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# The Nexus Between Revenue Decentralization Reforms and Economic Growth

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## ORIGINAL ARTICLE

# The nexus between revenue decentralization reforms and economic growth

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**Abstract**

Revenue decentralization represents a framework that facilitates enhanced fiscal autonomy for subnational governments, thereby enabling the tailoring of services to meet local needs and potentially fostering economic growth. In Kenya, the ratification of the 2010 constitutional formalized novel revenue frameworks aimed at supporting the operations, management, and sustainability of devolved county governments. However, there remains a paucity of empirical analysis examining the relationship between the revenue decentralization reforms and county-level economic growth. We begin by identifying the main sources of county revenues within the decentralization frameworks, then investigate the dynamic interrelation with county economic growth. Through panel vector autoregression estimation techniques, our analysis reveals a positive and statistically significant association between own-source revenue and conditional grants with county-level economic growth. We discuss the implications of our findings and call for policymakers to reassess the fiscal instruments with the aim of strengthening the roles and responsibilities of counties.

**Key Takeaways**

- Revenue decentralization, in conjunction with fiscal instruments that facilitate the collection of own-source revenue, has the potential to stimulate economic growth at the county level.
- Conditional grants, while partially significant, demonstrate their capacity to promote economic growth in historically marginalized counties.

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- Our analysis reveals no substantial evidence that the equitable share of revenue significantly contributes to county-level economic growth.
- This paper highlights the necessity of ongoing restructuring of decentralization frameworks to enhance the autonomy and sustainability of county governments.

## INTRODUCTION

In the past decade, Kenya joined a list of many countries experimenting with devolved system of governance by decentralizing the central government's political powers and decision-making authority to county governments. The devolved system is also accompanied by revenue decentralization restructuring in which fiscal resources are transferred from the national government to the county government, revenue-raising authority is extended from national to also include county governments, and counties are permitted to spend and borrow independently. In essence, the devolution reforms provided county governments with a substantive level of fiscal autonomy to collect own source revenues and distribute fiscal resources according to local needs.

The theory of fiscal federalism provides different viewpoints on how the division of fiscal responsibility between the levels of government could enhance efficient and effective allocation of resources and stimulate economic growth. The theory helps with the “understanding of which functions are best centralized and which are best placed in the sphere of decentralized levels of government” (Oates, 1999, p. 1120). While the theory does not assert decentralization as a panacea to regional economic prosperity, it is contended that decentralized levels of government, given their knowledge and awareness of residents needs, will tailor public goods and services to particular preferences of their region, thus incentivizing regional economic welfare (Oates, 1972; Tiebout, 1956). Furthermore, decentralized units of government would require specific fiscal instruments to carry out their functions. In this regards, the theory holds that fiscal instruments between the levels of government should be guided by the principle of fiscal equalization, which ensures that devolved governments can raise revenues for services they provide, and where they have inadequate capacity, they would benefit from intergovernmental grants. In essence, the provision of intergovernmental grants would help create a fair playing ground for interjurisdictional competition (Oates, 1999).

The literature on revenue (fiscal) decentralization has predominantly centered around the principle of allocative efficiency, leading scholars to explore the relationship between revenue decentralization and various social-political and economic factors (Lindaman & Thurmaier, 2002; Martinez-Vazquez & McNab, 2003; Martínez-Vázquez & Vaillancourt, 2011; Shah, 2004, 1994; Smoke, 2001). However, fiscal decentralization concept presents several challenges to scholars, encompassing issues related to institutional arrangements, capacity building, and transparent financial management systems. These challenges hinder a clear estimation of the degree of decentralization and fiscal autonomy (Martinez-Vazquez & McNab, 2003; Rondinelli et al., 1983). Empirical issues arise in determining the definition of fiscal decentralization and ensuring consistency in estimates across comparable units (Martinez-Vazquez & McNab, 2003). Furthermore, skepticism exists regarding the accuracy of measures such as the IMF's Government Financial Statistics in reflecting the actual degree of fiscal autonomy (Bojanic, 2018; Martinez-Vazquez et al., 2016; Stegarescu, 2005). Some argue that existing tax-sharing formulas do not translate into genuine tax autonomy in practice (Lago-Peñas et al., 2017).

Consequently, much of the literature on revenue decentralization, particularly concerning economic growth, acknowledges the presence of heterogenous and multidimensional factors with potential bi-directional causal effects (Bodman, 2011; Iimi, 2005; Breuss & Eller, 2004;

Martinez-Vazquez & McNab, 2003). Various methodological approaches have been proposed to address this complexity. In a recent study, Mendoza-Velázquez et al. (2022) propose and demonstrate an approach to control for heterogeneity of fiscal variables, emphasizing the necessity of a dynamic approach for panel data as opposed to static econometric methods commonly used (Abrigo & Love, 2016; Holtz-Eakin et al., 1988). Mendoza-Velázquez et al. (2022) test the dynamic relations between revenue decentralization features, including (1) the share of total revenues (transfers), (2) own-source revenue, (3) public investments, (4) unconditional (*participaciones*), and (5) conditional (*aportaciones*) transfers with economic growth in 32 Mexico states.

