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# ***The Impact of Intergovernmental Transfers on Fiscal Behaviour of Local Government in Ethiopia, Dejene Mamo Bekana <sup>1</sup>***

## **Abstract**

*This paper examines the effect of intergovernmental fiscal transfers on the fiscal behaviour of local governments in Ethiopia for the period 2004-2018. The empirical findings suggest that central government grants bolster state-level employment and expenditure. However, grants from the central government to states do not crowd out state-level revenue collection. Hence, this paper argues that fiscal decentralisation in Ethiopia has mostly, at least in theory, taken the form of devolution of the power to tax and spend public money. However, on average state-level revenue can only finance up to 26 percent of their annual expenditure. As a result, fiscal federalism in Ethiopia appears to be a delegation of spending responsibilities. It must be considered in a decentralized tax system, but with a transfer scheme and political hierarchy. The results are robust to alternative econometric estimation techniques.*

**Keywords:** intergovernmental fiscal transfers; state fiscal behaviour; revenue; expenditure; state governments.

<sup>1</sup>Assistant Professor of Finance and Political Economy, Ethiopian Civil Service University, Addis Ababa, Ethiopia; E-mail address: dejenemamo@gmail.com

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## **Background to the Study**

In Ethiopia, the escalating magnitude of intergovernmental transfers from the federal government to state governments prompts an exploration into its impact on the fiscal behavior of local governments. The inquiry is motivated by three primary reasons: the burgeoning absolute value of fiscal transfers necessitates an understanding of their role in fiscal equalization and their implications for shaping local government fiscal behavior; existing literature on the interplay between intergovernmental transfers and local government fiscal behavior reveals gaps and conflicting arguments; and there is a need to discern the effects of intergovernmental transfers through modeling exercises to offer nuanced policy recommendations for the design and implementation of fiscal transfers in federal political systems emphasizing fiscal decentralization.

Over the last 25 years, fiscal transfers from the federal government to state governments in Ethiopia have substantially increased to address persistent vertical and horizontal fiscal disparities. These transfers constitute over 36 percent of revenue and grants received by state governments (Moges, 2005). While evidence indicates growth in state-level expenditure, state government revenue has experienced sluggish growth. The impact of vertical transfers on local tax revenue is inconclusive, with studies suggesting both positive and negative effects. Masaki (2018) asserts that vertical fiscal transfers enhance local government revenue mobilization efforts, but they also incentivize state governments to expand fiscal activities, potentially fostering dependence on intergovernmental transfers rather than cultivating local revenue sources.

The theoretical and policy-level debate on the nexus between intergovernmental fiscal transfers and the fiscal behavior of local government persists. Despite theoretical predictions of negative effects on local government revenue, empirical evidence, such as that presented by Masaki (2018), demonstrates a positive influence of intergovernmental transfers on local government revenue. Earlier studies by Gamkhar and Shah (2007), Romer and Rosenthal (1980), and Tsang and Levin (1983) affirm the significance of intergovernmental transfers in explaining variations in fiscal behavior among local governments. However, a contrasting perspective, supported by studies like those of Buettner and Wildasin (2006) and Zhuravskaya (2000), suggests that intergovernmental transfers may not impact local revenue generation.

In a departure from the conventional view, recent empirical investigations (e.g., Brun and Khdari, 2016; Caldeira and Rota-Graziosi, 2014; Zhang, 2013) unveil a 'crowding-in' impact of central government transfers on local government revenue collection. This emphasizes the need to comprehensively assess the impact of intergovernmental transfers on local government fiscal behavior to inform effective local government behavior-intergovernmental fiscal transfer policies. Leveraging empirical panel data spanning 2004-2018 for local governments in

Ethiopia, this study aims to contribute to the understanding and policymaking of intergovernmental fiscal relations by addressing two fundamental questions:

- 1) Do intergovernmental fiscal transfers displace local government revenue?
- 2) Do intergovernmental fiscal transfers result in increased local government public spending?

## **The Literature and Conceptual Framework**

Fiscal federalism, stemming from federal political arrangements, denotes the outcome of a political structure where governing power is distributed between a central government and subnational governments forming a federation (Arowolo, 2011; Akindele and Olaopa, 2002). Described by Arowolo (2011: 4) as a "divergent in concept, varied in ecology, and dynamic in practice" political theory, federalism entails each level of government operating autonomously, wielding independent authority within its defined scope, and possessing taxing powers for autonomous revenue sources (Vincent, 2001). Fiscal federalism dictates that each government tier must independently generate adequate resources to fulfill its legally mandated functions without relying on financial assistance from other levels of government (Wheare, 1963). This implies the ability of federation members to act independently within their jurisdictions (Ewetan, 2011). This basic conceptualization has led to diverse theoretical definitions of fiscal federalism by various scholars.

In theoretical terms, fiscal federalism is conceptualized in two ways: the traditional view, grounded in knowledge and welfare theories, and the contemporary view. The traditional perspective highlights the comparative advantage of local government tiers in understanding local preferences, emphasizing their ability to make informed decisions about the provision of goods based on local circumstances (Tiebout, 1956; Musgrave, 1959; Oates, 1972). Local governments, possessing the best information about local situations and residents' problems, are considered better positioned to align goods provision with local preferences (Hayek, 1945). The traditional model focuses on the rational allocation of taxation, expenditure responsibilities, and intergovernmental transfers to different tiers of government, as outlined in the 'decentralisation theorem' constructed by Musgrave (1959) and Oates (1972) from Tiebout's original model of fiscal federalism (Tiebout, 1956).

Conversely, the contemporary view of fiscal federalism delves into issues such as principal-agent problems, information economics, the theory of the firm, organization theory, and the theory of contracts (Oates, 2005). This perspective, often termed the 'Second Generation Theory of fiscal federalism' (Qian and Weingast, 1997), focuses on the political economy of intergovernmental structures and emphasizes incentives embodied in various political and fiscal institutions of the federal state. However, critics, like Rodden and Ackerman (1997), argue that the contemporary approach lacks a comprehensive characterization of political structures for effective institutional reform.

Intergovernmental transfers, a crucial aspect of fiscal federalism, address the 'assignment problem' (Oates, 1972), where responsibilities for expenditure cannot be clearly identified as federal or local. However, empirical evidence suggests that such transfers may be counterproductive (Buettner and Wildasin, 2006; Zhuravskaya, 2000), potentially eroding local government revenue while incentivizing increased expenditure. This implies that intergovernmental transfers may result in substitution effects on the efforts of local governments to raise revenue (Gamkhar and Shah, 2007; Romer and Rosenthal, 1980; Tsang and Levin, 1983).

