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The Impact of Intergovernmental Transfers on Fiscal Behaviour of Local Governments in Ethiopia

Dejene Mamo Bekana

November 2020

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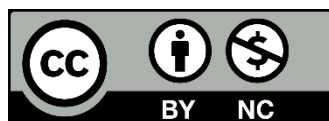
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Dejene Mamo Bekana

Summary

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 per cent of their annual expenditure. As a result, fiscal federalism in Ethiopia appears to be a form of delegation of spending responsibilities. It has to be considered in the context of a decentralised tax system, but with a transfer scheme and political hierarchy. The results are found to be robust to alternative econometric estimation techniques.

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

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1 Background to the study

Does an intergovernmental transfer affect the fiscal behaviour of local government? There are three fundamental reasons for investigating this question in Ethiopia:

- the absolute value of fiscal transfers from the federal government to state governments in Ethiopia has grown – we need to understand the role of intergovernmental transfers for fiscal equalisation, and the implication of these transfers in framing the fiscal behaviour of local governments
- there are gaps and contentious arguments in the literature on the nexus of intergovernmental transfers and fiscal behaviour of local government
- to identify the effects of intergovernmental transfers in modelling exercises to provide nuanced policy implications for the design and implementation of fiscal transfers in federal political systems that purport to support fiscal decentralisation.

Fiscal transfers from the federal government to state governments have significantly increased in Ethiopia over the last quarter century, to bridge persistent vertical and horizontal fiscal inequalities. The federal government provides more than 36 per cent of revenue and grants mobilised to state governments in fiscal transfers (Moges 2005). Available evidence from local governments indicates that state-level expenditure has grown substantially, while the revenue raised by state governments has been increasing slowly. Evidence on the effect of vertical transfers is rather mixed – there is no strong evidence that vertical transfers lead to lower local tax revenue. Masaki (2018) provides strong evidence that vertical fiscal transfers improve efforts by local governments to mobilise revenue. But it also provides an incentive to expand state-level fiscal activities that lead to increased expenditure by local government units (Vegh and Vuletin 2011). This means that state governments could develop a dependency on intergovernmental transfers instead of developing their own local revenue base. In effect, local tax administration systems remain poorly developed. On the other hand, there is a strong incentive for local governments to expand their activities with the fiscal implication of having access to more federal intergovernmental transfers (Inman 2008).

The intergovernmental fiscal transfer-fiscal behaviour of local government nexus is still a subject of debate at both theoretical and policy levels. Despite the theoretically postulated negative effect of intergovernmental transfers on local government revenue, there is incongruity in the literature on the impact of intergovernmental transfers on the fiscal behaviour of local government. Masaki (2018) has empirically established that intergovernmental transfers positively affect the revenue generated by local government. Various previous studies have confirmed the importance of intergovernmental transfers in explaining differences in fiscal behaviour between local governments (Gamkhar and Shah 2007; Romer and Rosenthal 1980; Tsang and Levin 1983). This might be the case when the subnational governments consider vertical intergovernmental transfers as complementary to, not substituting, their own revenue. Contrary to this, another strand of the literature, though with few studies, suggests that intergovernmental transfers may not affect the fiscal behaviour of local government. For instance, Gamkhar and Shah (2007) find that the effects of general grants on grant recipient spending is insignificant. External flows of funds in the form of intergovernmental transfers to local-level government do not crowd out local revenue generation (Buettner and Wildasin 2006; Zhuravskaya 2000). In a similar way, other studies show that intergovernmental transfers tend to be used for financing public expenditure instead of tax saving as tax relief (Rosen 2005; Hines and Thaler 1995). Dahlberg et. al. (2008), using fiscal data from Sweden, establish that vertical intergovernmental transfers do not negatively affect mobilisation of local tax revenue, but result in increased local

government expenditure. Recent empirical investigations (e.g. Brun and Khdari 2016; Caldeira and Rota-Graziosi 2014; Zhang 2013) uncover a 'crowding-in' impact of transfers from central government to local government – grants and subsidies from central government expand own revenue collection of local government.

Finally, it is necessary to identify the impact of intergovernmental transfers on the fiscal behaviour of local government in assessment of the nexus of fiscal transfers-local government fiscal behaviour. Comprehensive local government behaviour-intergovernmental fiscal transfer policies are not likely to be effective unless they are cognisant of the various ways through which intergovernmental transfers interact with local government fiscal behaviour. Drawing on the literature concerning the impact of intergovernmental fiscal transfers by Gamkhar and Shah (2007), Romer and Rosenthal (1980) and Tsang and Levin (1983), this paper aims to contribute to the practice and policy of intergovernmental fiscal relations using empirical panel data for the period of 2004-2018 for local governments in Ethiopia. The research aims to provide answers to the following two basic questions:

- Do intergovernmental fiscal transfers crowd out local government revenue?
- Do intergovernmental fiscal transfers lead to increased local government public spending?

2 The literature and conceptual framework

What is fiscal federalism? Fiscal federalism is the consequence of federal political arrangements. Federalism refers to a political structure in which the political power to govern is allocated between central government and subnational governments that form a federation (Arowolo 2011; Akindele and Olaopa 2002). According to Arowolo (2011: 4) 'federalism is a political theory that is divergent in concept, varied in ecology and dynamic in practice'. In a similar manner, Vincent (2001) claims that federalism entails every level of government being autonomous and independent in its delimited scope of authority, and having proper taxing powers for independent sources of revenue. Fiscal federalism implies that each tier of government needs to generate sufficient resources to accomplish their legally bestowed functions without seeking financial assistance from other levels of government (Wheare 1963). Members of the federation should be able to act independently on matters within their own jurisdiction (Ewetan 2011). Following from this basic conceptualisation of federalism, an array of theoretical definitions of fiscal federalism have been offered by different scholars.

