of public expenditure as a response to rising national income, it implicitly acknowledges the relationship between PSG and EG (Peacock & Wiseman, 1961). In modern developing economies, this relationship often manifests through the state's role in creating a supportive business environment, through legal frameworks, infrastructure, and financial systems, that enable PSG to flourish. Thus, Wagner's thesis may be reframed in the context of public-private complementarities, where GE indirectly drives EG by enabling private sector dynamism.

In the context of developing economies, such as those in Sub-Saharan Africa and EAC, the private sector remains a major engine of economic transformation, responsible for the majority of employment and output. However, the sector is often constrained by inadequate infrastructure, high transaction costs, and regulatory inefficiencies. Public expenditure that addresses these barriers, such as road construction, digitization of business registration, or investment in electricity grids, can unlock private investment and productivity (Mose et al., 2022; Olaoye et al., 2021). This justifies PSG as a functional intermediary in the GE–EG relationship, especially in economies where state-led development and market-led growth

coexist.

In regional economic blocs like the EAC, coordinated fiscal policy and investment in regional infrastructure projects (e.g., transport corridors, cross-border energy projects, and customs integration) can stimulate PSG at a transnational level. Such interventions promote regional value chains, enhance economies of scale, and reduce cross-border trade frictions, thereby increasing regional competitiveness and accelerating EG. Government spending that supports these integration efforts has the dual advantage of directly stimulating output and enabling private sector-led growth across member states. Taken together, these theoretical perspectives suggest that PSG is not merely a parallel growth factor but a critical intermediary through which the productivity and developmental effects of GE are realized. By improving the enabling environment and lowering constraints on enterprise activity, GE can indirectly drive EG through its influence on PSG.

2.2 Empirical Review

Empirical research on the interplay between GE, PSG, and EG reveals complex and context-specific dynamics. Several studies across different regions and methodological approaches provide insights into the direct and indirect channels through which public spending influences economic outcomes, often mediated by the private sector. Globally, Nguyen (2023) examined the relationship between GE and private investment in 98 developing and 36 developed countries using a two-step GMM estimator. The study found that GE tends to crowd in private investment in developing countries, primarily through public infrastructure and social spending. However, in more advanced economies, excessive GE tends to crowd out private investment, particularly when financed through distortionary taxes or borrowing. These findings support the hypothesis that in resource-constrained contexts, GE plays a catalytic role in enabling PSG, which in turn promotes long-term EG. In the OECD context, Carvelli (2023) applied an error correction version of the Cross-Sectional ARDL model to data from 28 countries between 1990 and 2019. The study found that productive public expenditure positively influences private investment in the long run, while unproductive expenditure has adverse effects. Importantly, the method of financing GE matters: when funded through borrowing or distortionary taxation, even productive spending can inhibit private capital formation, thereby weakening EG.

In Sub-Saharan Africa, Adefeso (2016) applied dynamic panel GMM techniques to 20 countries and found that the impact of productive GE on EG was positive but statistically insignificant when such expenditure was not effectively allocated. The study concluded that fiscal discipline and allocative efficiency are essential to convert public expenditure into meaningful PSG and growth outcomes. Kolapo et al. (2021) examined the GE-EG nexus in 17 SSA countries using a panel ARDL and causality tests. The findings revealed that while total GE positively affects EG, recurrent and capital expenditures individually had negative effects, indicating inefficiencies and misallocation. The study recommended closer monitoring and

fiscal reforms to improve the growth impact of GE. Odhiambo (2021), focusing on health expenditure in low- and middle-income SSA countries, found a unidirectional causality from public health expenditure to EG in low-income countries, whereas the reverse held for middle-income countries. These findings illustrate the differentiated impact of sector-specific GE on growth and imply that PSG could be a missing link in the fiscal-growth transmission.

