



ECONOMIC GROWTH IN SUB-SAHARAN AFRICA: THE ROLE OF PUBLIC SECTOR EXPENDITURE AND GOVERNMENT EFFECTIVENESS

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ABSTRACT

This study investigates the long-run relationships and causal interactions between public sector expenditure, government effectiveness, and economic growth in Sub-Saharan Africa (SSA) over the period 2000-2023. The research is motivated by persistent ambiguities concerning whether public expenditure stimulates economic growth or adjusts in response to it, as well as the role of government effectiveness in facilitating this process. Public sector expenditure is disaggregated into allocations for education, health, defence, and public debt servicing to account for variations in the economic implications of different expenditure categories. The analysis employs panel data from 16 SSA countries and applies panel unit root tests, Pedroni and Kao cointegration tests, and panel Granger causality techniques, including the stacked common-coefficient approach, the Dumitrescu-Hurlin heterogeneous panel causality test, and a panel vector autoregression (PVAR) framework. Unit root tests indicate that all variables become stationary after first differencing, while cointegration tests confirm the presence of stable long-run relationships among the variables. The causality results show bidirectional causality between education expenditure and economic growth. Economic growth is found to Granger-cause defence expenditure and public debt servicing, whereas no causal relationship is detected between health expenditure and economic growth. Government effectiveness exhibits a unidirectional causal relationship with economic growth, with causality running from government effectiveness to economic growth. These findings suggest that the expenditure-growth nexus in SSA is neither uniform across expenditure types nor exclusively driven by expenditure. The study concludes that both institutional quality and the composition of public expenditure are critical to understanding the long-term fiscal-growth dynamics in the region. Accordingly, enhancing government effectiveness, alongside improving the productive allocation and management of public resources, is essential for translating fiscal expenditure into sustainable growth outcomes.

KEYWORDS: Public Sector Expenditure; Government Effectiveness; Economic Growth; Panel Causality; Sub-Saharan Africa

1. INTRODUCTION

Public expenditure serves as a critical fiscal instrument through which governments influence the pace and direction of economic activity. Beyond maintaining public administration, government spending provides infrastructure, education, healthcare, security and other services that shape productive capacity and private-sector activity. Keynes (1936) provides the conventional demand-side justification for government expenditure by arguing that fiscal expansion can stimulate aggregate demand, employment and output, particularly when productive resources are underutilised. From a longer-term perspective, public expenditure on human capital and productive infrastructure may also enhance productivity and expand an economy's productive capacity. Lucas (1988), for example, emphasises the role of human-capital accumulation in sustaining economic growth. The growth consequences of public expenditure therefore depend not only on its size but also on its composition and the institutional conditions under which public resources are managed.

This issue is particularly important in Sub-Saharan Africa (SSA), where governments face substantial expenditure requirements alongside persistent development constraints. Considerable public resources are required to address infrastructure deficits, improve education and healthcare systems, provide security and meet increasingly significant public debt obligations. Yet increases in government expenditure have not consistently been accompanied by corresponding improvements in economic performance and living conditions across the region. Persistent unemployment, poverty and deficiencies in public service delivery raise questions about whether expenditure allocations are sufficiently productive and whether governments possess the institutional capacity required to translate public resources into sustained economic outcomes. The relevant policy question therefore extends beyond whether government expenditure increases economic growth to whether particular expenditure components have a systematic long-run relationship with growth and the direction in which these relationships operate.



The composition of expenditure is important because different categories of government spending operate through different economic channels. Expenditure on education can improve human capital and labour productivity although its benefits may materialise only after considerable time. Health expenditure can enhance the quality and productivity of labour by reducing illness and improving life expectancy. Defence expenditure may provide the security necessary for investment and productive activity although excessive military expenditure can divert scarce resources from other productive sectors. Public debt servicing presents a different fiscal challenge because rising repayment obligations can reduce the resources available for infrastructure and social investment. Consequently, treating government expenditure as a single aggregate may conceal important differences in the relationships between individual expenditure components and economic growth.

The role of government effectiveness adds an institutional dimension to this relationship. Public expenditure cannot be assumed to produce equivalent outcomes across countries with different administrative capabilities. Effective governments are generally better positioned to formulate and implement policies, allocate resources, deliver public services and maintain the credibility of public institutions. North (1990) argues that institutions influence economic performance by shaping incentives and reducing uncertainty in economic interactions. Similarly, Kaufmann et al. (2009) demonstrate the importance of governance for economic and social development. Government effectiveness may therefore influence economic growth directly while also determining the environment within which public expenditure is converted into productive outcomes.