Empirical studies in public finance literature provide firm evidence that intergovernmental transfers, such as grants and subsidies, do not crowd out the efforts of local government to generate revenue (Gang Guo, 2008; Caldeira and Rota-Graziosi, 2014; Zhang, 2013; Masaki, 2018). However, they conclude that intergovernmental transfers bolster local-level spending. The literature suggests that these transfers provide a powerful incentive for local governments to increase spending rather than raising an equivalent amount of own income (Inman, 2008; Vegh and Vuletin, 2011). The existing empirical evidence offers mixed results on the effect of intergovernmental transfers on local government revenue and spending, with some studies indicating insignificant effects (Gamkhar and Shah, 2007).

In the context of Ethiopian fiscal federalism, the federal government provides three types of financial support to state governments: direct subsidies for spending budgets, general purpose grants, and specific development grants (Moges, 2005). However, the statistical investigation of the impact of these transfer schemes on the fiscal behavior of state governments is lacking. A comprehensive and statistically informed examination is crucial for nuanced policy suggestions concerning intergovernmental fiscal relations in a federal system. Previous empirical investigations conclude a 'crowding-in' impact of transfers from the central government to local governments, expanding the own revenue of local governments (Brun and Khdari, 2016; Caldeira and Rota-Graziosi, 2014; Zhang, 2013). Conversely, other studies conclude that intergovernmental transfers may crowd out local revenue generation (Buettner and Wildasin, 2006; Zhuravskaya, 2000), highlighting the potential variation in results based on the design of the grant system and the perception of the central grant by recipients. Dahlberg et al. (2008) confirm that intergovernmental transfers from the central government do not undermine local tax revenue but increase local government expenditure. To date, no single empirical and econometrically grounded study on this issue in fiscal federalism in Ethiopia exists, with the literature limited to a qualitative explanation of the design and nature of intergovernmental relations.

## Research Methods and the Data

### Method

This research employs a mixed research strategy – qualitative and quantitative. The qualitative part of the analysis uses documents and records to describe the evolution of fiscal federalism in Ethiopia. The quantitative dimension is based on the following three basic econometric specifications developed to be estimated using empirical data:

$$SR_{it} = \theta + \alpha_1(IGS_{it}) + \alpha X_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

$$SS_{it} = \theta + \alpha_1(IGS_{it}) + \alpha X_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

$$SZ_{it} = \theta + \alpha_1(IGS_{it}) + \alpha X_{it} + \varepsilon_{it} \dots \dots \dots (3)$$

In the equations, state-level revenue ( $SR_{it}$ ), state-level spending ( $SS_{it}$ ) and size of the wage bill, measured by total wage bill to personnel ( $SZ_{it}$ ), are the dependent variables used as indicators of local government fiscal behaviour. Fiscal intergovernmental transfers ( $IGS_{it}$ ), and a range of state-level macroeconomic control variables ( $X_{it}$ ) are used to explain cross-state differences in their response to intergovernmental fiscal transfers. The control variables include population size and increased employment in public service. In all cases  $i$  is the subnational state government and  $t$  is the year. The control variables are limited to those mentioned due to lack of data for different levels of development in these states, such as GDP per capita and poverty index.

The conventional literature typically utilizes the actual number of employees at the subnational level as a measure of the size of fiscal dependents (e.g., Gang Guo, 2008). However, this study adopts the total wage bill for the public sector at the state level due to the unavailability of state-level time series data on the number of employees. The rationale behind this choice is that changes in salary expenditure are often driven by fluctuations in employment. It is acknowledged that using the total wage bill may also be influenced by pay revisions, although such revisions are not expected to occur annually in the public sector.

To ensure the robustness of the results, various econometric tests are employed in the data analysis. The primary method is the system general method of moments (GMM), chosen for its efficiency in addressing issues of cross-dependence, endogeneity, and heteroscedasticity. The potential source of endogeneity in this study is the reverse causality between the fiscal behavior of state-level government and grants from the federal government. GMM is known to produce results with robust standard errors in the presence of cross-dependence and heteroscedasticity (Arellano and Bond, 1991; Arellano, 2003; Hall, 2005). While the GMM estimator does not specifically correct for cross-sectional dependence, it addresses this concern by including lagged dependent variables as regressors.

To test the robustness of the results under alternative estimation techniques, linear panel econometric tests of fixed effect and random effect models are employed. However, these linear models may offer weaker predictions regarding issues of heteroscedasticity and cross-dependence (Greene, 2012). To address this, Driscoll and Kraay's (1998) robust standard errors for fixed effect panel data models are applied, as recommended by Hoechle (2007) to mitigate estimation bias. The empirical analysis follows the GMM's regression technique, chosen to specifically address endogeneity concerns.

### The Data

Data for this research originated from various sources, including the state governments' Bureau of Finance and Economic Development, the House of Federation, the Federal Ministry of Finance, and the Ethiopian Statistical Agency. Revenue and expenditure data for state governments were directly collected from the respective state bodies, while information on federal government revenue and expenditure came from the Fiscal Policy Department of the Ministry of Finance. Details regarding federal government grants to states, as well as population figures for the states, were obtained from the Ministry of Finance and the Ethiopian Statistical Agency. Qualitative analysis documents on the distribution formula for federal grants were also procured from the House of Federation and the Ministry of Finance.

The study utilizes a panel dataset encompassing nine federal states and one city administration in Ethiopia from 2004 to 2018. The chosen time frame aligns with data availability constraints, as state-level grant data is accessible only from 2004, while other variables are available up to 2018. The exclusion of Addis Ababa city from analysis ensures the robustness of results, as it does not receive a block grant from the federal government. The dataset, driven by data availability, consists of annual observations, yielding fifteen time series data points per state and a total of 150 observations.

### Fiscal Federalism: The Case of Ethiopia

The initiation of fiscal devolution in Ethiopia coincided with the establishment of a federal political structure in the early 1990s (FDRE, 1994), replacing the previous unitary state system (PDRE, 1987) where the central government held control over financial and human resources. In the transition to a federal system, the central government decentralized numerous fiscal responsibilities to state governments, significantly elevating their role in providing local public goods and services. The constitutional delineation of expenditure and taxing powers between the federal and state governments establishes the parameters for their respective roles.

The FDRE constitution outlines the expenditure responsibilities of the federal government, encompassing foreign affairs, defence, national security services, macroeconomic stability, and national development activities. This strategic limitation allows the central government to focus

on specific areas such as macroeconomic management and overseeing the domestic market (Hankle, 2009). Bird (2000) argues that tasks related to pure public goods are best managed by the national government, aligning with Ethiopia's legal framework that grants significant decision-making powers to regional states.

Regional states in Ethiopia wield substantial authority, including the enactment of state constitutions and laws, formulation and execution of economic policies, administration of land and natural resources, tax collection, establishment of state-level civil service standards, and maintenance of security forces (Wagner, 2007). The constitutional framework reserves powers not explicitly granted to the federal government for regional governments.

