Local Equalization Grants: Purpose, Efficiency Effects, and Design[1]

Lars-Erik Borge
Norwegian University of Science and Technology

1. Introduction

Public services like education, health, welfare, and infrastructure are important for poverty relief, for providing equal opportunities, and for long term economic growth. In many countries around the world the bulk of these services are provided by subnational governments. In federal countries these tasks are typically assigned to states or provinces, while in many unitary countries they are assigned to local governments (municipalities or counties).

Several justifications can be made for decentralized service provision. States and local governments may be better informed about benefits and costs of policy programs, and decentralized provision may therefore promote allocative efficiency. This is the essence of the so-called "decentralization theorem" developed by Oates (1972). Mobility between local governments (Tiebout 1956) may further increase allocative efficiency by making communities more homogeneous. Moreover, decentralization may promote cost efficiency by giving voters opportunity to move out of inefficient communities and through yardstick competition.

A main challenge with decentralization is that it will bring about variation in fiscal capacity and thereby variation in service provision. Variation in service provision may in turn lead to inequality of opportunity and more regional variation in long term economic growth. The role of equalization grants is to limit the variation in fiscal capacity and contribute to more equalized service provision throughout the country.

This paper discusses equalization grants to state and local governments. It starts out in section 2 by reviewing the arguments for equalization grants. Although the main argument for equalization grants is equalization, it is emphasized that they also may be efficiency enhancing. This does not imply that the usual trade-off between equity and efficiency does not apply to equalization grants. Possible efficiency problems related to equalization grants are discussed in sections 3 (tax equalization) and 4 (spending needs equalization). Section 5 is devoted to the design of equalization grants. The key issue is whether they should be paid out as general grants or earmarked grants, and how this assessment depends on the regulatory setting. Finally, section 6 provides some concluding remarks.

In the rest of the paper I use the term national government for the grantor upper level government and local government for the recipient lower level government. I acknowledge that this choice of terms may delude some readers to think that the context is a unitary state. However, that is certainly not the case. The discussion also applies to federations and the relationship between federal and state governments, as well as the relationship between state and local governments.

2. The Purpose of Equalization Grants

The principle of horizontal equity (Buchanan, 1952) is the natural starting point for a discussion of equalization grants. This principle states that identical households should not be treated differently depending on their place of residence. This means that two identical households that pay the same amount of taxes should receive the same level of public services wherever they reside. It is an obvious conflict between fiscal decentralization and horizontal equity because the ability to provide a given level of services for the same tax rate will vary across local governments. The revenue-raising capacity will differ because of variation in per capita tax bases, and the per capita costs of providing a given service level will differ because of variation in needs and unit costs. The role of tax and spending needs equalization is to put local governments on more equal footing by equalizing the ability to provide a given level of services for the same tax rate.

The principle of horizontal equity does not distinguish between different types of publicly provided goods, but in practice the type of goods provided by subnational governments is of importance. Equalization grants are more widespread and more ambitious when subnational governments have substantial responsibilities for services like education, health, and welfare. These goods are not local public goods in the traditional sense, but redistributive services that serve equity purposes (Boadway 2006, p. 357). From a national perspective comparable provision of such services throughout the country is often an important policy objective, and

[1] The paper is based on a presentation at the 6th Symposium on Fiscal Federalism: The financing of local governments in Barcelona June 14-15, 2010. I am grateful to Richard Bird and Jørgen Lotz for stimulating discussions.

"The role of tax and spending needs equalization is to put local governments on a more equal footing by equalizing the ability to provide a given level of services for the same tax rate"

fiscal equalization can be understood as a mean to achieve that objective. This line of reasoning is similar to Musgrave's (1959, p. 183) "entirely different view" on federalism where "fiscal federalism is interpreted to be an assurance to each citizen of the federation that special social needs such as elementary education will be provided adequately in all states."

"The primary objective of equalization grants is to achieve horizontal equity, but they may also reduce unproductive competition between local governments and intensify productive yardstick-competition"

Although the primary objective of equalization grants is equalization, either to achieve a degree of horizontal equity or more narrowly to achieve more similar provision of welfare services, they may also promote efficiency. A first argument is that if decentralized service provision is considered to be more efficient than centralized provision (for example for the reasons stated in the introduction), equalization grants make it possible to reap efficiency gains without incurring large costs in terms of reduced equity.

Second, equalization grants may reduce unproductive competition between local governments. Consider a community with wealthy individuals that is able to provide good services even with low taxes. This community will clearly be an attractive place of residence, but in the absence of equalization grants, inmigration of poor and costly individuals will erode the tax base and the good services. Consequently, local governments may engage in a competition to avoid inmigration of such people. From a national perspective this competition is largely unproductive – the poor and costly have to reside somewhere.

Third, yardstick competition may be more effective with equalization grants. Yardstick competition means that voters compare the performance of their government with the performance of neighboring governments. In the absence of equalization grants, such comparison may be difficult. It is hard to tell to what extent good services and/or low taxes are the result of governmental efficiency and to what extent they are the result of high fiscal capacity. Equalization creates a "level playing field" that can make yardstick competition more efficient since good services and/or low taxes to larger extent signals governmental efficiency.[2]

So far one may get the impression that usual trade-off between equity and efficiency does not apply to equalization grants. It rather seems to be a double dividend – equity and efficiency can both be achieved at the same time. This is however, not the case. But in order to discuss distortive effects of equalization grants, it is useful to discuss tax and spending needs equalization in greater detail.