In theory fiscal federalism is conceptualised in two ways: the traditional view, based on knowledge and welfare theories, and the contemporary view. The traditional view emphasises the comparative advantage of local government tiers in terms of information about the preferences of local people (Tiebout 1956; Musgrave 1959; Oates 1972). Local government has the best information about their local situations and their residents' problems. As a result, local government is in a better position to make decisions about the provision of goods according to the preferences of local people (Hayek 1945). Moreover, competition between jurisdictions allows citizens to match their preferences with a particular menu of local public goods (Tiebout 1956). Empowering local government may enhance the accountability and transparency of the governmental system (Hankla 2009). As citizens are more capable of collecting information about the performance of local governments, and imposing sanctions on them through a sorting process or elections, fiscal decentralisation is beneficial to improving accountability, which is critical to quality governance (Hankla 2009). In a similar manner, Musgrave (1959) and Oates (1972) explain that appropriate assignment

of jurisdiction over public goods and taxes enhances social welfare – goods and services with a better welfare effect at the local level can easily be designed and delivered by local government tiers. Based on the ‘decentralisation theorem’ constructed by Musgrave (1959) and Oates (1972) from Tiebout’s original model of fiscal federalism (Tiebout 1956), and the basic Pigouvian theory of subsidies (Pigou 1920), the traditional model of fiscal federalism focuses on the rational assignment of taxation, expenditure responsibilities and intergovernmental transfers to different tiers of government.

The contemporary view of fiscal federalism is based on examination of issues such as principal-agent problems, information economics, the theory of the firm, organisation theory, and the theory of contracts (Oates 2005). There are significant theoretical explanations implying that the new theory of fiscal federalism is based on contemporary industrial and economic organisation theory (Weingast 1995; Crémer et al. 1996; Garzarelli and Limam 2003; Garzarelli 2004; Oates 2004). Qian and Weingast (1997) frame the emerging organisation theory approach to the study of public finance in general, and fiscal federalism in particular, as the ‘Second Generation Theory of fiscal federalism’. Oates (2005) notes that the essential difference, or contribution, of the second generation theory of fiscal federalism comes from its focus on the political economy of intergovernmental structures, unlike the traditional theory of fiscal federalism. It emphasises incentives embodied in various political and fiscal institutions of the federal state. Similarly, Qian and Weingast (1997: 84), drawing parallels with the ‘new theory of the firm’, argue that ‘the appropriate political institutions align incentives of political officials and citizen welfare’. However, Rodden and Ackerman (1997) criticise this approach for its failure to characterise fully the nature of the political structures that would comprise a ‘market-preserving federalism’. Specifically, they claim ‘With its lack of political foundations, market-preserving federalism leaves too many important questions unanswered to be useful as a prescriptive model for institutional reform in the developing world’ (Rodden and Rose-Ackerman 1997: 1571). Weingast (1995) introduces the notion of market-preserving federalism to investigate how competing jurisdictions create incentives for credible commitment and lower transaction costs.

Transfers are needed because of the ‘assignment problem’ (Oates 1972) – responsibilities cannot be clearly identified as federal responsibilities or local responsibilities when assigning responsibility for expenditure. Moreover, progressive approaches to federal taxes and the decentralisation of responsibility for expenditure often result in vertical as well as horizontal inequality between the different tiers of government. This implies that federal government needs to give back part of its revenue to state government on grounds of fiscal equalisation. However, there exists strong empirical evidence that such transfers may be counterproductive (Buettner and Wildasin 2006; Zhuravskaya 2000). These transfers could erode the revenue-generating capacity of local government, while providing a strong incentive to increase its expenditure. This means intergovernmental transfers are expected to result in substitution effects on the efforts of local government to raise revenue (Gamkhar and Shah 2007; Romer and Rosenthal 1980; Tsang and Levin 1983).

Empirical studies in public finance literature provide strong evidence that intergovernmental transfers in the form of 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). But they conclude that intergovernmental transfers do bolster local-level spending. The existing literature offers evidence that intergovernmental fiscal transfers provide a strong incentive for local government to increase local-level spending, rather than raise an equivalent amount of own income (Inman 2008; Vegh and Vuletin 2011). Generally, the existing empirical evidence offers mixed results on the effect of intergovernmental transfers on local government revenue and spending. For instance, Gamkhar and Shah

(2007) point out that the effects of general grants on grant recipient’s spending are statistically insignificant. Given this backdrop and the emerging feature of Ethiopian fiscal federalism, one can query the effect of the intergovernmental transfer scheme adopted by the Ethiopian federal government on local governments’ fiscal behaviour.

Available evidence shows that the federal government of Ethiopia provides three different forms of financial support to state governments: direct subsidy to finance states’ spending budget, general purpose grants, and specific development grants (Moges 2005). However, the impact of these transfer schemes on the fiscal behaviour of state governments has not been statistically investigated. It is clear that statistically informed investigation of the impact of intergovernmental transfers is crucial for nuanced policy suggestions concerning intergovernmental fiscal relations in a federal system. Previous empirical investigations (e.g. Brun and Khdari 2016; Caldeira and Rota-Graziosi, 2014; Zhang 2013) conclude crowding-in impact of transfers from central government to local governments – grants and subsidies from central government expand own revenue of local governments. On the other hand, some other studies (Buettner and Wildasin 2006; Zhuravskaya 2000) conclude that external flows of funds to local-level governments in the form of intergovernmental transfers crowd out local revenue generation. These results might differ in the different strands of the literature based on the design of the grant system and the way recipients look at the central grant. The grant system being designed to reward those states that are able to exploit their revenue potential may bolster local revenue collection. When the recipient subnational government of the central grant considers it as complementary to, not substituting, own revenue, the vertical grant might not have a negative effect on local government revenue. Furthermore, Dahlberg et al. (2008) confirm that intergovernmental transfers from the central government do not undermine local tax revenue, but increase local government expenditure. To the best of my knowledge, there is no single empirical and econometrically grounded study on this issue on fiscal federalism in Ethiopia. The literature available on Ethiopian fiscal federalism is limited to a qualitative explanation of the design and nature of intergovernmental relations.