Revenue mobilization, both tax and non-tax, is constitutionally shared between the federal and state governments, each allocated specific tax bases (FDRE constitution: Art. 96, 97, 98). The federal government retains control over dominant tax sources (Box 1), while state governments are assigned tax bases with a local focus (Box 2). This constitutional division defines the fiscal landscape, balancing central and regional fiscal responsibilities.

**Box 1 Ethiopian Constitution, Article 96: federal government powers to tax**

1. The Federal Government shall levy and collect custom duties, taxes and other charges on imports and exports.
2. It shall levy and collect income tax on employees of the Federal Government and international organizations.
3. It shall levy and collect income, profit, sales, and excise taxes on enterprises owned by the Federal Government.
4. It shall tax the income and winnings of national lotteries and other games of chance.
5. It shall levy and collect taxes on the income of air, rail, and sea transport services.
6. It shall levy and collect taxes on income of houses and properties owned by the Federal Government; it shall fix rents.
7. It shall determine and collect fees and charges relating to licenses issued and services rendered by organs of the Federal Government.
8. It shall levy and collect taxes on monopolies.

**Box 2 Ethiopian Constitution, Article 97: state government powers to tax**

1. States shall levy and collect income taxes on employees of the State and of private enterprises.
2. States shall determine and collect fees for land usufructuary rights.
3. States shall levy and collect taxes on the incomes of private farmers and farmers incorporated in cooperative associations.
4. States shall levy and collect profit and sales taxes on individual traders carrying out a business within their territory.
5. States shall levy and collect taxes on income from transport services rendered on waters within their territory.
6. They shall levy and collect taxes on income derived from private houses and other properties within the State. They shall collect rent on houses and other properties they own.
7. States shall levy and collect profit, sales, excise, and personal income taxes on income of enterprises owned by the States.
8. Consistent with the provisions sub-Article 3 of Article 98, States shall levy and collect taxes on income derived from mining operations, and royalties and land rentals on such operations.
9. They shall determine and collect fees and charges relating to licenses issued and services rendered by State organs.
10. They shall fix and collect royalty for use of forest resources.

The federal government in Ethiopia possesses exclusive taxation rights over international trade and a significant portion of domestic indirect taxes, constituting approximately 70 percent of the overall tax base. This allocation designates major tax revenue sources to the federal government, including payroll and sales taxes, along with non-tax revenue from federally-owned public enterprises nationwide. While the federal government shares certain tax revenues with states, such as those related to incorporated companies, joint venture investments, and natural resource royalties, state governments primarily derive revenue from direct taxes on

labor and individual traders, land use fees, and taxes on subsistence-based farm households. However, the revenue potential of state-assigned tax bases is limited and less dynamic (Girouard and Andre, 2005; Belinga et al., 2014).

Non-tax revenue distribution mirrors this pattern, with the federal government collecting around 80 percent of non-tax revenue. Despite regional revenue collection fluctuating at approximately 20 percent of the total, the federal government compensates for vertical and horizontal inequalities through block and specific grants to states. While block grants allow states discretionary allocation, specific grants target development programs in economically challenged areas, bypassing state control (Gang Guo, 2008).

The allocation of block grants faces challenges due to politicized and problematic distribution criteria, leading to inter-state competition for limited resources. In an effort to address these issues, the Ethiopian federal transfer system introduced a grant distribution formula endorsed by the House of Federation. Initially considering population, development level, and revenue generation with equal weight, subsequent modifications incorporated a poverty index (2001), which was later omitted in 2004. The formula changed in 2009, basing grants on the proportion of a state's fiscal gap relative to the total fiscal gap—defined as the disparity between states' potential revenue and expenditure needs. This approach involves estimating fiscal gaps individually for each state, aggregating them, and distributing grants based on the relative fiscal gaps of regional states. Notably, evidence indicates that the grant pool is consistently smaller than the total fiscal gap of regional states.

**Table 1 Ethiopia: Relative Weight of Variables in Federal Grant Formula**

Indicator	Year			
	1994	1998	2001	2004
Index of population	33.33	60	55	65
Composite inverted index of development	33.33	25	20	25
Index of own revenue-raising effort	33.33	15	15	10
Poverty index	00	00	10	00

Source: Ministry of Finance, 2020

In assessing the revenue potential of states, a representative revenue system is applied. Major tax sources that cover more than 80 percent of states' revenue were considered. Revenue potential is calculated by applying the existing tax rates (different rates for different tax types) to the estimated tax bases. Tax bases are estimated based on economic forecasts of the Central Statistical Agency of Ethiopia. Following the effort neutral principal approach, the formula only used the states' revenue potential, not the revenue they collected. Six types of tax are used for this purpose.<sup>1</sup> Since 2009, the grant distribution formula is considered better than its predecessors, because it tries to take the revenue capacity of the states rather than the actual revenue they collected. In a similar manner, expenditure needs are also calculated based on indicators that account for over 90 percent of the states' expenditure.<sup>2</sup>

**Descriptive Analysis**

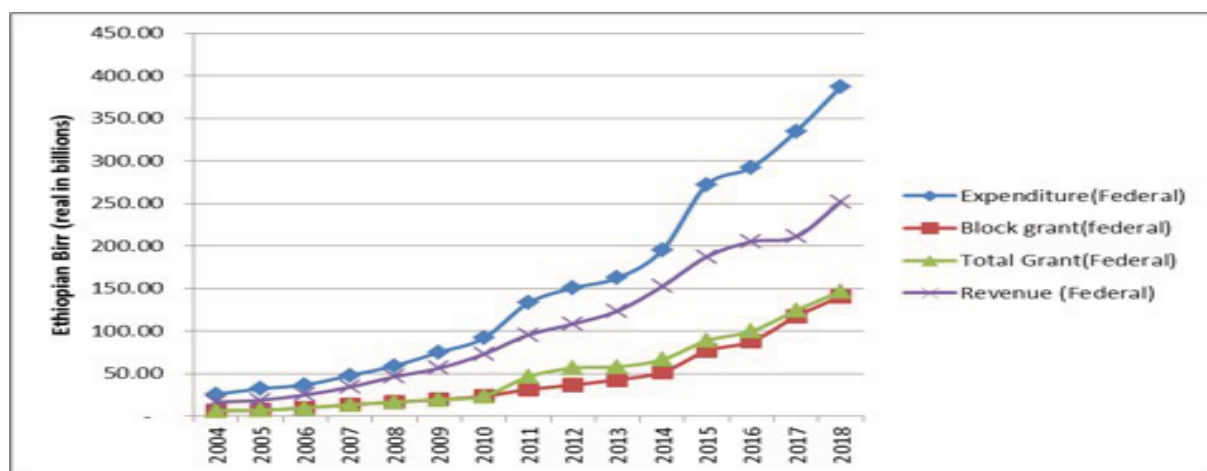
Using data from the Ministry of Finance, Figure 1 shows that central government has been providing substantial amounts of grants to state governments. Since about 2003, central

<sup>1</sup> These taxes include personal income taxes, business profit tax, VAT, agricultural income tax, rural land use tax; and turnover tax (TOT).