Empirical evidence on the expenditure-growth relationship remains inconclusive. Some studies report growth-enhancing effects of public expenditure while others find weak, insignificant or adverse effects. Ogundari and Awokuse (2018), for instance, examined the contribution of human capital to economic growth in SSA and demonstrated the importance of distinguishing between education and health dimensions. Kimaro et al. (2017) examined government expenditure, efficiency and economic growth among low-income SSA countries while Kolapo et al. (2021) considered the validity of Wagner's law in analysing government expenditure and growth in the region. Other studies have also established differences in the effects of expenditure depending on its composition, institutional setting and estimation technique.

An additional unresolved issue concerns the direction of causality. The Keynesian proposition broadly suggests that public expenditure can stimulate economic activity while Wagner's law proposes that government expenditure tends to expand as economies develop. These propositions are not necessarily mutually exclusive. A feedback relationship may exist in which productive public expenditure stimulates growth while expanding economic activity subsequently increases government revenue and fiscal capacity, enabling further public spending. Establishing correlation or estimating expenditure coefficients alone cannot distinguish among these possibilities. A causal framework is therefore necessary to determine whether expenditure precedes growth, growth precedes expenditure or the relationship operates in both directions.

Against this background, this study examines the long-run relationships and causal dynamics among public sector expenditure, government effectiveness and economic growth in 16 Sub-Saharan African countries over the period 2000–2023. Public expenditure is disaggregated into education, health, defence and public debt servicing. The analysis employs panel cointegration techniques to establish whether the variables share stable long-run relationships and complementary panel causality procedures, including the Stacked common-coefficient approach, Dumitrescu-Hurlin heterogeneous panel causality test and Panel Vector Autoregression (PVAR), - to investigate the direction of causal relationships.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Public Sector Expenditure, Government Effectiveness and Economic Growth

Public sector expenditure represents the financial resources committed by government to providing public goods and services, administering state institutions and meeting fiscal obligations. Its economic relevance derives from its capacity to affect aggregate demand in the short run and productive capacity over a longer horizon. The effectiveness of such expenditure nevertheless depends on what governments spend on, how efficiently resources are allocated and the institutional arrangements governing implementation.

Economic growth refers to a sustained expansion in the productive capacity and real output of an economy. Within the context of this study, real gross domestic product (RGDP) provides the measure of economic performance. Public expenditure can influence RGDP through several channels. Education and health expenditures contribute to human-capital formation while defence expenditure can influence the security conditions within which production and investment take place. Debt-servicing expenditure may instead constrain fiscal space when repayment commitments displace productive government investment.



Government effectiveness concerns the quality of public administration and the state's capacity to formulate and implement credible policies and provide public services. Kaufmann et al. (2009) associate government effectiveness with the quality of public services, the civil service and policy formulation and implementation. This institutional dimension is particularly relevant to SSA because expenditure allocations alone provide limited information about whether appropriated resources ultimately produce intended economic and social outcomes.

2.2 Theoretical Framework

The principal theoretical foundation of the study is the Keynesian theory of public expenditure. Keynes (1936) contends that government expenditure can influence aggregate demand and economic activity, especially where private demand is inadequate. Increased public expenditure raises demand directly and may generate multiplier effects through income, consumption and employment. The theory consequently predicts causality running from public expenditure to economic growth.

Wagner's law offers an alternative direction of causality. It proposes that the expansion of economic activity generates increasing demand for government services, administrative functions and social expenditure. Under this proposition, economic growth precedes and causes increases in public expenditure rather than being primarily caused by it. The two propositions provide an important basis for the causality analysis because evidence of expenditure-to-growth causality is more consistent with Keynesian reasoning while growth-to-expenditure causality provides support for Wagner's proposition. Bidirectional causality would indicate that both mechanisms operate simultaneously.

Endogenous growth theory further provides a basis for distinguishing productive components of expenditure. Lucas (1988) emphasises human-capital accumulation as an important source of sustained growth. Government investments in education and health may consequently affect output through improvements in knowledge, skills and labour productivity. Institutional theory complements this argument by recognising that economic outcomes depend on the rules and organisations governing economic interaction. North (1990) maintains that effective institutions reduce uncertainty and establish incentives conducive to productive economic activity. This provides theoretical justification for incorporating government effectiveness alongside fiscal expenditure.