3 Research methods and the data

3.1 Methodology

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 standard literature relies on the actual number of employees at the subnational level to operationalise the size of fiscal dependents (e.g. Guo 2008). However, this research uses the total wage bill for the public sector at the state level due to lack of state-level time series data for the number of employees. The rationale behind the use of the total wage bill for the public sector at the state level is that a change in salary expenditure is often driven by an increase in employment. The limitation of using this measurement is that pay revisions may also drive a change in salary expenditure. But pay reviews in the public sector are not expected every fiscal year.

The data is analysed using different econometric tests in order to identify the robustness of the results. Primarily, the system general method of moments (GMM) is applied. This is because it is a more efficient econometric specification to deal with problems of cross-dependence, endogeneity and heteroscedasticity. The possible source of endogeneity in this research is that of reverse causality between fiscal behaviour of state-level government and grants from the federal government. There exists strong evidence that GMM generates results with robust standard errors in the presence of cross-dependence and heteroscedasticity (Arellano and Bond 1991; Arellano 2003; Hall 2005). Although the GMM estimator does not have specific features that correct for cross-sectional dependence, in the GMM approach cross-sectional dependence and potential auto-regression are controlled for with the inclusion of the lagged dependent variables as regressors. To check for robustness of the results to alternative estimation techniques, a linear panel econometric test of the fixed effect and random effect models were employed. The problem with these linear models is that they offer relatively weaker predictions of the existence of problems of heteroscedasticity and cross-dependence (Greene 2012). The Driscoll and Kraay (1998) robust standard errors developed for fixed effect panel data models is applied as suggested by Hoechle (2007) to rectify the estimation bias. The empirical analysis follows the GMM's regression technique. The motivation for using this estimation technique is to provide special focus to the issue of endogeneity.

3.2 The data

The data used in this research was obtained from the state governments' Bureau of Finance and Economic Development, the House of Federation, the federal Ministry of Finance and the Ethiopian Statistical Agency. State governments' revenue and expenditure was collected from state government bodies. Federal government revenue and expenditure was obtained from the Fiscal Policy Department of the Ministry of Finance. Federal government grants to states were collected from the Ministry of Finance. The population of states was obtained from the Ethiopian Statistical Agency. Documents for qualitative analysis relating to the distribution formula for the federal grant to states were collected from the House of Federation and the Ministry of Finance.

The investigation relies on a panel dataset for nine federal states and one city administration in Ethiopia for the period 2004-2018. Ethiopia has a system of federal states, with nine autonomous states and two city administrations (Addis Ababa and Dire Dawa) that are directly accountable to the federal government. Addis Ababa city is excluded from the cases as it does not receive a block grant for the federal government – as an outlier, its inclusion would have a profound effect on the robustness of the results. The period is chosen because of constraints in data availability. Ethiopia reverted to a federal system of political

arrangement in 1992, and as a result state-level data for grants is only available from 2004; the latest year for other variables is 2018. There is no structured institutional mechanism for keeping data at state level. Although budget data for states is available for years before 2004, grant data is not available at regional level. The choice of states is guided by the availability of data. Observations are for annual periods, yielding 15 time series data points per state and a total of 150 observations.

4 Fiscal federalism: the case of Ethiopia

The process of fiscal devolution began in Ethiopia after the introduction of a federal political structure (FDRE 1994) in the early 1990s (PDRE 1987). Central government controlled all aspects of financial and human resources under the previous unitary state system, leaving little role for local provincial councils to play in planning and implementing fiscal policy. An immediate ramification of the reform to a federal system of political arrangements was the central government decentralising many fiscal responsibilities previously vested in the national government to state governments – making local government entities the major providers of local public goods and services. Responsibility for expenditure and the power to tax are shared between the federal government and state government by constitutional means that define the scope and limits to the power vested in each tier of government.

The Constitution specifies responsibilities under the jurisdictions of the federal and regional governments (FDRE 1994). Article 52 sub-article 1 of the FDRE constitution defines expenditure responsibilities assigned to the federal government. These include: foreign affairs, defence and national security services, ensuring macroeconomic stability, development activities of national characters. It appears that central government constrained itself to a limited area, such as macroeconomic management and policing the common market within the country (Hankle 2009). Bird (2000) argues that pure public goods, such as foreign policy, defence, immigration and international trade, can best be formulated and implemented by the national government. In line with this theory, Ethiopian law provides extensive decision-making, legislative and executive powers and responsibilities to the regional states. The most notable ones are: enactment of state constitution and laws; formulation and execution of economic, social and development policies, strategies and plans; administration of land and other natural resources in the territory; levy and collection of taxes assigned to the regional states; designing standards for state-level civil services and payment; and maintenance of state-level security forces (Wagner 2007). The Constitution reserves all powers not provided to the federal government to the regional government.

The power to mobilise revenue (tax and non-tax) is also shared between the government and state government through constitutionally allocated tax bases to the tiers of government (FDRE constitution: Art. 96, 97, 98). The Constitution preserved the most dominant sources of tax revenue to the federal government (Box 1); state governments are allocated tax bases with a local nature (Box 2).