<sup>2</sup> These indicators, together with the respective weights attached to them, are: expenditure required for general administration (state bodies, public order and security, and justice) (29%); primary and secondary education (including TVET) (32%); public health (9%); agriculture and natural resources (14%); clean water supply (5%); rural road construction and maintenance (5%); micro- and small-scale enterprise development to reduce poverty and unemployment (3%); and work and urban development (3%).

government's revenue and expenditure have grown significantly. Yet a sizeable proportion of central government resources are transferred to states for vertical fiscal equalization. In 1997 the block grant transferred to states was about 38 percent of central government revenue. This figure has grown to 58 percent in 2018. Similarly, the central government grants to states as a ratio of its total expenditure has grown from around 25 percent in 1997 to 38 percent in 2018.

Evidence shows that there is a clear vertical fiscal imbalance (fiscal gap between the federal government and state governments) in the Ethiopian fiscal federal system (see Figures 1 and 2). This could be explained in different ways. First, the structure of the economy resulted in poor tax bases being assigned to subnational governments in the design of fiscal federalism. The major potential sources of revenue, including taxes from public enterprises and foreign trade taxes, were assigned to central government. Second, the low level of local economic development has made it difficult for subnational government efforts to generate revenue. Third, the poor tax administration system in subnational governments makes it hard to exploit their tax potential.

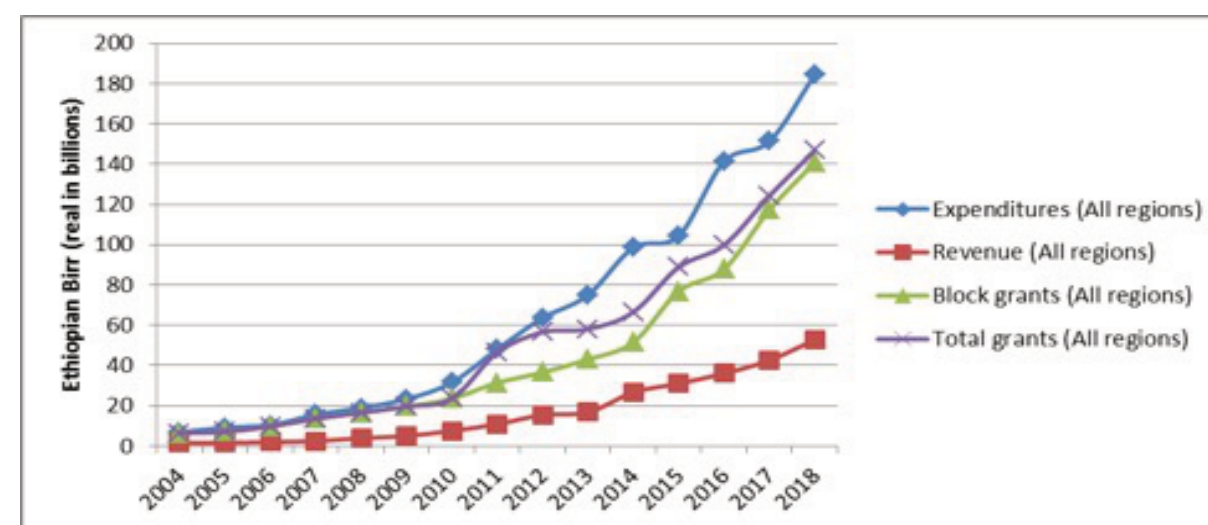


**Figure 1** Trends in Ethiopian Federal government's fiscal data

Source: Ministry of Finance, 2019

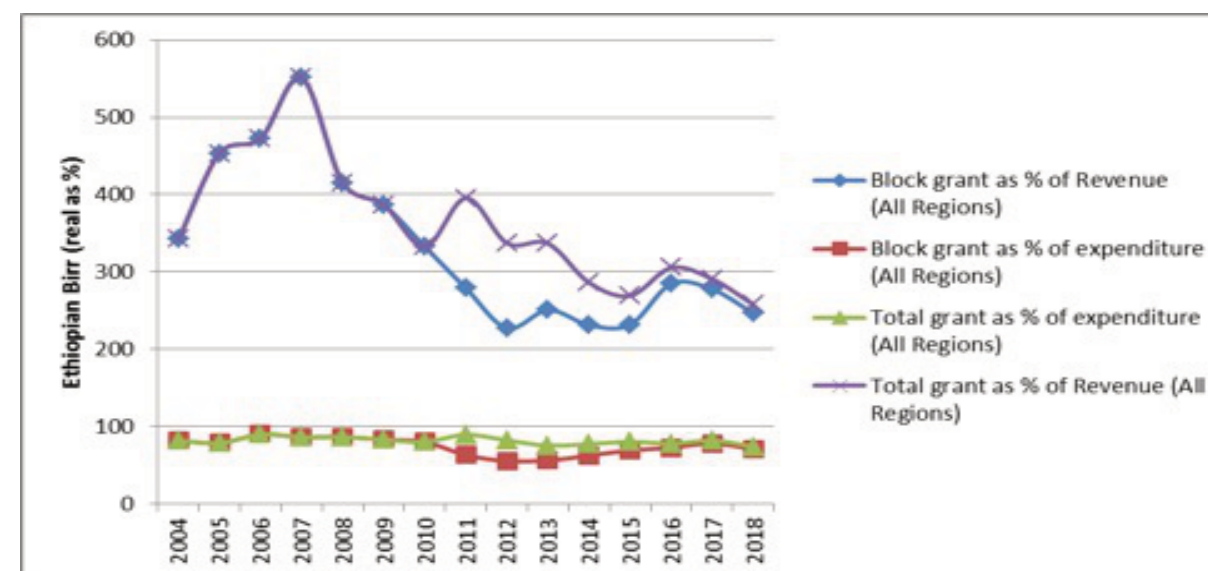
Figure 2 shows that there is significant variation between total subnational government expenditure and their own revenue. The evidence reveals that the grant from the federal government finances a substantial proportion of expenditure of subnational governments. The expenditure of states increased significantly between 2004 and 2018. However, growth in their revenue failed to keep pace with this growth in expenditure. For example, in real terms state-level total expenditure increased from ETB 696 million in 2004 to ETB 187 billion in 2018, while state-level revenue increased from ETB 167 million to ETB 4.39 billion over the same period (see Table 4). State-level governments remain dependent on central government grants, though this has been marginally decreasing over time—total grants relative to state-level expenditure have decreased from 81.81 percent in 2004 to 73.77 per cent in 2018. This still means that the financial transfer from central government finances a considerable proportion of the state-level budget.