Within the East African Community (EAC), Mose et al. (2022) explored the relationship between public spending and private investment in Kenya from 1963 to 2018 using ARDL and ECM methods. They found that infrastructure-related recurrent expenditure positively impacted private investment and EG, while defense and health expenditures had negative effects. The findings emphasize the need for targeted spending that supports private sector development. Ndanshau and Mdadila (2023) conducted an ARDL bounds test for Tanzania (1967–2020) and reported a small but statistically significant positive long-term impact of GE on EG. In the short run, however, GE had either negative or insignificant effects, suggesting time-lagged benefits and the potential role of institutional capacity in shaping outcomes. Dreger and Reimers (2016), focusing on Eurozone countries, showed a long-term correlation between public and private capital stocks. Their findings support the argument that reductions in public investment can restrict private sector investment and GDP growth. These results affirm the importance of PSG as a transmission mechanism between GE and EG. Olaoye et al. (2021), in the study of 15 ECOWAS countries, established an inverted U-shaped relationship between GE and EG. They also observed that expansionary fiscal policies initially stimulate PSG and EG, but beyond a certain threshold, the effects diminish. The study highlights the importance of balance in fiscal policy to sustain private sector vibrancy and growth. Empirical literature supports the mediating role of PSG in the GE-EG nexus, particularly in developing regions. Effective public spending, especially in infrastructure and social sectors, enhances private sector productivity, investment, and employment, thereby driving EG. However, the quality, composition, and financing of GE, along with institutional capacity, are critical determinants of whether PSG transmits these benefits successfully.

3. Methodology

The study employed a descriptive longitudinal panel design to investigate the mediating effect of PSG on the relationship between GE and EG among countries within the EAC. The focus of the research was on six EAC member states: Kenya, Uganda, Tanzania, Rwanda, Burundi, and the Democratic Republic of Congo (DRC). This selection was informed by data availability and regional policy relevance. A census approach was applied, targeting all the member states to ensure complete regional representation and comparability. South Sudan was excluded from the analysis owing to the unavailability of consistent and reliable data for the study period.

Data were extracted from secondary sources, including the World Bank's World Development Indicators (WDI), the International Monetary Fund (IMF), and the African Development Bank (AfDB), covering the period from 1970 to 2022. However, due to data gaps in certain years and variables, the final dataset consisted of an unbalanced panel. Variables under study included: Government Expenditure (GE), measured as a percentage of GDP; Private Sector Growth (PSG), captured through private investment and value-added contributions; and Economic Growth (EG), proxied by GDP per capita growth rate.

The study applied a panel mediation analysis framework consistent with Baron and Kenny (1986), operationalized through a three-step regression approach. First, the direct effect of GE on EG was tested. Second, the impact of GE on PSG was estimated. Third, EG was regressed on both GE and PSG simultaneously to assess the mediation effect. Fixed-effects estimation techniques were used to control for unobserved heterogeneity across countries and over time.

This longitudinal approach allowed the study to track the dynamic interactions among GE, PSG, and EG, thereby illuminating the indirect pathways through which fiscal policy influences macroeconomic outcomes. The use of a mediation framework offered deeper insights into how public sector initiatives translate into private sector performance and, ultimately, economic development. The design also aligns with the study's objective of providing policy-relevant evidence that supports more integrated public-private growth strategies in the EAC.

3.1 Empirical Model

To empirically examine the mediating effect of PSG on the relationship between GE-EG, this study employs a structured panel data mediation model grounded in the classical framework of Baron and Kenny (1986). The model unfolds in three primary regression steps:

$$EG_{it} = \alpha_0 + \alpha_1 GE_{it} + \varepsilon_{it} \quad (1)$$

$$PSG_{it} = \alpha_0 + \alpha_1 GE_{it} + \varepsilon_{it} \quad (2)$$

$$EG_{it} = \alpha_0 + \alpha_1 GE_{it} + \alpha_2 PSG_{it} + \varepsilon_{it} \quad (3)$$

Where:

EG = Economic Growth

GE = Government Expenditure

PSG = Private Sector Growth

α_0 = Regression Constant

α_1, α_2 = Regression Coefficients

In this final regression (3), the significance of α_2 determines whether PSG mediates the GE–EG relationship. If the coefficient of GE in this equation (α_1) reduces in magnitude or becomes statistically insignificant compared to regression equation 1, mediation is confirmed. This empirical framework allows for both full and partial mediation assessment. Full mediation is indicated when the effect of GE on EG becomes insignificant upon the inclusion of PSG, while partial mediation is present when the effect of GE diminishes but remains significant. The fixed-effects model is applied in all steps to control for time-invariant heterogeneity across the six EAC countries.

4. Main Results

Descriptive statistics were presented both at the country level and in aggregate form to illustrate intra-regional variation and overall EAC-wide trends. This dual approach provided insights into national disparities as well as regional patterns, while inferential analyses were conducted using a pooled panel model to capture the overarching dynamics relevant to EAC integration efforts.