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.
9. It shall levy and collect Federal stamp duties.

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 assignment grants:

- federal government an exclusive right to tax international trade and a major share in domestic indirect taxes. These two sources make up about 70 per cent of the tax base. This implies that the main sources of tax revenue are assigned to the federal government. The federal government also collects payroll, sales taxes and non-tax revenue from public enterprises owned by the federal government, irrespective of their location across the country. The federal government also shares tax revenue from three bases with states: any tax related to incorporated companies, any tax related to joint

venture investment with states, and natural resource royalties including petroleum, gas and forest royalties.¹

- state governments are allocated direct taxes from labour and individual traders within their jurisdiction, land use fees, and taxes on subsistence-based farm households. The tax base allocated to state governments offers relatively little revenue and is relatively less buoyant (Girouard and Andre 2005; Belinga et al 2014).

The situation is similar with respect to non-tax revenue sources – the federal government collects about 80 per cent of non-tax revenue in the fiscal system. The combined regional share of revenue collection has remained fluctuating around 20 per cent of total revenue – slightly higher in recent years. As a result of the vertical and horizontal inequality that arises from the assignment problem of tax power (Oates 1972), the federal government has been providing a substantial amount of block and specific grants to state governments:

- Block grants are transfers from the federal government that are allocated at the discretion of state government bodies. This type of vertical grant is generally expected to affect the financial behaviour of state governments, due to their control over the allocation decision.
- Specific grants are resources provided to states to fund stipulated development programmes and projects – these are demand-driven, and are given more to states in relatively impoverished localities. States do not control the allocation of this kind of transfer. It can be assumed that this type of vertical fiscal transfer does not affect the fiscal behaviour of state governments (Guo 2008).

The distribution criteria for block grants are usually problematic and often politicised. State governments compete to access limited resources from the same base, while the federal government considers increased spending and expanded employment in poor states as a necessary cost for social order and political stability. Limitations in the distribution criteria may widen existing inequality, while the system of financial transfer purports to equalisation. Hence, there is a need to develop relatively objective criteria that appeal to stakeholders.

The Ethiopian federal transfer system uses grant distribution formula developed and approved by the House of Federation – the upper house in the Ethiopian federal system. When introduced, equal weight was given in the grant distribution formula to three indicators – population, level of development and revenue generation. This has evolved over time – the poverty index was considered as an additional factor in 2001, only to be dropped in 2004 (see Table 1). From 2009 the grant distribution formula was changed to the proportion of fiscal gap of the states in the total fiscal gap – the fiscal gap being estimated as the difference between revenue potential (not actual revenue) of the states and their respective expenditure needs. In this approach fiscal gaps are calculated by first estimating revenue-generating potential using a representative revenue system, and expenditure needs using a representative expenditure system. The fiscal gap of each state is calculated as the difference between potential revenue and its expenditure needs. Then the fiscal gap of all states is aggregated and the relative fiscal gap of each state to the total fiscal gap is determined. Available evidence indicates that the total financial resources available for grant – the pool – is always smaller than the total fiscal gap of regional states. The grant is distributed based on the relative fiscal gap of regional states.

¹ The split between the federal government and states respectively is as follows. Incorporated companies: 50:50 for direct taxes (profit tax and dividend tax); 70:30 for VAT and excise taxes from the same sources. Jointly-owned public enterprises: profit tax is shared based on capital contribution, payroll tax 50:50 and 70:30 for VAT and excise taxes. Natural resource royalties: 50:50 for profit tax and 60:40 for royalties.

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 reportedly cover more than 80 per cent 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 principle approach, the formula only used the states' revenue potential, not the revenue they actually collected. Six types of tax are used for this purpose.² 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 more than 90 per cent of the states' expenditure.³

5 Descriptive analysis

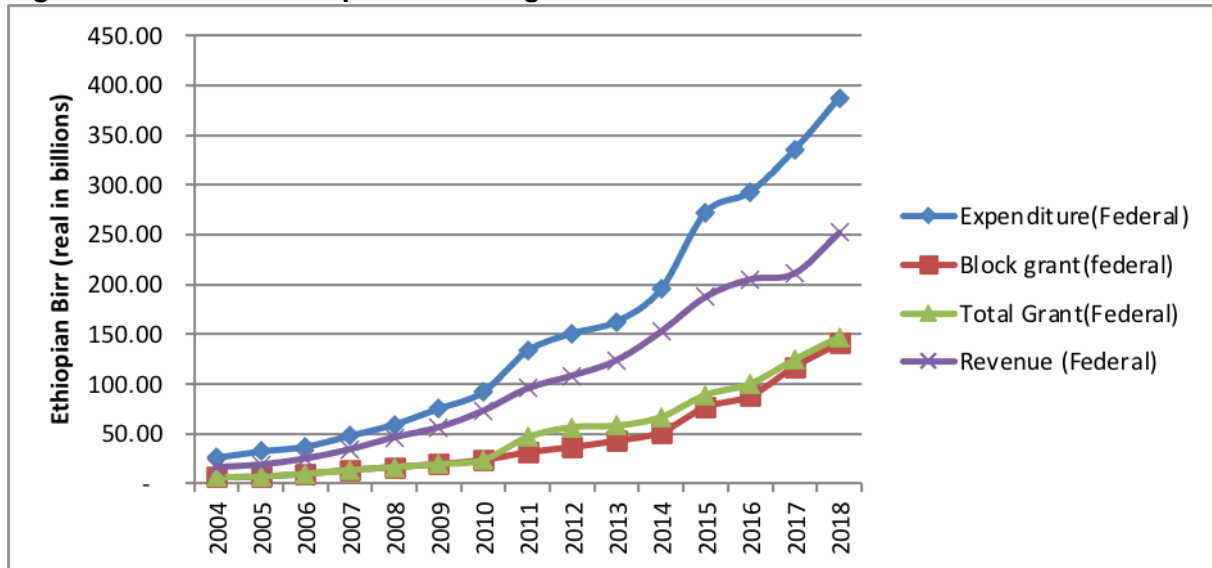
Using data from the Ministry of Finance, Figure 1 shows that central government has been providing substantial amounts of grant to state governments. Since about 2003, central government's revenue and expenditure have grown significantly. Yet a sizeable proportion of central government resources are transferred to states for vertical fiscal equalisation. In 1997 the block grant transferred to states was about 38 per cent of central government revenue. This figure has grown to 58 per cent in 2018. Similarly, the central government grant to states as a ratio of its total expenditure has grown from around 25 per cent in 1997 to 38 per cent in 2018.