Taken together, these perspectives imply that the relationship among government expenditure, institutional effectiveness and growth can operate in multiple directions. Public spending may promote growth, growth may expand fiscal capacity and demand for government services and institutional effectiveness may independently facilitate economic performance.

2.3 Empirical Review

Empirical studies have produced mixed findings concerning public expenditure and economic growth. Nurudeen and Usman (2010), using disaggregated government expenditure for Nigeria, demonstrated that the growth effects of government expenditure differed across expenditure components. Egbetunde and Fasanya (2013) similarly examined public expenditure and economic growth in Nigeria using an autoregressive distributed lag specification. These studies underscore the limitations of drawing conclusions from aggregate expenditure alone.

Evidence from SSA has likewise been heterogeneous. Kimaro et al. (2017) examined government expenditure, efficiency and economic growth in low-income SSA countries and drew attention to the importance of expenditure efficiency. Ogundari and Awokuse (2018) investigated human capital and economic growth in selected SSA countries and found that health and education dimensions do not necessarily make identical contributions to growth. Kolapo et al. (2021) investigated government expenditure and economic growth in SSA from the perspective of Wagner's law, further demonstrating continuing uncertainty about the direction of the fiscal-growth relationship.

Studies examining individual expenditure components also produce differing conclusions. Human-capital theory suggests that education expenditure should improve productivity although the effect may be delayed and dependent on the quality of educational outcomes. Health expenditure has similarly been linked with productivity and economic performance. Sarpong et al. (2018) found evidence connecting health and economic growth in selected SSA countries. Defence expenditure presents a less straightforward relationship because improved security can support investment while excessive defence allocation can crowd out expenditure on productive and social sectors. Public debt servicing can likewise reduce the fiscal resources available for development expenditure when debt obligations become substantial.

Institutional quality provides another explanation for divergent empirical results. D'Agostino et al. (2016) demonstrated that the relationship between government spending and growth is affected by corruption. Kaufmann et al. (2009) also established the broader



relevance of governance to development outcomes. These findings suggest that comparable levels of public expenditure can generate different economic outcomes depending on institutional and administrative effectiveness.

A further strand of the literature considers causal direction. Njoku et al. (2015) employed a Granger causality approach to investigate public spending and economic growth in Nigeria. Findings from the wider literature vary between unidirectional, bidirectional and absent causality. Such differences may reflect country-specific institutional conditions, expenditure structures, sample periods and methodological choices. For heterogeneous SSA economies, methods that permit country-level differences are therefore particularly relevant.

The empirical literature consequently leaves two related issues requiring further examination. First, evidence of a statistical relationship does not establish whether public expenditure drives growth or expands as a consequence of growth. Second, analyses that omit government effectiveness may overlook an important institutional determinant of economic performance. The present study addresses these issues by examining cointegration and causal dynamics among disaggregated public expenditure, government effectiveness and economic growth within a panel framework.

3. METHODOLOGY

3.1 Research Design, Data and Variables

The study adopts a quantitative panel-data design covering 16 Sub-Saharan African countries over the period 2000-2023. The panel structure enables the analysis to exploit both cross-country and time-series variation while accounting for differences in economic and institutional conditions across countries.

Economic growth is represented by real gross domestic product (RGDP). The principal public expenditure variables are government expenditure on education (GEXEDU), government expenditure on health (GEXHLT), government expenditure on defence (GEXDEF) and government expenditure on public debt servicing (GEXPDS). Government effectiveness (GEFFT) captures the institutional dimension. The broader thesis additionally incorporates employment (EMPT), population (POP), trade openness (TOP) and inflation (INFLR) as relevant macroeconomic variables.

The empirical analysis follows a sequential procedure. Stationarity is first examined to avoid spurious inference. Cointegration tests are subsequently applied to determine whether stable long-run relationships exist among the variables. Finally, panel Granger causality techniques are used to identify causal direction.

3.2 Panel Unit Root Tests

Stationarity was assessed using five panel unit-root procedures: Levin-Lin-Chu (LLC), Breitung (BRG), Im-Pesaran-Shin (IPS), Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP). The use of several tests provides a more robust assessment because the procedures differ in their assumptions concerning common and heterogeneous autoregressive processes.