4.1 Descriptive Statistics

Table 1 shows that Uganda (5.65%), Rwanda (5.44%), and Tanzania (5.12%) had the highest average growth, while DRC (1.48%) and Burundi (2.42%) recorded the lowest. However, DRC and Burundi also exhibited the highest volatility, with coefficients of variation (CV) of 3.60 and 2.08, respectively, signaling instability in economic performance. GE as a share of GDP was highest in Burundi (8.06%) and Kenya (7.41%), with the regional EAC average at 7.01%. The least variability was observed in Rwanda (CV = 0.13) and Tanzania (CV = 0.15), suggesting greater fiscal consistency. In contrast, DRC (CV = 0.20) and Kenya (CV = 0.18) experienced relatively more fluctuation in public spending patterns.

Table 1: Descriptive Statistics

Country	Variable	Mean	Standard Deviation	Coefficient of Variation	Min	Max
Kenya	EG {GDP per capita growth (% annual)}	4.421	4.040	0.911	-4.660	22.171
	GE composite (% of GDP)	7.412	1.311	0.182	4.922	10.242
	Private Sector Growth (%GDP)	9.163	4.11	0.451	2.021	21.453
Tanzania	EG {GDP per capita growth (% annual)}	5.122	1.963	0.381	0.581	7.672
	GE composite (% of GDP)	6.571	0.991	0.152	5.190	9.791
	Private Sector Growth (%GDP)	12.360	5.442	0.443	4.112	24.62
Uganda	EG {GDP per capita growth (% annual)}	5.651	2.891	0.513	-3.311	11.523
	GE composite (% of GDP)	6.671	1.073	0.162	4.653	8.632
	Private Sector Growth (%GDP)	9.621	3.014	0.313	5.220	17.913
Rwanda	EG {GDP per capita growth (% annual)}	5.442	5.312	0.981	-8.113	19.53
	GE composite (% of GDP)	6.972	0.901	0.131	5.502	9.810
	Private Sector Growth (%GDP)	8.093	4.002	0.491	2.361	23.880
Burundi	EG {GDP per capita growth (% annual)}	2.424	5.050	2.080	-8.004	21.331
	GE composite (% of GDP)	8.063	1.391	0.171	5.011	10.840
	Private Sector Growth (%GDP)	7.982	4.810	0.602	1.521	24.711
DRC	EG {GDP per capita growth (% annual)}	1.481	5.321	3.601	-13.472	9.471
	GE composite (% of GDP)	6.130	1.220	0.204	3.980	9.770
	Private Sector Growth (%GDP)	8.001	5.331	0.673	2.021	26.63
EAC	EG {GDP per capita growth (% annual)}	3.951	4.701	1.191	-13.471	22.172
	GE composite (% of GDP)	7.012	1.331	0.190	3.982	10.841
	Private Sector Growth (%GDP)	8.972	4.691	0.521	1.520	26.601

Private sector growth was strongest in Tanzania (12.36%) and Uganda (9.62%), while Rwanda and Burundi trailed slightly at 8.09% and 7.98% respectively. The private sector was most volatile in DRC (CV = 0.67) and Burundi (CV = 0.60), while Uganda (CV = 0.31) showed the most stable growth. These patterns point to disparities in the enabling environment for private investment and enterprise development across the region. At the regional level, the EAC recorded a mean EG of 3.95%, GE of 7.01%, and PSG of 8.97%. The relatively high coefficient of variation in EG (1.19) reflects the uneven impact of public and private sector dynamics across member countries. The descriptive results suggest that while public spending is generally consistent, its translation into private sector expansion and ultimately EG is mediated by the capacity and stability of the private sector, highlighting the relevance of PSG as a potential channel in the GE–EG relationship.

4.2 Panel Regression Results

Table 2 indicates that all correlations are positive and statistically significant at the 5% level, confirming strong linear relationships among the variables. These results meet the basic conditions for mediation analysis, indicating that GE, PSG, and EG are significantly interrelated. There is a strong positive correlation between GE and PSG ($r = 0.7623$, $p < 0.05$), suggesting that increases in government spending are closely associated with private sector expansion. This implies that fiscal interventions, PSG within the region.