Available evidence indicates 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.

² These taxes include: personal income taxes, business profit tax, VAT, agricultural income tax, rural land use tax; and turnover tax (TOT).

³ 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%).

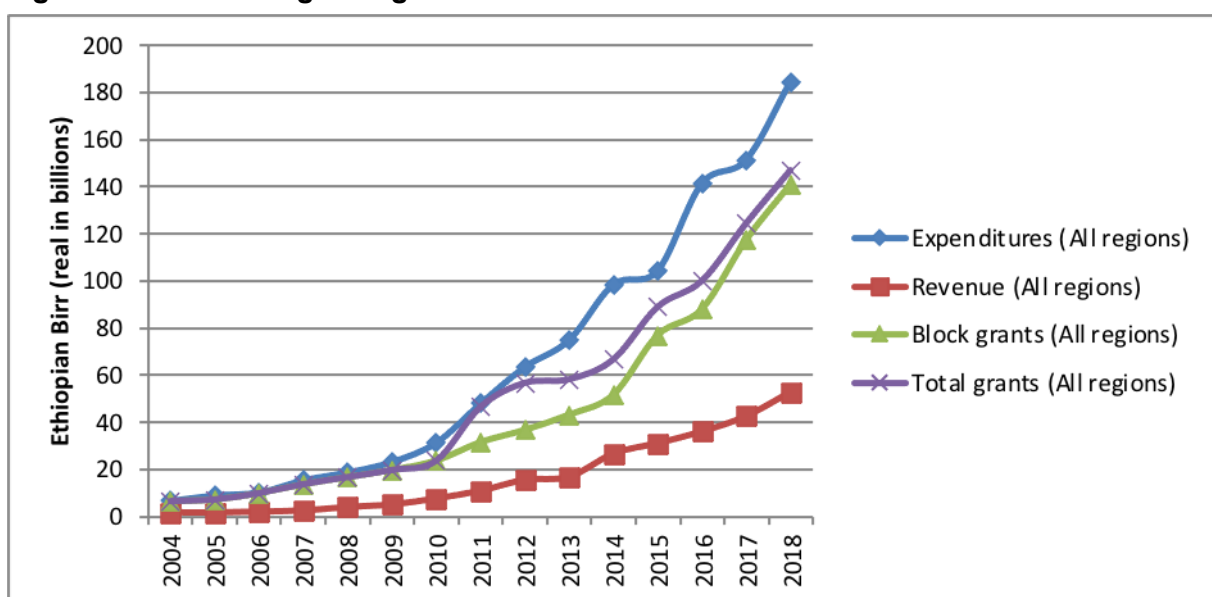
Figure 1 Trends in Ethiopian Federal government’s fiscal data



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 a large proportion of expenditure of subnational governments is financed by the grant from federal government. 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 43.9 billion over the same period. Consequently, 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 per cent in 2004 to 73.77 per cent in 2018. This still means that a significant proportion of the state-level budget is financed by the financial transfer from central government.

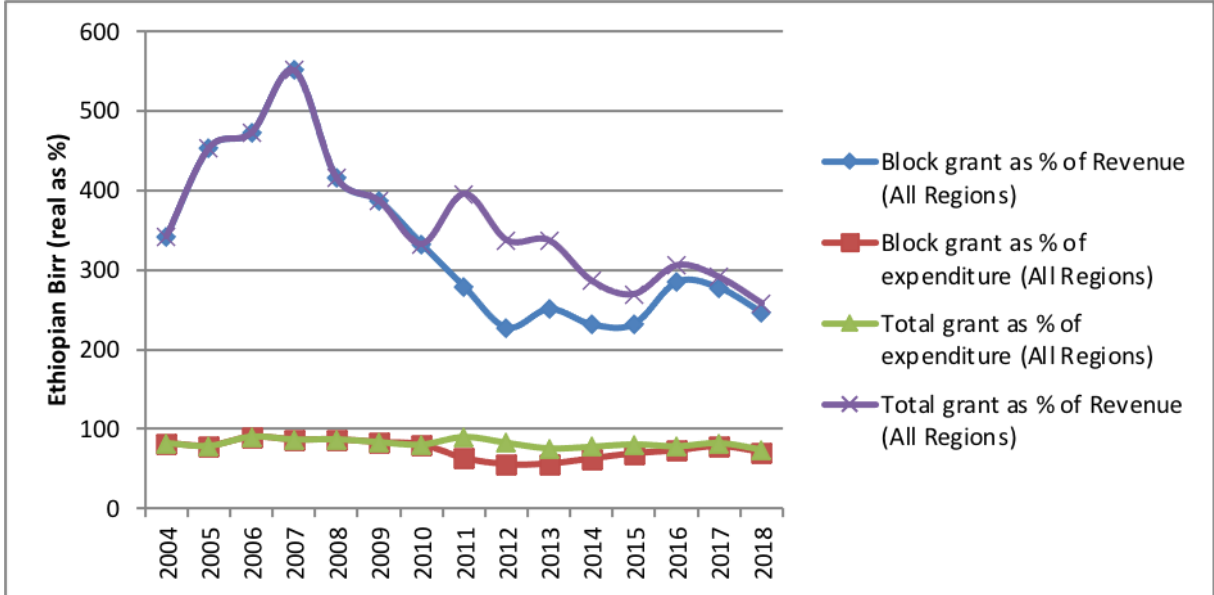
Figure 2 Trends in regional government’s fiscal data