The general unit-root hypothesis is:

$$H_0: p_i = 1$$

against the alternative that the series is stationary. The results indicated that the variables attained stationarity after first differencing and were therefore treated as integrated of order one, $I(1)$. This outcome justified proceeding to panel cointegration analysis.

3.3 Panel Cointegration Analysis

Pedroni and Kao residual-based cointegration procedures were employed to determine whether public sector expenditure, government effectiveness and economic growth share stable long-run relationships. Pedroni (2004) permits heterogeneity in the cointegrating relationship across panel members while Kao (1999) provides a complementary residual-based test.

The null hypothesis for the tests is the absence of cointegration:

$$H_0 = \text{No cointegration}$$

against:

$$H_1 = \text{Cointegration exists}$$

Rejection of the null indicates that although individual variables may be non-stationary in levels, their linear combination is stationary, implying that they do not drift apart indefinitely and therefore possess a long-run equilibrium relationship.

3.4 Panel Granger Causality

Three complementary procedures were employed to evaluate causal direction: the Stacked common-coefficient test, the Dumitrescu-Hurlin heterogeneous panel causality test and the Panel VAR framework. The use of alternative procedures is important because the SSA economies in the sample are unlikely to exhibit identical fiscal-growth dynamics.

For two stationary variables X and Y, the underlying causality representation may be expressed as:



$$Y_{it} = \alpha_i + \sum_{k=1}^k \gamma_{ik} Y_{i,t-k} + \sum_{k=1}^k \beta_{ik} X_{i,t-k} + \varepsilon_{it}$$

The null hypothesis is that X does not Granger-cause Y. Rejection implies that lagged values of X contain statistically useful information for predicting Y beyond the information contained in the past values of Y.

The Dumitrescu-Hurlin procedure is particularly useful for heterogeneous panels because causal relationships need not be identical across countries. Dumitrescu and Hurlin (2012) allow the slope coefficients to differ across cross-sectional units. Panel VAR provides an additional dynamic framework in which the principal variables are treated as potentially endogenous.

4. EMPIRICAL RESULTS AND DISCUSSION

4.1 Stationarity and Long-Run Relationships

The panel unit-root results indicated that the series became stationary after first differencing. The evidence across the LLC, Breitung, IPS, ADF and PP procedures therefore supported an $I(1)$ characterisation of the variables, Establishing stationarity at first difference was important because regression among non-stationary variables without a cointegrating relationship could generate misleading statistical inference.

The cointegration analysis subsequently provided evidence of long-run relationships. In the analysis of government effectiveness and economic growth, the Pedroni common autoregressive coefficient statistics produced an ADF statistic of -3.726 and PP statistic of -4.154, both significant at the 1% level. Under the individual autoregressive specification, the ADF statistic was -2.334 and statistically significant although the PP statistic of -1.203 was insignificant. The Kao ADF statistic of -4.549 was also significant at the 1% level. Taken together, the evidence supports a stable long-run relationship between government effectiveness and economic growth.

The broader cointegration test incorporating public sector expenditure, government effectiveness and economic growth produced somewhat more heterogeneous evidence. The Pedroni common coefficient ADF statistic of -0.926 was insignificant while the PP statistic of -2.268 was significant at the 5% level. Stronger evidence emerged under the individual autoregressive specification, where the ADF statistic was -2.948 and the PP statistic was -1.956, both statistically significant. The Kao statistic of -1.372 provided additional evidence at the 10% level.

The difference between common and individual coefficient results is economically meaningful. SSA economies differ substantially in fiscal structures, administrative capacity, demographic characteristics and institutional development. A long-run relationship may therefore be more readily detected when cross-country heterogeneity is permitted rather than when an identical adjustment process is imposed on every country. The results nevertheless indicate that public expenditure, government effectiveness and economic growth exhibit a tendency to move together over time.

4.2 Causal Relationship between Education Expenditure and Economic Growth

The causality analysis revealed evidence of a feedback relationship between education expenditure and economic growth although the result varied across estimators. The Stacked test did not establish statistically significant causality from education expenditure to RGDP. In contrast, the Dumitrescu-Hurlin statistic of 5.339 was significant at the 5% level, indicating that education expenditure Granger-caused economic growth when cross-country heterogeneity was recognised. The reverse relationship was supported by the PVAR statistic of 8.388, which was significant at the 5% level.