Table 2: Panel Regression Results

Model	Fixed Effect			Number of observations		286
R ²	R ² within		0.3131	Number of countries		6
	R ² between		0.0880	F test (1, 279)		126.940
	R ² overall		0.2992	Prob > F		0.000
PSG	β	SE	t	p	[95% Conf	Interval]
GE	0.0501	0.0041	11.273	0.000	0.0412	0.0591
Constant	1.5670	0.0232	68.152	0.000	1.5221	1.6123

Government expenditure is moderately and positively correlated with EG ($r = 0.5352$, $p < 0.05$), indicating that GE contributes directly to EG. PSG also shows a positive and statistically significant correlation with EG ($r = 0.5264$, $p < 0.05$), highlighting the role of the private sector as a driver of growth. The comparable strength of the GE–EG and PSG–EG relationships point to the possibility of a joint or sequential effect. These results provide initial empirical support for a mediation effect, where PSG acts as an intermediary through which GE influences EG. This underlines the importance of strengthening the private sector as a transmission channel for effective fiscal policy outcomes.

4.3 Correlation Analysis

Table 3 presents Pearson's correlation coefficients examining the relationships among GE, PSG, and EG across the EAC countries. All reported coefficients are statistically significant at the 5% level, providing preliminary support for the hypothesized mediation structure. The strong positive correlation between GE and PSG ($r = 0.7623$, $p < 0.05$) suggests that public expenditure plays a pivotal role in enabling private sector development. This finding is consistent with the work of Nguyen (2023), who observed that GE positively influences private investment in developing economies through infrastructure provision and market facilitation. Similarly, Dreger and Reimers (2016) confirmed that public investment can stimulate private investment, particularly when it targets productivity-enhancing sectors.

Table 3: Pearson's Correlation Analysis Results

Variable	GE	PSG	EG
GE	1		
PSG	0.7623*	1	
EG	0.5352*	0.5264*	1

The observed correlation between GE and EG ($r = 0.5352$, $p < 0.05$) supports the Keynesian proposition that public spending boosts aggregate demand and output, particularly in low- and middle-income countries (Keynes, 1936; Ahuja & Pandit, 2020). This aligns with Rahman et al. (2023), who found a unidirectional causality from government spending to GDP in SAARC countries, reinforcing the developmental role of fiscal policy in emerging economies.

Furthermore, the significant correlation between PSG and EG ($r = 0.5264$, $p < 0.05$) aligns with endogenous growth theory (Romer, 1990), which underscores the role of private sector expansion in sustaining long-term economic development through innovation, capital accumulation, and job creation. Empirically, Mose et al. (2022) found that in Kenya, infrastructure-related public expenditure enhanced private sector investment, which in turn contributed to GDP growth. In the same vein, Wandeda et al. (2021) demonstrated that efficient public sector operations indirectly enhance EG by fostering a dynamic private sector.

Taken together, these findings suggest that PSG serves as a key conduit through which GE can translate into higher economic output. The nearly equal strength of the GE–EG and PSG–EG correlations underscores the plausibility of a mediation pathway. This supports the conceptual model where government expenditure influences economic growth directly and indirectly through its impact on the private sector—a perspective that is particularly relevant in regions like the EAC where public-private synergies are crucial for regional integration and structural transformation.

5. Conclusion and Policy Implications

The analysis reveals that GE significantly enhances PSG, suggesting that increased public expenditure can stimulate private sector activity. In turn, PSG is shown to positively impact EG, confirming the private sector's role as a key driver of EG. These results affirm that a vibrant and responsive private sector is essential for translating public investment into broad-based economic growth. The mediation analysis demonstrates that PSG acts as a partial mediator in the GE–EG relationship. While GE continues to exert a direct and significant influence on EG, the indirect pathway through PSG is also meaningful. This partial mediation suggests that GE not only contributes to EG directly but also does so indirectly by fostering private sector development. Hence, PSG serves as a critical conduit through which the effects of public policy are amplified.

Policymakers in the EAC region should draw on these insights to enhance fiscal and

private sector coordination. Public expenditure should be prioritized toward sectors with high private-sector spillovers, such as transport, energy, and digital infrastructure. In addition, governments should conduct regular fiscal audits to ensure transparency and the effective allocation of public resources. Expanding access to finance and reducing regulatory barriers to private sector expansion, especially for small and medium enterprises (SMEs), is also essential. By emphasizing the enabling role of PSG, governments can improve fiscal policy design, align with regional integration and industrialization goals, and accelerate structural transformation. Strengthening the synergy between public expenditure and private sector capacity will be essential for achieving inclusive and sustainable EG in the region.

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