Source: Ministry of Finance, 2019

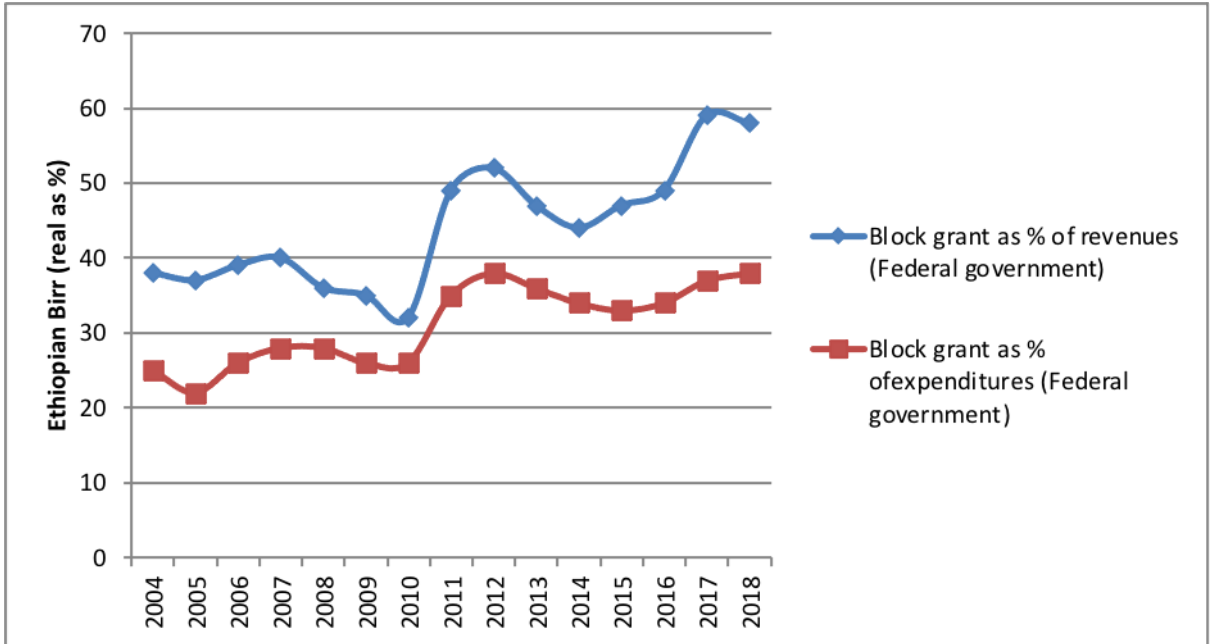
The available evidence indicates interesting results concerning state-level revenue, expenditure and the grants they receive from central government (Figures 3 and 4). The overall grant as a proportion of state-level total revenue decreased from around 342 per cent in 2004 to 257 per cent in 2018. This indicates 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 3 Trends in grants as percentage of revenue and expenditure of regional governments in real terms



Source: Ministry of Finance, 2019

Figure 4 Trends in grants as percentage of revenue and expenditure of the federal government in real terms



Source: Ministry of Finance, 2019

Mainly due to problems of data availability, empirical research on Ethiopian fiscal federalism has so far emphasised 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 analysing the fiscal effect of intergovernmental transfers. A qualitative approach is preferable when trying to understand the basic nature of the context in detail.

State-level variations in Ethiopia are enormous. Table 2 indicates that cross-state differences in fiscal matters are significant. Some Ethiopian states, such as Oromia, Amhara, and Southern Nation's and Nationalities, are relatively highly populated. These states are also endowed with better natural resources and, hence, greater potential for mobilising 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 modernisation of the whole nation. In addition, after nearly three decades of decentralisation of spending responsibilities and the power to tax, state-level governments are now the main 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 analysed.

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 10 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 a period of 15 years.

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 parenthesis						

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 substantially 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 essentially increased, demonstrating regional disparity at country-level in economic development and state-level revenue. The three richest states account for over 99 per cent 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 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

The descriptive data presented above provides evidence that state-level governments in Ethiopia were on average becoming more dependent on intergovernmental transfers from the central government, and expanding their expenditure at a faster rate than their respective revenue mobilisation at local level. Although the statistics present the overall temporal trends in state-level governments' fiscal matters, this does not establish a causal link from central grant dependence to local expenditure, to rise in salary to personnel, to tax collection efforts. As a result, the current paper conducted econometric regressions on salary expansion to personnel and local revenue on state-level panel data. Dynamic panel data models are used, because state-level governments do not make a one-shot decision on the absolute amount

of government employment or revenue for a particular year, but rather decide based on the level of employment and revenue of the previous year (Guo 2008). State-level government employment is expected to remain stable, and hence salary-to-personnel is also expected to remain stable expect in the case of pay revisions. The principal explanatory variable in the regressions is the central government transfer to state governments.