In this study, we examine the nexus between revenue decentralization and economic growth in County Governments of Kenya. Specifically, we focus on the post-2013 devolution system that institutionalized new revenue structures for counties, but did not exist in the previous system of government. A few studies have found supporting evidence of the assumed relationship between revenue decentralization and economic growth while controlling for rates of budget absorption, school enrollment, human capital, electricity consumption, corruption, and crime (Mose, 2021; Naftaly et al., 2019). The empirical contribution of these studies is noted, so are the limitation in examining the contributions of all the major decentralized county revenues established in the post-2013 devolution arrangement. Therefore, our study investigates the dynamic relationship between the equitable share of revenue, own-source revenue, and conditional grants as primary decentralized county revenue, with the gross county product serving as the proxy for economic growth at the county level. Additionally, we investigate the relationship between development and recurrent expenditures with gross county product.

## LITERATURE REVIEW

### Revenue decentralization and economic growth debate

The academic literature encompasses a diverse array of case studies that evaluate the relationship between revenue decentralization and economic growth across a spectrum of developed and developing nations, yielding findings that are systematically unique and context specific. Some studies align with theoretical expectations, revealing positive outcomes of revenue decentralization on economic and development indicators (Blöchliger, 2013; Bojanic, 2018; Canare & Francisco, 2019; Hanif et al., 2020; Iimi, 2005; Jin & Zou, 2005; Martinez-Vazquez & McNab, 2003; Mendoza-Velázquez et al., 2022). Conversely, other studies report no significance or negative effects (Baskaran & Feld, 2013; Neyapti, 2010, 2004; Okonkwo & Godslove, 2015; Rodriguez-Pose & Ezcurra, 2011; Thornton, 2007), while some indicate a mixture of both positive and negative impacts (Bodman, 2011; Gemmell et al., 2013; Rodríguez-Pose & Krøijer, 2009; Slavinskaitė, 2017). Given these mixed outcomes, studies employ different variables that are challenging to measure, further complicated by variations in governing systems across countries, making it challenging to provide universally applicable policy recommendations (Stegarescu, 2005; Oates, 1999).

Moreover, scholars employ different indicators for testing the relationship between decentralization and economic development. Cross-country and single-country studies utilize measures such as expenditure decentralization, revenue decentralization, tax autonomy levels, and taxation systems (Akai et al., 2007; Akai & Sakata, 2002; Cantarero & Gonzalez, 2009; Ding et al., 2019; Gil-Serrate et al., 2011; Hanif et al., 2020; Jin & Zou, 2005; Kwon, 2003; Mendoza-Velázquez et al., 2022; Slavinskaitė, 2017). However, these measures are not consistently applied, leading scholars to resort to proxy estimates of revenue decentralization.

Indicators for economic and development are also diverse, including gross domestic product (GDP), inflation index, human development index, poverty index, income distribution, and other macro- and microeconomic stability factors (Bojanic, 2018; Lindaman & Thurmaier, 2002; Neyapti, 2010, 2004). Similarly, these indicators serve as proxies for endogenous and exogenous factors, providing scholars with robust estimates for growth and development.

Beyond the indicators and measurements, cross-country studies often overlook the origin and nature of intergovernmental arrangements in different governing systems. Scholars argue that cross-country comparisons may yield biased results due to under- or over-estimation of the extent of fiscal decentralization, emphasizing the importance of considering the division of revenues and functional responsibilities across government levels and the autonomy of subnational units over decentralized revenues and responsibilities (Oates, 1972; Stegarescu, 2005).

The current study focus on revenue decentralization reforms within a single country, Kenya, which has undergone comprehensive changes of its governing system, establishing a national government and 47 county governments with significant political, administrative, and fiscal autonomy. Constitutional provisions delineate fiscal responsibilities for both national and county governments, including revenue sharing strategies, offering an opportunity to characterize and assess revenue decentralization reforms at the county level.

It is however important to note that most African countries inherited highly centralized government systems and fiscal arrangements from their colonial past, influencing observable decentralization efforts. There are prevailing views that centralization is favored in African countries due to the perceived greater economies of scale for central governments in producing and providing public goods, coupled with concerns about weak administrative capacities of local governments to claim fiscal autonomy (Bahl & Linn, 1994). Some scholars argue that fiscal decentralization can jeopardize a nation's economic stability, efficiency, and unity in developing nations (Prud'Homme, 1995), and there may be a lack of political will to embrace fiscal decentralization systems (Neyapti, 2010). Consequently, some perceive decentralizing government structures and functions as fragile in African states (Brosio, 2002).

Despite these warnings, African nations continue to restructure their governing systems and to build capacity for local governments beyond deconcentration and delegation of roles and authorities (Hobdari et al., 2018; Rondinelli et al., 1983). In Kenya, devolution reforms have restructured the intergovernmental fiscal relations between the national and county governments, providing county governments with a significant power of the purse to distribute county revenues in accordance to local needs and demands (Fenno, 1966). The next section provides the historical context of Kenya's decentralization efforts leading to the current devolved system of governance.