The evidence shows interesting results concerning state-level revenue, expenditure, and the grants they receive from central government (Figures 3 and 4). The overall grant as a proportion of state-level total revenue decreased from around 342 percent in 2004 to 257 per cent in 2018. This shows that states have been making efforts to enhance their own revenue mobilisation. However, the increase in own revenue mobilisation at state level has a long way to go for states to become self-reliant in financing their respective expenditure. This implies that decentralisation efforts concerning fiscal matters have yet to yield the desired outcomes.



**Figure 2** Trends in regional government's fiscal data

Source: Ministry of Finance, 2019

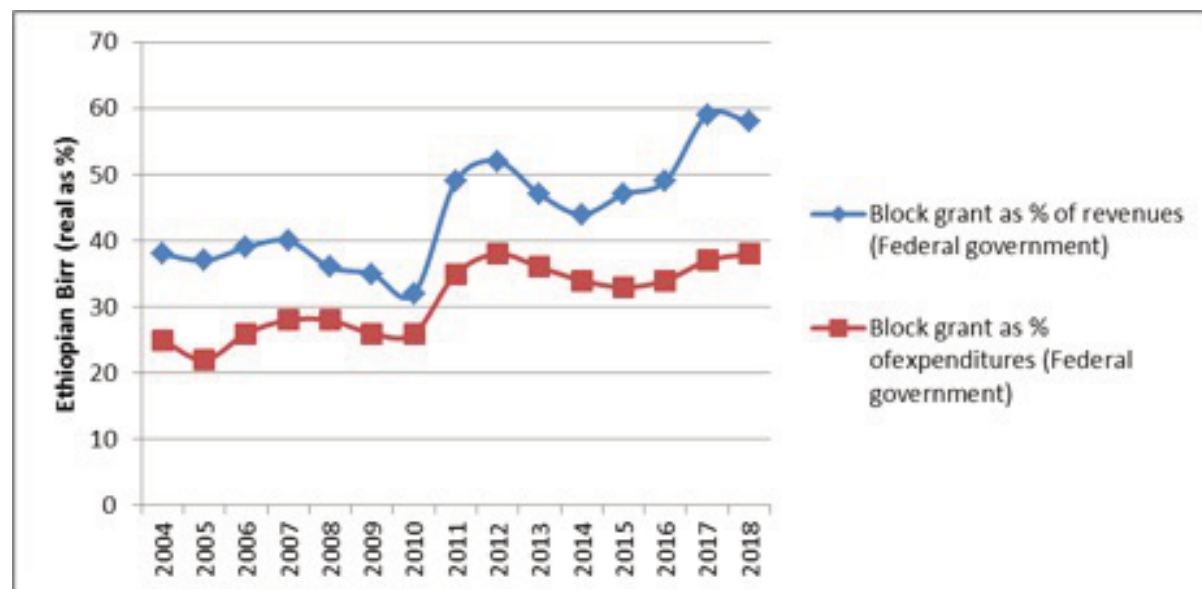


**Figure 3** Trends in grants as percentage of revenue and expenditure of regional governments

Source: Ministry of Finance, 2019

Because of problems of data availability, empirical research on Ethiopian fiscal federalism has so far emphasized the qualitative analysis of intergovernmental financial relations between central and state governments (Moges, 2003; Moges, 2005; Baraki, 2015). This qualitative approach does not provide more nuanced policy implications, as it focuses on an explanation of events without statistically analyzing the fiscal effect of intergovernmental transfers. A qualitative approach is preferable when trying to understand the basic nature of the context.

State-level variations in Ethiopia are enormous. Table 2 shows that cross-state differences in fiscal matters are significant. Some Ethiopian states, such as Oromia, Amhara, and Southern Nation's and Nationalities, are highly populated. These states are also endowed with better natural resources and, hence, greater potential for mobilizing revenue. Their expenditure needs are also substantial. The socio-economic and fiscal performance of the Ethiopian states and local-level economic development are essential for the modernization of the entire nation. In addition, after three decades of decentralisation of spending responsibilities and the power to



**Figure 4** Trends in grants as percentage of revenue and expenditure of the federal government  
*Source:* Ministry of Finance, 2019

tax, state-level governments are now the major providers of basic public services, such as health care and compulsory education. However, the impact of decentralisation on the fiscal behaviour of state governments has not been statistically analyzed.

For this analysis, this paper uses a comprehensive state-level panel dataset compiled from the yearbook series published by the Ethiopian Ministry of Finance and the Ethiopian Statistical Agency. The first part of the data, which covers all ten local governments of Ethiopia from 2004 through 2018, comes from annual issues of fiscal data reported by the Ministry of Finance. This part of the panel data contains mostly revenue and expenditure. Fiscal variables were obtained for all the federal states of Ethiopia, particularly figures relating to block grants, specific development grants, and spending for fiscal dependents, which include all government employees and retirees. Population data was obtained from the Statistical Agency of Ethiopia. Table 2 gives descriptive statistics of key characteristics of Ethiopian federal states over 15 years.

Tables 2 and 3 show that socio-economic and fiscal performance of states varies extensively both over time and across states. The expansion of the fiscal indicators relative to each other also shows an interesting pattern. On average terms, local government revenue and expenditure have increased over the period 2004-2018. This could be an indication, although certainly far from conclusive, of improved local tax effort. But the expansion in revenue failed to keep pace with growth in expenditure needs of state-level governments. The ratio of standard deviations of revenue and expenditure relative to their means has increased, demonstrating regional disparity at the country-level in economic development and state-level revenue. The three richest states account for over 99 percent of the combined revenue of all state governments. Noticeably, the average block grant has grown more than tenfold in ten years. The redistributive effect of the transfer is questionable because the coefficient of variance (standard deviation relative to the mean) of government expenditure has increased, adding to growing regional inequality in local economic development and revenue. This data presents an overall view of the county-level government finance under the fiscal federal system introduced in 1994. The fiscal statistics imply that Ethiopian federal states increased their spending, which outpaced their respective mobilisation of revenue.