The central government of Ethiopia provides two types of grants to state governments (block grant and specific development grant). The block grant is a financing scheme that the central government provides to states for the purpose of fiscal equalisation. It was introduced in the 1990s, following the restructuring of the Ethiopian state arrangement into a federal system. From 2004 to 2018, the amount of federal block grant to state-level governments increased from ETB 5.6 billion to over ETB 130 billion, making it an important fiscal equalisation instrument. The amount of block grant to each state is determined by population size, tax potential, expenditure needs and the level of local development. The second type of grant, introduced in 2011, is a specific development grant. The purpose for which this type of grant is used is predefined by the central government and it is aimed at balancing cross-regional local economic development. The specific grant to subnational governments decreased from ETB 12.78 billion in 2011 to ETB 6 billion in 2018. Because this includes mostly conditional transfers that can only be used for stipulated purposes, such as infrastructure, education, sanitation and public health, it should translate nearly cent for cent into local expenditure. Generally, greater dependence on central government financial transfers corroborates those states assuming that the central government will always bail them out, and thus local spending and government size increases and tax collection can be eroded. The major proportion of state government expenditure is paid for by the central government grant, and this might result in dependency on the central government.

6 Findings and discussion

The results for the dynamic panel data models of fiscal dependents, state-level expenditure and revenue are presented in Tables 4, 5 and 6 respectively. Table 4 presents the results of estimation for fiscal dependents as the dependent variable. First, the lagged values of fiscal dependents is statistically significant at $p < 0.01$, signifying that previous period spending on personnel salary bolsters subsequent period spending for the same purpose or they are simply highly correlated over time, which makes perfect sense. Second, the regression results in this table concerning the changes in wage bill clearly show the stimulating effect of central government grants. The average total wage bill for states over the study period is 49.02 per cent of total state-level expenditure. Similarly, states' own-source revenue stimulates expansion of the size of fiscal dependents at state level. However, the federal government grant has more impact on fiscal dependents of states. The coefficients for the central government block grants to states are statistically significant at $p < 0.05$. Nevertheless, the coefficients for the specific development grants do not attain statistical significance at $p < 0.05$, although it is in the expected positive direction. The only case of significance for this variable is when the coefficient is negative under the fixed effect model – which is not the preferred model. The preferred model for interpretation is the GMM model. The results essentially imply that general block grants to subnational governments reinforce the amount of employment by local governments considerably. The findings suggest that state governments use the general grants not just to sustain the existing number of employees, but also to employ new staff. In an understaffed public service system this might not be a problem in itself. However, increased spending on salaries for personnel inherently adds little value to local economic development. The statistically insignificant coefficients for

specific development grants suggest that states use this category of subsidy for its intended purpose, rather than expanding the number of their employees. Specific development grants are directly earmarked to specific development projects. Consequently, it is less probable that this kind of grant has a distortionary effect on the fiscal behaviour of local governments.

Table 4 Effect of grants on size of state-level fiscal dependents

Dependent variable: size of state-level fiscal dependents measured by personnel salary								
	lv(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 ²	.99	0.99			0.9385	0.8449	0.9942	0.9942
WaldX ²	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 time period are used as instrumental variables in first-differencing. ***, **, * indicates significance at $p < 0.01$, $p < 0.05$ and $p < 0.1$ respectively.

Table 5 presents the results of estimation with state-level expenditure as the dependent variable. First, the lagged values of previous period state-level total expenditure are statistically significant at $p < 0.01$. This suggests that states tend to expand the basic public goods and services they provide, because undersupply 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 undersupply 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 appears to attain statistical significance at $p < 0.01$ level. Similarly, the coefficients for central government block grants to states are all statistically significant at $p < 0.01$. However, the coefficients for specific development grants attain statistical significance at $p < 0.05$ 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 indicates that the effect

of an increase in local revenue appears to be less than the effect of an increase in central government grant. 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 significant proportion of their expenditure.

Table 5 Effect of grants on size of state-level total expenditure

Dependent variable: size of state-level total expenditure								
	lv(gmm)		System(gmm)		Fixed effect		Random effect	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
lnTEXP-1	.2345*** (.06408)	.4349*** (.06021)	.09346 (.06271)	.1859*** (.05782)	.1375* (.0637)	.3992*** (.05469)	.2075** (.09554)	.435*** (.05639)
lnREV	.1211*** (.02535)	.1067*** (.0229)	.1007*** (.01867)	.1156*** (.02049)	.04673** (.01574)	.1213** (.04745)	.1074*** (.02193)	.1067*** (.0153)
lnBG	.37697*** (.07785)	.3551*** (.063353)	.4443*** (.06633)	.4711*** (.06207)	.4457** (.16397)	.2366*** (.06485)	.4045*** (.13172)	.355*** (.0674)
lnSDG	.06057* (.03449)		.08024** (.03808)		.1503*** (.0325)		.07621 (.04947)	
lnSOP	.09036 (.05767)	.09374 (.0639)	.1888*** (.04949)	.2409*** (.04487)	.3856** (.15079)	.3287*** (.05275)	.118** (.0603)	.0937* (.05171)
lnPOP	.09251** (.04432)	.01205 (.01654)	.06795 (.05201)	-.01367 (.01251)	-1.049** (.6825)	-.8453* (.44335)	.0677 (.05342)	.0121 (.00916)
Cons	1.816*** (.55609)	.4736*** (.17637)	1.747*** (.67808)	.47229*** (.17009)	12.908 (8.442)	11.31* (5.8159)	1.555** (.70938)	.4736*** (.11904)
R2	0.9942	0.9917			0.7323	0.2949	0.9941	0.9917
WaldX2	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 time period are used as instrumental variables in first-differencing. ***, **, * indicates significance at $p < 0.01$, $p < 0.05$ and $p < 0.1$ 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 $p < 0.01$, 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 over time. One obvious interpretation is that the level of tax revenue depends on the states' economic structure, which tends to be 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 $p < 0.01$ 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 take into account the potential revenue capacity of states instead of the actual revenue they mobilise. The grant system rewards states that are able to exploit their revenue potential, and this might have bolstered local revenue mobilisation efforts.