## Devolution reforms and fiscal decentralization structures in Kenya

Since gaining independence in 1963, Kenya operated under a highly centralized government, encompassing political, fiscal, and administrative structures. The KANU regime, led by the late President Moi, progressively centralized political and institutional powers within the executive branch over its 24-year tenure. This centralization involved abolishing the inherited federal system and regional governments, replacing them with a centralized governing system. The provincial administration system was strengthened to manage central government interests locally, while local authorities' powers in local affairs were weakened (Bagaka, 2009; Boex & Smoke, 2020; Ndegwa, 1998; Orvis, 2006; Oyugi, 1994; Smoke, 1988; Throup, 1993; Tordoff, 1994). The regime also limited legislators' involvement in local affairs and resource management. Members of parliament were excluded from controlling resource utilization in their constituencies, leading to

power struggles between the executive and the legislative branch (Orvis, 2006; Oyugi, 1994; Throup, 1993).

This situation changed in 2003 after the NARC party's victory, leading to President Kibaki's leadership. Two notable changes during Kibaki's tenure were the establishment of the Constituency Development Fund (CDF) that granted members of parliament greater fiscal and development roles in their constituencies (Bagaka, 2009), and the push for constitutional reforms that was centered around the devolved system of governance, among other calls (Kramon & Posner, 2011).

The devolution system of government is grounded on the ideals of enhancing local governments autonomy to align resources to local needs. Additionally, historical inequalities, unresponsive central government agents, and poor alignment of regional priorities, contributed to the push for devolution (Boex & Smoke, 2020). The devolution reforms, among other reform agendas, formed the basis for the new constitutional order that was overwhelmingly adopted in the 2010 referendum (Kramon & Posner, 2011). County governments became operational after the March 2013 general elections, replacing the defunct local authority structures.

## Intergovernmental fiscal relations under the devolution system

In addition to devolution reforms, Kenya's intergovernmental fiscal relations evolved under the political influence discussed in the earlier section. Political influence was one aspect that led to the restructuring of the intergovernmental fiscal structure: other essential influencing factors include legal provisions, resource sharing, and organizational dimensions (Cooper, 2020). During the KANU regime, the executive branch was solely responsible for implementing the budget through decentralized structures such as government ministries and the provincial administration. The expenses of the local authorities were significantly reduced due to the transfer of some of their functions to the provincial administration, and their revenue sources were restricted by certain acts of Parliament (Boex & Smoke, 2020; Smoke, 1988). Moreover, the CDF structures introduced justifiable means to address imbalances in resource sharing and regional development, of which fund are utilized to alleviate poverty through community development projects. The results of these projects, however, prompted more fiscal problems by adding recurring costs to the national budget (Bagaka, 2009). Despite all that, much of the temporal view of intergovernmental fiscal relations was dominated by patronage politics, and regional imbalances persist in terms of development (Boex & Smoke, 2020).

The devolution reforms were then viewed as a viable alternative to many fiscal issues. To guarantee fiscal stability for county governments, the Constitution and the Public Finance Management Act restructured the intergovernmental fiscal relations between national and county governments. At first, the constitution spelled out new institutional arrangements between the two levels of government, and further assigned specific roles, responsibilities, and powers to them (Republic of Kenya, 2010). Beyond the institutional reorganization, the regulations specified three main source of county revenues—the equitable share of revenues, own-source revenue, and conditional grants. The equitable share of revenue is the primary and stable revenue source for counties, which is constitutionally prescribed at 15% of nationally raised revenues to be shared among the 47 county governments. Own-source revenue is the second source of county revenue, of which the constitution under Article 209 authorizes counties to impose local taxes and charges for services they provide locally. And the third source is conditional grants, which is a new fiscal instrument established through an equalization fund under Article 204 of the constitution. The funds are designated for supporting basic services like water, roads, health facilities, and electricity to historically marginalized regions (Republic of Kenya, 2010, 2012a).

## Allocative efficiency of county revenues

The tripartite structure of revenue decentralization, instituted through devolution reforms and articulated within the intergovernmental fiscal framework in Kenya, endows county governments with significant fiscal autonomy (Fenno, 1966). This framework allows county governments considerable latitude in the allocation of decentralized revenues, facilitating the tailoring of fiscal policies to address local needs and priorities. Numerous regulations stipulates that the decisions and activities undertaken by county governments must be aligned with and responsive to the needs and priorities of their constituents. Concurrently, the principles underpinning devolution mandate counties to ensure efficient and effective utilization of decentralized resources. This is aimed at catalyzing economic growth and fostering development within their respective jurisdictions, aligning with broader national development objectives. (Republic of Kenya, 2010, 2012a, 2012b). Thus, this study endeavors to explore the nexus between the equitable share of revenue, own-source revenue, and conditional grants with the economic growth of counties. Moreover, we examine whether county expenditures have any relations with county-level growth.