**Table 2** Mean Fiscal Data for States (2004-2018)

Region	Total expenditure (Birr, million)	Total revenue (Birr, million)	Block grants (Birr, million)	Specific grants (Birr, million)	Total wages (Birr, million)	Population (million)
Tigray	5780	2340	3100	422	2520	5.0632
	(193)	(569)	(684)	(122)	(580)	(.1097177)
Afar	1800	293	1440	198	724	1.724333
	(358)	(73)	(321)	(54.7)	(175)	(.0509283)
Amhara	15000	3810	10600	1400	7750	20.3
	(3430)	(963)	(2400)	(404)	(1850)	(.4358177)
Oromia	21900	6000	15500	1990	11700	33.8
	(5040)	(1500)	(3720)	(561)	(2880)	(1.007192)
Somali	5140	789	3990	516	1550	5.474333
	(1320)	(224)	(1050)	(140)	(376)	(.1657772)
Benishangul Gumuz	1330	275	930	117	709	1.009067
	(299)	(64.9)	(207)	(32.6)	(174)	(.0337767)
Southern Nations	13100	3210	9260	1190	6710	18.3
	(3040)	(871)	(2180)	(339)	(1670)	(.5082396)
Gambela	845	169	668	78.9	523	0.4108
	(171)	(48)	(145)	(21.8)	(112)	(.015429)
Harari	566	209	413	57.2	202	.232600
	(122)	(57.9)	(86.5)	(16.9)	(44.1)	(.0071146)
Dire Dawa	921	2230	488	76.4	290	.441800
	(211)	(1860)	(101)	(24)	(67.8)	(.0149167)
Standard deviations in parentheses						

The descriptive data outlined above indicates a growing reliance of state-level governments in Ethiopia on intergovernmental transfers from the central government, coupled with an accelerated expansion of expenditure compared to local revenue mobilization. While these statistics illustrate overall temporal trends in state-level fiscal affairs, they do not establish a causal connection between central grant dependence, local expenditure growth, salary increments, and tax collection efforts. To address this, the current study employs econometric regressions on state-level panel data, utilizing dynamic panel data models due to the recurrent nature of state-level decisions on government employment and revenue, typically influenced by the preceding year's figures (Guo 2008).

The primary focus of the regressions is the impact of central government transfers to state governments, as Ethiopia's central government provides two grant types—block grants and specific development grants. Block grants, introduced in the 1990s, aim at fiscal equalization and have seen a substantial increase from ETB 5.6 billion in 2004 to over ETB 130 billion in 2018. The allocation of block grants considers factors like population size, tax potential, expenditure needs, and local development levels. The second grant type, specific development grants introduced in 2011, is designated for predefined purposes outlined by the central

**Table 3** Mean annual trends of state-level fiscal data (2004-2018)

Year	Total expenditure (Birr, million)	Total revenue (Birr, million)	Block grants (Birr, million)	Specific grants (Birr, million)	Total wages (Birr, million)	Population (million)
2004	696 (345)	167 (69.9)	570 (193)	0.00 (0.00)	396 (148)	72.827 (3.042487)
2005	828 (327)	162 (65.3)	731 (251)	0.00 (0.00)	534 (212)	74.69800 (3.123279)
2006	1060 (391)	204 (81.1)	949 (336)	0.00 (0.00)	674 (275)	76.61800 (3.206344)
2007	1590 (603)	251 (91.7)	1360 (503)	0.00 (0.00)	933 (360)	78.58300 (3.291356)
2008	1920 (749)	404 (154)	1660 (620)	0.00 (0.00)	1100 (444)	80.58600 (3.377802)
2009	2369 (856)	514 (188)	1960 (699)	0.00 (0.00)	1240 (475)	82.60600 (3.465116)
2010	3190 (1100)	774 (293)	2550 (908)	0.00 (0.00)	1640 (636)	84.64200 (3.553262)
2011	4870 (1650)	1110 (389)	3060 (1090)	1300 (480)	2170 (814)	86.68400 (3.641706)
2012	64440 (2270)	1580 (586)	3560 (1260)	1710 (623)	2560 (984)	88.73200 (3.730483)
2013	7610 (2750)	1720 (749)	4250 (1510)	1460 (521)	2950 (1130)	90.79500 (3.819982)
2014	9990 (3530)	2730 (1020)	6230 (2230)	1470 (525)	4470 (1720)	92.85800 (3.909641)
2015	10600 (3729)	3190 (1100)	7290 (2590)	1180 (421)	4780 (1800)	94.93300 (3.999860)
2016	14400 (5060)	6430 (2720)	10400 (3710)	759 (253)	7180 (2820)	97.01100 (4.090065)
2017	53300 (5450)	4350 (1550)	11900 (4420)	586 (203)	8550 (3400)	99.09100 (4.180534)
2018	18700 (6820)	4390 (2040)	13100 (4820)	601 (220)	9860 (3880)	1010 (4.271060)

Standard deviations in parenthesis

government, contributing to cross-regional economic development. Despite decreasing from ETB 12.78 billion in 2011 to ETB 6 billion in 2018, the specific grant is expected to directly

translate into local expenditure due to its conditional nature, focusing on areas like infrastructure, education, sanitation, and public health.

The increasing dependence on central government financial transfers raises concerns about states relying on bailouts, potentially leading to a surge in local spending, government size, and a decline in tax collection efforts. As a significant portion of state government expenditure is covered by central government grants, this dependency may contribute to a heightened reliance on the central government.

### Findings and Discussion

The outcomes of the dynamic panel data models examining fiscal dependents, state-level expenditure, and revenue are detailed in Tables 4, 5, and 6, respectively. In Table 4, the estimation results for fiscal dependents as the dependent variable reveal the statistical significance of lagged values at  $\rho < 0.01$ , indicating that previous spending on personnel salary significantly influences subsequent spending for the same purpose or exhibits high correlation over time. Notably, the regression results demonstrate the stimulating impact of central government grants on the changes in the wage bill. Over the study period, the average total wage bill for states constitutes 49.02 percent of total state-level expenditure. States' own-source revenue also contributes to the expansion of fiscal dependents, but the federal government grant has a more pronounced effect. The coefficients for central government block grants to states are statistically significant at  $\rho < 0.05$ , while specific development grants, although in the expected positive direction, do not achieve statistical significance at this level.

Under the fixed effect model, the only instance of significance for specific development grants is when the coefficient is negative, which is not the preferred model. The GMM model is considered the preferred one for interpretation. The results suggest that general block grants to subnational governments reinforce the employment levels by local governments, indicating that states utilize these grants not only to sustain existing employees but also to hire inexperienced staff. While this may not be problematic in an understaffed public service system, increased spending on salaries for personnel may contribute minimally to local economic development. Conversely, the statistically insignificant coefficients for specific development grants imply that states employ this type of subsidy for its intended purpose, directing funds to specific development projects without expanding the number of employees. This specificity reduces the likelihood of specific development grants distorting the fiscal behavior of local governments.

Table 5 presents the results of estimation with state-level expenditure as the dependent variable. First, the lagged values of the previous period state-level total expenditure are statistically significant at  $\rho < 0.01$ . This suggests that states expand the basic public goods and services they provide, because under-supply of essential public goods is unacceptable. Where the lagged value of expenditure attains significance, there is increased public spending for provision of essential public goods and public services. It is well documented in public choice literature that the under-supply of public goods and public services is not acceptable from the perspective of voters. Second, the regression results in the table about variations in state-level expenditure show the stimulating effect of central government grants versus that of states' own-source revenue. The effect of state-level revenue on expansion of local-level expenditure is supported with evidence because it attains statistical significance at  $\rho < 0.01$  level. Similarly, the coefficients for central government block grants to states are all statistically significant at  $\rho < 0.01$ . However, the coefficients for specific development grants attain statistical significance at  $\rho < 0.05$  in only two out of the four models estimated. But the coefficient is in the expected positive direction.