The combined evidence therefore indicates bidirectional causality between education expenditure and economic growth. This finding provides an important reconciliation of Keynesian and Wagnerian arguments. The expenditure-to-growth direction is consistent with the proposition that investment in education can improve human capital and eventually productive capacity. Schultz (1961) associates educational investment with improvements in workforce productivity while the endogenous growth perspective of Lucas (1988) similarly assigns human capital accumulation a central role in long-run growth.

The reverse causality indicates that economic expansion itself creates conditions for higher education expenditure. Growth can increase government revenue and fiscal space while simultaneously increasing social demand for educational services. The result therefore suggests a reinforcing fiscal-growth mechanism rather than an exclusively expenditure-led process. It differs from studies such as Korkmaz and Guvenoglu (2021), Ahuja and Pandit (2020) and Kouton (2018), where unidirectional relationships between government expenditure and economic growth were reported.



4.3 Health Expenditure and Economic Growth

No statistically significant causal relationship was established between government health expenditure and economic growth. The Stacked statistics were 0.168 for the hypothesis that health expenditure does not Granger-cause RGDP and 0.466 for the reverse direction. The corresponding Dumitrescu-Hurlin statistics of 3.881 and 4.633 were also insignificant while PVAR produced statistics of 0.412 and 1.117.

The absence of Granger causality should not be interpreted as evidence that healthcare is economically unimportant. Rather, it indicates that within the model and sample period, past changes in health expenditure did not systematically improve predictions of economic growth and past growth did not systematically predict health expenditure. Health investment may affect economic performance through relatively long and indirect channels, including mortality, morbidity, labour-force participation and productivity. Sarpong et al. (2018), for example, established a significant relationship between health human capital and economic growth. The present causal evidence nevertheless suggests that expenditure allocations alone may not be sufficient to produce a predictable growth response across heterogeneous SSA countries.

4.4 Defence Expenditure and Economic Growth

The results indicate unidirectional causality from economic growth to defence expenditure. No significant evidence was found that defence expenditure Granger-caused economic growth. Conversely, the Dumitrescu-Hurlin statistic for the hypothesis that RGDP does not Granger-cause defence expenditure was 6.968, significant at the 1% level. The PVAR statistic of 11.53 was likewise significant at the 1% level.

This direction of causality suggests that defence expenditure in the sampled SSA countries is partly conditioned by economic capacity. As economies expand, governments acquire greater fiscal resources with which to finance security and defence commitments. Growth may also increase the economic assets and infrastructure requiring protection. The finding therefore provides greater support for a growth-driven expenditure interpretation than for the proposition that defence expenditure independently initiates economic expansion. This result should be distinguished from the possible indirect contribution of security to development. FitzGerald (2001) emphasises the economic importance of stability and security. The absence of Granger causality from defence spending to growth merely indicates that variations in defence expenditure did not systematically precede variations in RGDP in the panel. It does not imply that security conditions are irrelevant to investment or production.

4.5 Public Debt Servicing and Economic Growth

A similar unidirectional relationship emerged between economic growth and public debt servicing. The Stacked procedure did not establish significant causality in either direction. The Dumitrescu-Hurlin result, however, indicated that RGDP Granger-caused debt-servicing expenditure while the PVAR statistic of 8.474 was significant at the 5% level. No corresponding evidence showed that debt servicing Granger-caused economic growth.

This result suggests that improvements in economic performance influence governments' capacity to meet debt obligations. Expanding output can broaden the revenue base and provide additional fiscal resources for debt repayment. At the same time, the absence of reverse causality is consistent with the argument that debt servicing is fundamentally an obligation rather than a directly productive expenditure. When debt-service commitments become large, resources that might otherwise finance infrastructure or social investment are absorbed by repayment.

The finding differs from Akram (2010), who reported unidirectional causality from public debt to economic growth and associated excessive debt with weaker growth performance. Differences in debt structures, country samples and empirical approaches may account for the contrasting results.

4.6 Government Effectiveness and Economic Growth

The most consistent causal result concerns government effectiveness. All three approaches rejected the null hypothesis that government effectiveness does not Granger-cause economic growth. The Stacked, Dumitrescu-Hurlin and PVAR statistics were 3.060, 4.342 and 8.634, respectively, with significance at the 5% level. In contrast, the statistics for causality running from RGDP to government effectiveness were 0.196, 0.451 and 0.609, none of which was statistically significant.