## DATA AND METHODOLOGY

### Data

This paper relies on several data sources to test the hypotheses that increased equitable share of revenue, reliance on own-source revenue, and conditional grants relates positively with county economic growth. Since counties did not exist prior to the observed reforms, there is no preperiod estimates for county's revenues and economic growth indicators. Therefore, this study is based on a 8-year period, 2013–2020. Data on county revenue estimates were obtained from published annual reports by the Controller of Budget (CoB), while the county economic growth data was obtained from the 2021 Kenya National Bureau of Statistics (KNBS) report.

The KNBS and CoB data sets were combined into a panel data set comprising 376 observations from 47 county governments over the 8-year period. Table 1 summarizes the descriptive statistics delineating decentralized revenues and the gross county product (GCP). The overall variation outlines the mean, minimum, and maximum amount of fiscal resources for all observations, while the between and within variations outlines the minimum and maximum amounts only considering the number of counties and the period of study, respectively. As indicated in Table 1, the equitable share emerges as the primary source of county revenues, with an average allocation of KSh. 5787 million. This share ranges from a minimum of KSh. 18,549 million to a maximum of KSh. 106,429 million across the 47 county governments. Overall, the equitable share has cumulatively increased from KSh. 190,000 million to approximately KSh. 316,500 million within the 8-year span.

Own-source revenue collection contributes roughly KSh. 720 million to county revenues, ranging from a minimum collection of KSh. 387 million to a maximum of KSh. 83,197 million across the 47 county governments. Similarly, own-source revenue has experienced significant growth over the 8-year period, ranging from a minimum of KSh. 26,296 million to a maximum of KSh. 40,305 million. Lastly, conditional grants constitute approximately KSh. 664 million of county revenues, with allocations ranging from a minimum of KSh. 3,000 million to a maximum of KSh. 12,440 million per county. Overall, conditional grant allocations to counties have escalated from a minimum of about KSh. 2600 million to a maximum of KSh. 58,481 million over the 8-year period.

The descriptive results about county expenditures indicate that, on average, counties allocate about KSh. 1938 million towards development expenditures and an additional KSh.



TABLE 1 Descriptive statistics for the study variables, 2013–2020.

Variable	Variation	Mean	Minimum	Maximum	Observation
GCP	Overall	150,551	15,357	2.268*	<i>N</i> = 376
	Between		149,464	15.742*	<i>n</i> = 47
	Within		6.015*	8.001*	<i>T</i> = 8
Development Exp.	Overall	1,938	32	6,433	<i>N</i> = 376
	Between		4832	36,227	<i>n</i> = 47
	Within		36,553	116,068	<i>T</i> = 8
Recurrent Exp.	Overall	4,760	709	24,506	<i>N</i> = 376
	Between		13,346	168,197	<i>n</i> = 47
	Within		147,354	281,946	<i>T</i> = 8
Equitable share	Overall	5,787	1501	15,920	<i>N</i> = 376
	Between		18,549	106,429	<i>n</i> = 47
	Within		190,000	316,500	<i>T</i> = 8
Own-source revenue	Overall	720	27	11,710	<i>N</i> = 376
	Between		387	83,197	<i>n</i> = 47
	Within		26,296	40,305	<i>T</i> = 8
Conditional grants	Overall	664	5	4929	<i>N</i> = 376
	Between		3002	12,440	<i>n</i> = 47
	Within		2604	58,481	<i>T</i> = 8

Note: All values are provided in Kenya Shillings (KSh), millions. Values indicated with \* are in billions.

4760 million toward recurrent expenditures. This distribution of county resources aligns with the stipulations of the 70:30 rule, where 70% of expenses are designated for recurrent purposes and 30% for development endeavors (Republic of Kenya, 2012b). Regarding county economic growth, the average gross county product (GCP, constant) is estimated to be KSh. 150,551 million, spanning from a minimum of KSh. 149,464 million to a maximum of KSh. 15.7 billion across the 47 county governments (Table 1).

Empirical analysis

We employ the panel vector autoregression (PVAR) approach to examine the dynamic relationship of revenue decentralization reforms and county's economic growth. This analytical approach is particularly used for panel data sets characterized by substantial temporal and cross-sectional heterogeneity. Scholars argue that PVAR is proficient at accommodating the endogeneity of variables within the system, a common feature when exploring dynamic interrelations where variables are inherently endogenous (Abrigo & Love, 2016; Holtz-Eakin et al., 1988).

Building on previous application of the dynamic PVAR model in fiscal decentralization literature (Mendoza-Velázquez et al., 2022), we estimate the dynamic relationship of revenue decentralization and county's economic growth based on the linear equation of *k*-variate homogeneous PVAR of order *p* represented as:



$$Y_{it} = Y_{it-1}A_1 + \dots + Y_{it-p}A_p + X_{it}B + u_i + e_{it}$$

$$i = 1, 2, \dots, N; t = 1, 2, \dots, T_i,$$

where  $Y_{it}$  is a  $(1 \times k)$  vector of endogenous variables distinguishing each county  $i$ , in time  $t$ .  $X_{it}$  is a  $(1 \times l)$  vector of exogenous covariates, and  $u_i$  and  $e_{it}$  are  $(1 \times k)$  vectors of dependent variable-specific panel fixed effects and idiosyncratic errors, respectively.  $A_i$  and  $B$  are matrices of parameters to be estimated. The innovations follows  $E(e_{it}) = 0$ ,  $E(\dot{e}_{it} e_{it}) = \Sigma$  and  $E(\dot{e}_{it} e_{is}) = 0$  for all  $t > s$ .