The results suggest that central government general block grants to subnational governments bolster local government expenditure significantly. The evidence presented shows that the effect of an increase in local revenue appears to be less than the effect of an increase in central government grants. In fact, growth in the revenue of state governments failed to keep pace with growth in their expenditure. As a result, states rely on the federal government grant to pay for a considerable proportion of their expenditure.

**Table 4** Effect of Grants on Size of State-Level Fiscal Dependents

Dependent variable: size of state-level fiscal dependents measured by personnel salary								
	Iv(gmm)		System(gmm)		Fixed effect		Random effect	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
lnSOP-1	.7828***	.7331***	0.5603***	.5024***	.15874*	.20302**	.7826***	.7826***
	(.04765)	(.07215)	(.06577)	(.06729)	(.0812)	(.15637)	(.06903)	(.06903)
lnBG	.1877***	.2224***	.4047***	0.405***	.6362***	.5873***	.1874**	.18745**
	(.06068)	(.06473)	(.06726)	(.05896)	(.10085)	(.08494)	(.07692)	(.07692)
lnSDG	.001626		-.01753		-.1145**		.00121	.00121
	(.04183)		(.01777)		(.03552)		(.0563)	(.05631)
lnREV	.021131	.0326**	.02228	.0615**	.00629	.02787	.02112	.021122
	(0.01395)	(.01687)	(.02067)	(.02397)	(.02041)	(.03103)	(.01926)	(.01926)
lnPOP	.018796	.0265***	.0386*	.0409**	1.22724	1.6695	.01941	.01941
	(.06043)	(.01099)	(.02042)	(.01721)	(1.0051)	(1.1067)	(.08041)	(.08048)
Cons	-.035407	-.06608			-11.994	-21.2133	-.0278	-.02781
	(.81718)	(.26089)			(12.394)	(14.032)	(.98958)	(.98958)
R <sup>2</sup>	.99	0.99			0.9385	0.8449	0.9942	0.9942
WaldX <sup>2</sup>	17265	7283.3			1281.79	1605.72	63939.35	63939
AR (1)			0.82	-3.6				
AR (2)			1.18	0.6				
Sargan			67	108				
N.obs	80	140	80	140	80	140	80	140

lnBG= log of block grant; lnTEXP= log of total expenditure; lnREV= log of total revenue; lnSBG= log of specific development grant; lnSOP= log of salary expenditure to personnel; lnPOP= Log of region level total population

Notes: Regression results for the system (gmm) are obtained by Arellano-Bond dynamic panel-data estimation of first-difference equations using GMM. All available lagged values of the dependent variables in each previous period are used as instrumental variables in first differencing. \*\*\*, \*\*, \* indicates significance at  $\rho < 0.01$ ,  $\rho < 0.05$  and  $\rho < 0.1$ , respectively.

**Table 5** Effect of Grants on Size of State-Level Total Expenditure

Dependent variable: size of state-level total expenditure								
	Iv(gmm)		System(gmm)		Fixed effect		Random effect	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
lnTEXP-1	.2345***	.4349***	.09346	.1859***	.1375*	.3992***	.2075**	.435***
	(.06408)	(.06021)	(.06271)	(.05782)	(.0637)	(.05469)	(.09554)	(.05639)
lnREV	.1211***	.1067***	.1007***	.1156***	.04673**	.1213**	.1074***	.1067***
	(.02535)	(.0229)	(.01867)	(.02049)	(.01574)	(.04745)	(.02193)	(.0153)
lnBG	.37697***	.3551***	.4443***	.4711***	.4457**	.2366***	.4045***	.355***
	(.07785)	(.063353)	(.06633)	(.06207)	(.16397)	(.06485)	(.13172)	(.0674)
lnSDG	.06057*		.08024**		.1503***		.07621	
	(.03449)		(.03808)		(.0325))		(.04947)	
lnSOP	.09036	.09374	.1888***	.2409***	.3856**	.3287***	.118**	.0937*
	(.05767)	(.0639)	(.04949)	(.04487)	(.15079)	(.05275)	(.0603)	(.05171)
lnPOP	.09251**	.01205	.06795	-.01367	-1.049**	-.8453*	.0677	.0121
	(.04432)	(.01654)	(.05201)	(.01251)	(.6825)	(.44335)	(.05342)	(.00916)
Cons	1.816***	.4736***	1.747***	.47229***	12.908	11.31*	1.555**	.4736***
	(.55609)	(.17637)	(.67808)	(.17009)	(8.442)	(5.8159)	(.70938)	(.11904)
R <sup>2</sup>	0.9942	0.9917			0.7323	0.2949	0.9941	0.9917
WaldX <sup>2</sup>	19700.49	25966.4	18707.18	28417.21	742.19	52292.14	164431	83781
AR (1)			-3.12	-3.66				
AR (2)			.97	2.42				
Sargan			0.00	0.00				
N.obs	80	140	80	140	80	140	80	140

lnBG= log of block grant; lnTEXP= log of total expenditure; lnREV= log of total revenue; lnSBG= log of specific development grant; lnSOP= log of salary expenditure to personnel; lnPOP= Log of region level total population.

Notes: Regression results for the system (gmm) are obtained by Arellano-Bond dynamic panel-data estimation of first-difference equations using GMM. All available lagged values of the dependent variables in each previous period is used as instrumental variables in the first differencing. \*\*\*, \*\*, \* indicates significance at  $\rho < 0.01$ ,  $\rho < 0.05$  and  $\rho < 0.1$ , respectively.



Table 6 presents the results of estimation for state-level revenue. First, the lagged values of previous period state revenue are statistically significant at  $\rho < 0.01$ , suggesting that previous period revenue reinforces subsequent period revenue. This is an interesting result, which indicates that states strive to generate more revenue when they depend on central government transfers. Or it confirms what we expect: that tax revenue is persistent. One obvious interpretation is that the level of tax revenue depends on the states' economic structure, which is constant. Hence, it is natural for revenue to be constant as well. Second, the effect of central government grants on state-level revenue does not attain statistical significance at  $\rho < 0.01$  level. The regression results in the table for the differences in state-level revenue show that neither central block grants nor specific development grants have a crowding-out effect on local tax revenue mobilisation efforts. Indeed, there does not seem to be any significant causal association between central government grants and state-level revenue.