Table 6 Effect of grants on size of state-level revenue

Dependent variable: Size of state-level revenue								
	lv(gmm)		System(gmm)		Fixed effect		Random effect	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
LnREV ₋₁	.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 ²	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 time period are used as instrumental variables in first-differencing. ***, **, * indicates significance at $p < 0.01$, $p < 0.05$ and $p < 0.1$ respectively.

7 Conclusions and recommendations

This study aims to contribute to the literature concerning the dynamics between central government grants to state-level governments and the fiscal behaviour of local governments. It relies on an empirical panel dataset from nine federal states and one city administration in Ethiopia.

The descriptive findings suggest that state governments' own revenue plays an essential role in financing their respective expenditure, though there is heavy reliance on the general block grants from central government. The block grants from central government cover the major proportion of state-level expenditure. In 2004, the average total grant as a proportion of state-level expenditure was about 82 per cent; this has decreased to about 70 per cent in 2018.

This study has analysed and statistically tested the stimulating effect of block and specific development grants on fiscal behaviour of state governments in Ethiopia. Both vertical and horizontal fiscal imbalances, and the political environment in Ethiopia, make local fiscal unruliness and opportunistic behaviour very possible. As expected, the block grant from central government is confirmed to be positively associated with expansion in state-level employment, as well as expenditure. This finding suggests, concomitant with previous studies (Guo 2008; Inman 2008; Vegh and Vuletin 2011), that central government grants to local governments may generate fiscal indiscipline (mismanagement of revenue and expenditure) as far as expenditure and personnel employment is concerned. Central government may seek to expand state-level government expenditure through grants to buy political support and stability at the cost of fiscal discipline. However, wasteful state-level spending could be counterproductive, and has the potential to backfire in terms of necessary political support and stability. In the long term, non-productive spending by state governments may create a rift between central government and local people, thereby leading to loss of political support and instability. In this investigation it is interesting to find that general central government grants bolster state-level employment more than own-source revenue does. Overall, the findings presented in this research have insightful implications for the study and practice of fiscal federalism in Ethiopia.

Against what the model of market-preserving federalism suggests (Weingast 1997), block grants from central government do not crowd out state-level efforts to mobilise revenue. The coefficients of the block grant for its effect on state-level revenue appear to be positive but insignificant. This result suggests that local governments really look at central government grants as extra budgetary support they receive to boost expenditure, rather than as a substitute for local revenue collection. This is not surprising, because the central government block grant to state-level governments considers the potential revenue capacity of the states, not the actual revenue they collect. The grant system is designed to reward those states that are able to exploit their revenue potential, and this might have bolstered local revenue collection. This finding is supported by previous studies (Guo 2008). However, it appears to be in contradiction with some empirical findings (Buettner and Wildasin 2006; Zhuravskaya 2000), which provide evidence that vertical financial transfers from the federal government erode revenue at state level. 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, due to the politicised nature of fiscal federalism, it appears to be a form of delegation of spending responsibilities, and has to be considered in the context of a decentralised tax system, but with a transfer scheme and political hierarchy.

This research recommends two complementary approaches to promote financial discipline by state-level governments. The first is the promotion of local economic development, so that states' own revenue bases can evolve. This is important, because the potential sources of revenue assigned to state governments are of a local nature. It is mainly the poor level of local economic development that has left efforts of subnational governments to generate revenue unyielding. It is also important to improve the effectiveness of local-level tax administration systems. Second, it is essential to ensure accountability for expenditure by state-level governments. This is because wasteful state-level spending could be

counterproductive in terms of delivering essential public goods and public services. Failure to deliver essential public goods at the local level comes with the potential to backfire in terms of political support and stability. It is critical for political support and stability to ensure that expansion in state-level government expenditure through central government grants does not compromise fiscal discipline.

8 Limitations

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. Due to this, the research relies on data for a limited period of time. Moreover, 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 is able to use available 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 possible owing to poor quality data.

Appendix

Table A1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
InTEXP	150	21.44231	1.62358	18.31598	24.875
InREV	150	19.90998	1.8465	16.1875	24.06549
InBG	150	21.13245	1.556765	18.162	24.53617
InSDG	80	20.06571	1.332188	17.63542	22.45398
InSOP	150	20.64889	1.6630	16.90715	24.30634
InPOP	150	14.8243	1.71425	12.15478	17.50392

InBG= log of block grant; InTEXP= log of total expenditure; InREV= log of total revenue; InSBG= log of specific development grant
 InSOP= log of salary expenditure to personnel; InPOP= Log of region level total population.

Source: Ministry of Finance, 2019

Table A2 Correlation matrix

	InTEXP	InREV	InBG	InSDG	InSOP	InPOP
InTEXP	1.0000					
InREV	0.9053	1.0000				
InBG	0.9899	0.8771	1.0000			
InSDG	0.8251	0.6603	0.7900	1.0000		
InSOP	0.9833	0.8834	0.9858	0.7773	1.0000	
InPOP	0.9545	0.8108	0.9364	0.9386	0.9290	1.0000

InBG= log of block grant; InTEXP= log of total expenditure; InREV= log of total revenue; InSBG= log of specific development grant;
 InSOP= log of salary expenditure to personnel; InPOP= Log of region level total population

Source: Ministry of Finance, 2019

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