Scholars note that the PVAR model specification induces a correlation involving fixed effects, explanatory variables, and the lagged values in  $Y_{it-p}$ . Correcting this correlation using the standard differencing procedure generates bias in the estimates of the PVAR. Instead, the Helmert procedure of forward differencing to the mean is rightly used to correct the correlation and avoiding potential biases in PVAR estimates (Arellano & Bover, 1995).

As proposed by Abrigo and Love (2016), the PVAR estimation through the generalized method of moment (GMM) framework allows for several tests, including the investigation of Granger Causality, impulse response functions, variance decompositions, and the persistence of shocks affecting the variables in the system, providing a comprehensive analysis of their interactions and impacts over time. The Granger causality tests is employed for the purposes of examining the presence of causality between two or more time series variables. We employed the Wald test about the parameters to examine whether coefficients on the lag of variables  $m$  are jointly different from zero in the equation for variable  $n$ , thus indicating a causal relationship between the variables. To establish the appropriate length for the PVAR model, the  $J$  criterion proposed by Hansen, as well as the Bayesian information criterion (BIC) and Akaike information criterion (AIC) are employed. The stability of parameters are verified by ensuring all eigenvalues are within the unit circle, and the impulse-response function (IRF) and variance decomposition are derived through the Cholesky decomposition approach.

## EMPIRICAL FINDINGS

This section begins by presenting the results of the order of the PVAR, the stability of parameters, and the Granger Causality Wald tests. These results are then followed by the PVAR estimates, and graphical representation of the IRF and variance decomposition results.

### Model parameters and Granger causality tests

The PVAR analysis is predicted using the order of lag 1. We found that employing longer sets of lags 4–7 significantly reduces the number of observations, while lags 2–3 produced fewer significant results and were unstable. Furthermore, lag 1 parameters passed the stability test, as all eigenvalues were within the unit circle (see Figure A1). Focusing on the Granger causality tests, Table 2 indicates that past values of the equitable share of revenue, own-source revenue, conditional grants, as well as development and recurrent expenditures Granger cause future values of one or more variables. The test results indicate bidirectional causality for own-source revenue and GCP, as well as conditional grants and the equitable share of revenue, while the remaining significant tests indicating one-direction only Granger causality.

Panel VAR estimates

Table 3 presents the PVAR estimates for a single panel, focusing on the dynamic relationship among the equitable share of revenue, own-source revenue, and conditional grants with the economic growth of counties. The panel VAR estimates for other dynamic relations are provided in Table A1. Model 1 shows the PVAR estimates for the three county revenues variables, jointly considering total county expenditures, while Models 2 and 3 shows the PVAR estimates separately incorporating development and recurrent expenditures, respectively. Among the three revenue decentralization variables, own-source revenue emerges as statistically significant across all three models, indicating a positive association with county economic growth; specifically, a 1% unit increase in own-source revenue in a given previous year correlates with a 12.8%, 12.5%, and 8.6% increase in GCP. Similarly, conditional grants exhibit a positive effect on county economic growth by 1.4%, but only when county expenditures (i.e., development and recurrent) are aggregated.

Conversely, the equitable share exhibited a negative association with county economic growth across all three models, albeit lacking statistical significance to corroborate the findings. Regarding county expenditures, while not statistically significant, the results present a mixed picture: total county expenditures and development expenditures display a negative association with county economic growth, whereas recurrent expenditures show a positive association.

TABLE 2 Granger causality test for fiscal transfers and economic growth, 2013–2020.

Variables	GCP	Development expenditure	Recurrent expenditure	Decentralized revenues		
				Equitable share	Own-source revenue	Conditional grants
GCP		0.119	1.850	0.111	5.680**	1.34
Development expenditure	18.201***		19.763***	3.143*	0.373	6.444**
Recurrent expenditure	0.052	0.892		1.790	3.518*	0.760
Equitable share	11.560***	0.051	1.829		1.055	2.839*
Own-source revenue	3.218*	4.224**	1.433	0.143		1.161
Conditional grants	1.777	0.119	6.413**	10.333***	3.824**	

Note: \*, \*\*, and \*\*\* denote rejection of the null hypothesis at 10%, 5%, and 1% significance levels, respectively.

TABLE 3 Panel VAR estimates of revenue decentralization and gross county product.