This result suggests that local governments really look at central government grants as extra bonuses they receive to boost expenditure, rather than a substitute for local revenue collection. There are two potential alternative explanations for the findings. First, central government simply wants poor states to increase expenditure and employment to reduce the level of local poverty. That explanation follows from the argument that increased spending and expanded employment in poor states may be exactly what the central government wants, as a cost for social order and political stability. However, ineffective use of state-level spending could amount to loss of necessary political support and stability. In the long term, non-productive spending by states may create a rift between the central government and local people, thereby losing political support and stability. The alternative explanation is that central government block grants to state-level governments consider the potential revenue capacity of states instead of the actual revenue they mobilize. The grant system rewards states that can exploit their revenue potential, and this might have bolstered local revenue mobilisation efforts.

Table 6 outlines the results of the estimation for state-level revenue. Firstly, the statistically significant lagged values of the previous period's state revenue at  $\rho < 0.01$  suggest that previous period revenue reinforces subsequent period revenue. This result is intriguing, indicating that states strive to generate more revenue when relying on central government transfers or confirming the persistence of tax revenue. The interpretation could be that tax revenue is inherently tied to the states' constant economic structure. Therefore, the constancy of revenue is a natural outcome. Secondly, the impact of central government grants on state-level revenue does not achieve statistical significance at  $\rho < 0.01$ . The regression results for the differences in state-level revenue indicate that neither central block grants nor specific development grants exhibit a crowding-out effect on local tax revenue mobilization efforts. No significant causal association is observed between central government grants and state-level revenue.

These findings suggest that local governments view central government grants as additional resources to boost expenditure rather than substitutes for local revenue collection. Two potential alternative explanations arise. Firstly, the central government may desire poor states to increase expenditure and employment to alleviate local poverty. This aligns with the notion that increased spending and expanded employment in poor states could be a deliberate strategy for social order and political stability. However, if state-level spending is ineffective, it may lead to a loss of political support and stability in the long term. The second explanation posits that central government block grants to state-level governments consider the potential revenue capacity of states rather than their actual revenue mobilization. The grant system may reward states capable of exploiting their revenue potential, thereby encouraging local revenue mobilization efforts.

**Table 6** Effect of Grants on Size of State-Level Revenue

	Dependent variable: Size of state-level revenue							
	Iv(gmm)		System(gmm)		Fixed effect		Random effect	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
LnREV <sub>t-1</sub>	.55144*** (.20793)	.6669*** (.17933)	.47374*** (.11343)	2.4186*** (.58367)	-.123** (.04479)	-.0187 (.1193)	.5514*** (.1115)	.6669*** (.0956)
lnBG	.18017 (.21951)	.26419* (.16527)	.24079 (.37151)	-.60279 (.54345)	.91008 (.8016)	.7339** (.23685)	.18017 (.32709)	.26419 (.24437)
lnSDG	.06908 (.19324)		.02551 (.27711)		.17332 (.17694)		.06908 (.2522)	
lnSOP	.2695884 (.26739)	.17622 (.14581)	.29162 (.35084)	-1.2807** (.62261)	.11551 (.61371)	.20158 (.19607)	.26959 (.37998)	.17622 (.19189)
lnPOP	-.09206 (.27967)	-.09783 (.05114)	-.068728 (.37507)	.42884** (.20851)	3.5116 (2.1442)	3.858*** (.82978)	-.09206 (.36879)	-.09783 (.07064)
Cons	-.1967 (3.1296)	-.970931 (.79373)	.14088 (4.8539)	5.2162** (2.6813)	-54.732 (24.49)	-56.6*** (11.821)	-.19671 (4.0336)	-.97093 (.46197)
R2	0.8512	0.9350			0.6774	0.5712	0.8512	0.9350
WaldX <sup>2</sup>	2384.32	6833.87	361.28	314.00	31.51	1285.80	4369.59	52954.99
AR (1)			-5.42	-3.65				
AR (2)			2.17	2.29				
Sargan			57.77	9.57				
N.obs	80	140	80	140	80	140	80	140

lnBG= log of block grant; lnTEXP= log of total expenditure; lnREV= log of total revenue; lnSBG= log of specific development grant; lnSOP= log of salary expenditure to personnel; lnPOP= Log of region level total population.

Notes: Regression results for the system (gmm) are obtained by Arellano-Bond dynamic panel-data estimation of first-difference equations using GMM. All available lagged values of the dependent variables in each previous period are used as instrumental variables in first differencing. \*\*\*, \*\*, \* shows significance at  $\rho < 0.01$ ,  $\rho < 0.05$  and  $\rho < 0.1$ , respectively.

## Conclusions and Recommendations

This study seeks to contribute to the existing literature on the relationship between central government grants to state-level governments and the fiscal behavior of local governments, using empirical data from nine federal states and one city administration in Ethiopia.

Descriptive findings indicate that state governments heavily rely on their own revenue to finance expenditures, but there is substantial dependence on general block grants from the central government. In 2004, the average total grant constituted approximately 82 percent of state-level expenditure, decreasing to around 70 percent in 2018.

The analysis and statistical tests reveal that the block grant from the central government is positively associated with an expansion in state-level employment and expenditure. This aligns with previous studies, suggesting that central government grants may induce fiscal indiscipline in terms of expenditure and personnel employment. While the central government may use grants to expand state-level expenditure for political support, wasteful spending could backfire, leading to a loss of political support and stability.

Contrary to the market-preserving federalism model, central government block grants do not appear to crowd out state-level revenue mobilization efforts. The positive but insignificant coefficients for the block grant's effect on state-level revenue suggest that local governments perceive central government grants as additional budgetary support rather than a substitute for local revenue collection. This finding contradicts some empirical evidence but aligns with the

idea that the grant system considers the potential revenue capacity of states, encouraging local revenue collection.

The research recommends two complementary approaches to enhance financial discipline at the state level. Firstly, promoting local economic development to evolve state governments' own revenue bases, as assigned revenue sources are of a local nature. Secondly, ensuring accountability for state-level government expenditure to prevent wasteful spending that could compromise the delivery of essential public goods, potentially leading to a loss of political support and stability.

### Limitations and Further Research

All research—regardless of how well conducted or constructed—encounters certain drawbacks. As a result, this research acknowledges some limitations. The primary limitation with the research is related to data availability, particularly of grants to states prior to 2004. Because of this, the research relies on data for a limited period. State-level macro-economic performance indicators, such as GDP growth and poverty index, would have been used as control variables were data available. However, the study can use data with different estimation methods to check for robustness. Second, in assessing the impact of intergovernmental transfers on fiscal behaviour of local governments, the cross-state study of local governments in Ethiopia is conducted using panel data. These states are at various levels of social and economic development, which implies that there might be better results if local government within a specific state was investigated – this was not owing to inferior quality data.

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The author reports no potential conflict of interest.