The evidence therefore establishes unidirectional causality from government effectiveness to economic growth. This result has considerable institutional significance. Unlike several expenditure categories where economic growth itself appears to drive fiscal allocations, improvements in government effectiveness systematically precede improvements in economic performance. The result is



consistent with North's (1990) argument that institutions influence economic outcomes by establishing predictable rules and incentives. It also accords with Kaufmann et al. (2009), who emphasise the relationship between governance and development outcomes. Government effectiveness can influence growth through several channels. Greater administrative competence can improve policy implementation, reduce resource leakage, strengthen public service delivery and enhance the predictability of the environment in which private investment occurs. Consequently, fiscal resources may produce stronger economic outcomes when supported by capable public institutions. The absence of reverse causality also indicates that economic growth alone cannot be expected automatically to generate more effective government institutions.

4.7 Overall Interpretation of the Causal Dynamics

The findings reveal that the fiscal-growth relationship in SSA cannot be represented by a single causal mechanism. Education expenditure and economic growth exhibit feedback effects. Defence expenditure and public debt servicing are predominantly growth-driven while expenditure displays no statistically established causal direction. Government effectiveness, by contrast, exhibits a clear causal direction towards economic growth.

These patterns have implications for the Keynes-Wagner debate. The education result provides evidence compatible with both perspectives because expenditure predicts growth while growth also predicts expenditure. For defence and debt servicing, the evidence is more consistent with Wagnerian reasoning in the broad sense that expanding economic activity precedes increases in government expenditure. Government effectiveness introduces a separate institutional mechanism that neither theory fully captures. The evidence indicates that the capacity of government itself constitutes an important antecedent of economic performance.

5. CONCLUSION AND POLICY IMPLICATIONS

This study examined long-run relationships and causal dynamics among public sector expenditure, government effectiveness and economic growth in 16 Sub-Saharan African countries over the period 2000–2023. By disaggregating public expenditure into education, health, defence and public debt servicing and combining panel cointegration with three causality procedures, the analysis provides a more differentiated account of fiscal-growth relationships than can be obtained from aggregate expenditure alone.

The panel cointegration results establish that public sector expenditure, government effectiveness and economic growth share long-run relationships although the strength of the evidence varies between common and heterogeneous specifications. This variation itself reflects the structural diversity of SSA economies and cautions against assuming identical fiscal adjustment processes across countries. The causality findings demonstrate that expenditure categories do not relate to growth in a uniform manner. Education expenditure and economic growth exhibit bidirectional causality, suggesting a mutually reinforcing relationship in which education spending contributes to economic performance while expanding economies generate greater capacity for educational investment. No causal relationship was established between health expenditure and growth. Economic growth Granger-causes defence expenditure and public debt servicing without evidence of reverse causality. Most importantly, government effectiveness consistently Granger-causes economic growth across the Stacked, Dumitrescu-Hurlin and PVAR procedures while economic growth does not Granger-cause government effectiveness.

The findings have several policy implications. SSA governments should avoid treating increases in total expenditure as sufficient evidence of growth-oriented fiscal policy. The composition, implementation and institutional management of expenditure are equally important. The feedback relationship between education expenditure and growth provides a basis for protecting productive education investment, particularly expenditure capable of improving skills and labour productivity. At the same time, expenditure expansion should be accompanied by mechanisms that improve value for money and measurable outcomes.

The growth-to-defence and growth-to-debt-servicing relationships require a different policy response. Defence expenditure should be aligned with credible security requirements and medium-term fiscal capacity so that rising expenditure does not unnecessarily displace productive investment. Debt management should similarly focus on maintaining sustainable repayment obligations and ensuring that borrowed resources finance activities capable of strengthening future productive capacity.

The unidirectional relationship from government effectiveness to economic growth provides perhaps the clearest policy message. Improving public-sector administrative capacity, policy implementation, accountability and service delivery should be regarded as part of economic growth policy rather than merely an institutional reform agenda. Additional fiscal resources are unlikely to achieve their full economic potential where implementation systems remain weak.

The study is limited by its coverage of 16 SSA countries and by data availability over the period examined. Future research could extend the country coverage and investigate whether the causal relationships vary systematically with income levels, institutional quality, resource dependence or fiscal regimes. Further analysis using approaches that explicitly account for cross-sectional dependence and



institutional thresholds may also provide additional insight into the conditions under which public expenditure generates sustainable growth.

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