Variable	Gross county product (GCP)		
	Model 1	Model 2	Model 3
Equitable share of revenue	−0.0820 (0.1035)	−0.0711 (0.1259)	−0.0410 (0.0683)
Own-source revenue	0.1283*** (0.0479)	0.1247*** (0.0479)	0.0861** (0.0365)
Conditional grants	0.0138* (0.0076)	0.0127 (0.0097)	0.0088 (0.0056)
Total county expenditures	−0.0080 (0.0486)		
Development expenditures		−0.0044 (0.0160)	
Recurrent expenditures			0.0562 (0.0350)

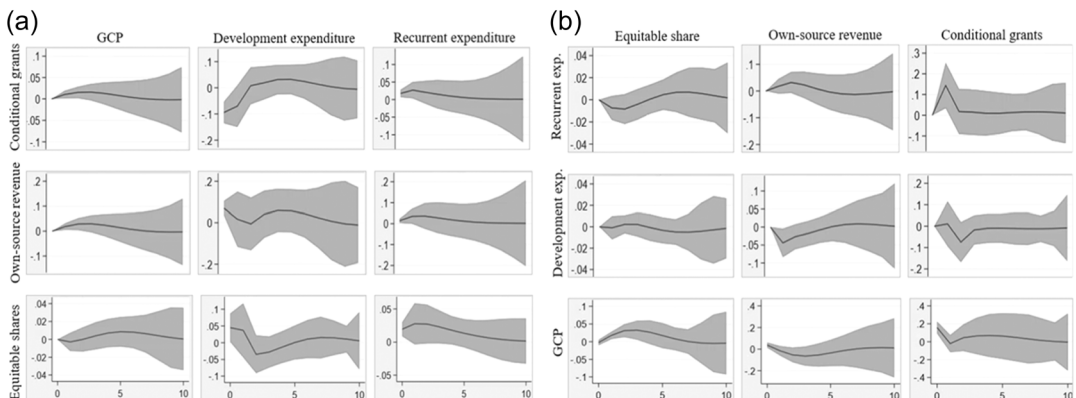
Note: \*, \*\*, and \*\*\* denote 10%, 5%, and 1% significance levels, respectively.

## Impulse response and variance decomposition

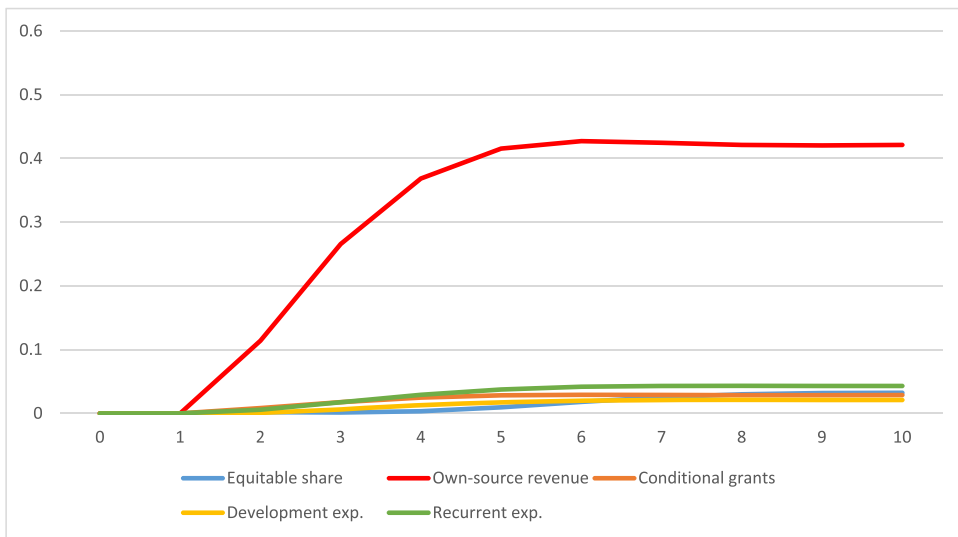
The impulse response shows the reactions of the dynamic revenue decentralization variables as a function each factor and time. Figure 1a presents the responses of county economic growth and development and recurrent expenditures to shocks of the three revenue decentralization variables. The first column presents the response of GCP to conditional grants and own-source revenue, which is slightly positive for the first 2–3 years, and the response of GCP to equitable share, which starts with a slightly negative trajectory in the first 1–2 years. The second column shows the response of the development expenditure, which shows negative and significant trajectory after shocks from both own-source revenue and equitable share for about 3 years. Conversely, the response of development expenditure to shocks of conditional grant is positive and significant in the first 4–5 years. The third column shows the response of recurrent expenditures to shocks of the three revenue decentralization factors, which are positive in the first 1–2 years.

Figure 1b presents the responses of the revenue decentralization variables to the shocks of county economic growth (GCP), development, and recurrent expenditures. The first column shows the response of the equitable share to the shock of the recurrent expenditure as a negative trajectory that last for 2–3 years, while to the shock of the development expenditure is surprisingly unobserved (or equal to 0). However, the response of equitable share to the shock of the GCP is positive and significantly trajectory that last for 4–5 years. The second column shows the response of own-source revenue to the shock of recurrent expenditures is positive in the first 3 years, but to the shocks of both development expenditures and GCP is negative, lasting for about 2 and 3 years, respectively. The third column shows the response of conditional grants is positive and significant to the shock of recurrent expenditures, lasting for at least 1 year, but negative and significant to the shocks of both development and GCP, also lasting in about 1–2 years.

The variance decomposition based on the PVAR estimates is presented in Figure 2, illustrating the revenue decentralization variables that significantly explains the observed variations in county-level economic growth. As shown in Figure 2, own-source revenue emerges as a primary factor that explains the observed variations in county-level growth; that is, 13% of the forecast error variance in GCP is attributed to shocks from own-source revenue. The contribution of other revenue decentralization variables toward GCP, including development and recurrent expenditures, are relatively insignificant.



**FIGURE 1** Impulse response to shocks of revenue decentralization variables and gross county product (a, b).



**FIGURE 2** Contribution of revenue decentralization variables to the to the variance of economic growth (variance decomposition).

## DISCUSSION

The empirical findings of this study provide partial support for the hypothesized relationship between revenue decentralization variables and the county-level economic growth for the period between 2013 and 2020 in Kenya. Specifically, the study finds a positive and significant relationship between own-source revenue and conditional grants with the GCP, but no significant contribution of the equitable share of revenue and county expenditures. The positive and significant results suggest the crucial role of fiscal instruments, such as own-source revenue and conditional grants, in stimulating economic activities in counties. The positive association between own-source revenues and economic growth is supported in empirical studies elsewhere (Mendoza-Velázquez et al., 2022; Smith, 2012), of which the results are interpreted that fiscal decentralization efforts could have encouraged collection of more local taxes (Rodríguez-Pose & Bwire, 2004). We attribute this finding to the fiscal instruments inherent in the devolved system of governance, which empower county governments to levy and collect locally generated revenues. County reports highlight the potential for own-source revenue generation at the county level has been increasing since the inception of the devolution system of government in 2013, notwithstanding the persistent challenges encountered in revenue collection processes (Commission of Revenue Allocation, 2022).

In regard to conditional grants, while partially significant, the findings align with those reported by Mendoza-Velázquez (2022). These scholars attribute conditional grants as a means by which governments demonstrate support for regional economic performance. Similarly, the normative theory of fiscal decentralization posits that the economies of subnational government units stand to benefit from the assignment of conditional grants (Oates, 1999). In the context of Kenya, conditional grants are relatively new, and are potentially driven by a set of ad hoc programs created by specific actors with specific needs. But, the partially significant results in this study highlight their potential in incentivizing economic growth in marginalized regions.

The insignificance of the results regarding the equitable share of revenue and county expenditures in relation to county-level economic growth may be explained by two factors. First,

our analysis spans an 8-year period, which may be relatively short to capture certain unobserved relationships. Scholars often suggest that the contributions of county/regional expenditures may become apparent in the long run (Hanif et al., 2020; Mendoza-Velázquez, 2022; Naftaly et al., 2019; Oguso, 2017). We pause here and hold similar intuition that the contributions of county investments toward county economic growth will eventually be realized in the future.

Second, it has been argued before that the composition of government investments and expenditure reforms are crucial for economic growth (Maingi, 2017; Simiyu, 2015). The insignificant results may be attributed to a mismatch between the needs associated with devolved functions and available fiscal resources. This consideration is intertwined with an ongoing debate among policymakers, county leaders, and key stakeholders regarding the ambiguity surrounding the cost of devolved functions (International Budget Partnership Kenya, 2023). In particular, the basis for revenue sharing is largely characterized as unstable, with policymakers at the national level frequently overlooking essential county roles and responsibility when distributing revenue shares between the two tiers of government. For instance, while the provision of basic health care is a devolved function, it is limited only to up to the category of level 5 hospitals. This implies that both the national government (responsible for referral hospitals) and county governments must share healthcare resources. However, counties often find themselves at a disadvantage despite shouldering the majority of public health needs and demands (see Table A2 for the revenue sharing parameters). In essence, the lack of adequate fiscal resources to support essential county functions may impede their ability to effectively tailor and address local needs in a timely manner.

Overall, the findings in this study call out policymakers to continue strengthening the roles and functions of counties to meet residents' needs and enhance economic performance of regions and the country as a whole. The empirical evidence about own-source revenue is an indication of the realized benefits of the revenue decentralization reforms, as the collected revenues would not have been possible without the institutionalized fiscal instruments and the devolved system of governance. Similarly, the introduction of conditional grants is showing potential of contributing toward economic performance of regions by mitigating social and economic needs in regions which would have otherwise remained marginalized were it not for the revenue decentralization reforms.

Another fundamental consideration for policymakers is for them, together with other stakeholders, to reevaluate the revenue sharing formula and ensure counties have adequate resources to support devolved roles and responsibilities. Though there has been significant political support for increasing the 15% minimum threshold allocations to counties (Kipsaat & Mbatia, 2019), the assigned county functions have exceeded expectations than the resources allocated to them. Ongoing negotiations for revising the revenue sharing formula is welcomed and should address the observed gaps between functions and resources. Beyond the discussion of resource allocation and distribution, the relevant agencies and stakeholders should also address duplications in various administrative and managerial roles and functions by the two levels of government. Such calls for restructuring administrative and managerial roles and functions could help both levels of government rethink their recurring budgetary needs and minimize resource wastage.

## CONCLUSION

This study has examined the nexus between revenue decentralization reforms and economic growth of counties in Kenya, for the period spanning from 2013 and 2020. The analysis indicates that the collection of own-source revenues and the provision of conditional grants are the main contributing factors in this relationship. The results in this study underscore the potential of fiscal instruments in encouraging county-level economic growth. However, further empirical

investigations are warranted to complement the findings of this study. For instance, future research could delve into the specific social and economic programs funded at the county level and analyze the extent to which conditional grants impact them. Such an approach would illuminate the significance of conditional grants in improving the social and economic wellbeing of marginalized counties. Additionally, future studies could explore the effects of revenue decentralization using the Human Development Index (HDI) as a metric, thereby examining whether revenue decentralization influences indicators such as health, education, and income. By comparing data before and after the implementation of decentralized systems of governance, such research would contribute to the literature on fiscal decentralization's role in advancing basic needs, such as a healthier and better-educated population (Lindaman & Thurmaier, 2002).

Our analysis of the revenue decentralization variables, particularly concerning the equitable share of revenue, underscores to policymakers that decentralization remains incomplete when the national government withholds necessary resources for devolved county functions. Upon closer examination, many of the observed behaviors and attitudes among elected leaders can be traced back to the historical evolution of decentralization efforts. However, the majority of voters desire for counties to be sufficiently empowered to fulfill the promises of devolution. Therefore, the political incentives for all actors involved in shaping revenue instruments and government restructuring should be driven by the aspiration for independent and sustainable county governments.

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## APPENDIX A

See Table A1 and A2 and Figure A1

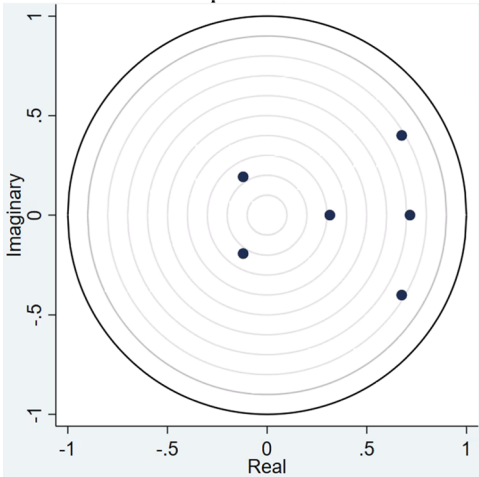
**TABLE A1** Panel VAR Estimates for Revenue Decentralization Variables.

Variable	Equitable share of revenue		
	Model 1	Model 2	Model 3
Gross county product (GCP)	0.5692*** (0.1529)	0.4768*** (0.1223)	0.6062*** (0.1657)
Own-source revenue	−0.0883 (0.0781)	−0.1228 (0.0927)	−0.0672 (0.0661)
Conditional grants	−0.0259** (0.0130)	−0.0267 (0.0165)	−0.0180** (0.0086)
Total county expenditures	−0.0737 (0.0599)		
Development expenditures		−0.0046 (0.0191)	
Recurrent expenditures			−0.0815 (0.0555)
<b>Own-source revenue</b>			
Gross county product (GCP)	−0.6829 (0.5726)	−0.7688 (0.5518)	−1.3540** (0.6411)
Equitable share of revenue	−0.3347 (0.4794)	0.0175** (0.5729)	−0.1511 (0.3539)
Conditional grants	0.0876** (0.0347)	0.0522 (0.0423)	−0.0624** (0.0255)
Total county expenditures	−0.1557 (0.2000)		
Development expenditures		−0.1336* (0.0711)	
Recurrent expenditures			−0.2853* (0.1524)
<b>Conditional grants</b>			
Gross county product (GCP)	0.9749 (1.2744)	0.7303 (1.2312)	−1.8564 (1.4290)
Equitable share of revenue	3.2375* (1.7183)	3.3212 (2.1440)	4.7553*** (1.1711)
Own-source revenue	1.6001** (0.7318)	2.2318** (0.8642)	1.1281** (0.5670)
Total county expenditures	1.3508* (0.7170)		
Development expenditures		0.0710 (0.2463)	
Recurrent expenditures			1.6176*** (0.6129)

Note: \*, \*\*, and \*\*\* denote 10%, 5%, and 1% significance levels, respectively.

**TABLE A2** The basis for revenue-sharing in Kenya.

Parameter	First-generation (2013–2016)	Second-generation (2017–2019)	Third-generation (2020–2025)	
	Approved	Approved	Proposed	Approved
Population	45%	45%	18%	18%
Basic equal share	25%	26%	20%	20%
Poverty	20%	18%	14%	14%
Land area	8%	8%	8%	8%
Fiscal effort	2%	2%	2%	–
Development factor		1%	–	–
Fiscal prudence			2%	–
Health service			17%	17%
Agriculture services			10%	10%
Urban service			5%	5%
Rural access			4%	8%



**FIGURE A1** Roots of the PVAR companion matrix.