3. Tax Equalization

Variation in per capita tax base is an important source of variation in fiscal capacity. Two local governments using the same tax rate may end up with very different tax revenues per capita if the difference in per capita tax base is large. Moreover, a local government with a low per capita tax base may have relatively low per capita tax revenues even with a high tax rate. And a local government with a high per capita tax base may have relatively high per capita tax revenues even with a low tax rate. The role of tax equalization is to make per capita tax revenues more comparable for local governments using the same tax rate.

Tax equalization may be designed in different ways. A rather general formula is the following

$$TE^j = a \cdot t^* \cdot (TB^R - TB^j),\ t^* = t^j, t^R \qquad [1]$$

where TE^j is the tax equalization grant to local government j, TB^j is it's per capita tax base, TB^R is the reference tax base, t^* is a tax rate, and a the rate of compensation. The reference tax base is typically defined as the average tax base or a fraction thereof. The tax rate t^* could either be the local government's own tax rate (t^j) or a standardized or reference tax rate (t^R) determined by the national government.[3] The rate of compensation determines the fraction of the difference in (calculated) tax revenues that are equalized.

A first alternative is to lift the bottom by providing grants to local governments with per capita tax base below the reference level and to set the tax equalization grant equal to zero for those with tax base above. The tax equalization is asymmetric in the sense that equation [1] only applies to local governments with per capita tax base below the reference level. Another alternative is a more symmetric tax equalization scheme where equation [1] applies to

[2] Kotsogiannis and Schwager (2008) provide a formal analysis and also identify a counteracting effect.

[3] The standardized tax rate could for example be the average tax rate in the country.

all local government. Local governments with per capita tax base above the reference level will then be contributors, i.e. they receive negative grants. For a given rate of compensation, a symmetric equalization will be more ambitious than an asymmetric one.

"The role of tax equalization is to make per capita tax revenues more comparable for local governments using the same tax rate"

It is important to emphasize that tax equalization requires a degree of national coordination of local taxes. Tax equalization cannot be carried out in a meaningful way if local governments rely on very different taxes (property, income, wealth, etc) or if they define the tax base in very different ways (e.g. different assessment practice).[4] It makes little sense to provide tax equalization to a local government that has a low property tax base simply because the assessed property value is very low compared to the market value. The most streamlined tax equalization would be based on a national tax system where the tax base is defined and calculated by national authorities, and where the local tax simply is a piggy-back on the national tax base.

"Tax equalization raises several efficiency problems: the weakening of incentives for local development policy and the distortion of the tax level and the tax structure when it is based on the local government's own tax rate"

Tax equalization raises several efficiency problems that may distort efficiency. The first, and perhaps most obvious problem, is that tax equalization weakens the incentives for local development policy by weakening relationship between the local tax base and local government revenue. It is easily seen from equation [1] that the national government will "punish" a successful development policy[5] by reducing the tax equalization grant. Similar arguments can be made with respect to incentives for tax collection and tax assessment.

In addition to equalization of tax revenues, tax equalization also provides insurance. A negative shock to the local tax base is (partly) compensated by grants from the national government. The quantitative importance of the insurance mechanism can be illustrated by utilizing equation [1] to calculate the sum of tax revenues (TR^j) and equalization grants:[6]

$$TR^j + TE^j = t^j\,[(1-a)\,TB^j + aTB^R] \qquad [2]$$

It is evident from equation [2] that the effective tax base under tax equalization is a weighted average of the local government's own tax base (TB^j) and the reference tax base (TB^R). The insurance towards shocks to the local tax base is higher the higher the rate of compensation. If the rate of compensation is high the tax equalization scheme in effect creates a national insurance pool. The revenues of an individual local government are first and foremost affected by the national tax base, while the development of its own tax base only plays a minor role.

When the national government provides insurance through the tax equalization scheme, the need for precautionary actions by local governments is reduced. In particular the incentives to build up rainy-day-funds to handle periods of low tax revenues are reduced.

Finally, tax equalization may distort the tax level and the tax structure when it based on the local government's own tax rate. It is then evident from equation [1] that the tax equalization grant is higher the higher the local tax rate. Tax equalization can be interpreted as a subsidy on local tax increases that may lead to too high tax rates. Moreover, if the equalization does not apply to all local taxes, the local government can increase their tax equalization grant by shifting tax revenues towards the taxes that are equalized. In other word, local governments have incentives to over-utilize taxes that are equalized and to under-utilize taxes (and other revenue sources) that are not equalized. These distortive effects for tax level and tax structure can be avoided by basing the tax equalization on a standardized tax rate instead of the local government's own tax rate.

The fact that tax equalization grants may be distortive does not imply that they should be abolished all together. We are rather back to the familiar case with a trade-off between equity and efficiency, and where the optimal rate of compensation is less than 100 percent.

4. Spending Needs Equalization

The motivation for spending needs equalization is that equalization of per capita revenues (achieved through tax equalization) is insufficient to equalize service provision. The reason is that per capita costs of providing a given service level

[4] When there is little national coordination of local tax bases, the so called macro approach (Boadway and Shah, 2007) is a possible way out. The approach would use indicators such as consumption or household income to measure the potential fiscal capacity of local governments. However, available indicators would be imperfect measures of the ability of local governments to raise revenues.

[5] A successful development policy is a policy that increases the per capita tax base (TEj).

[6] For simplicity it is assumed that the tax rate t* in equation [1] is the local government's own tax rate.

will differ because of variation in demand and unit costs. The role of spending needs equalization is to compensate for cost and demand factors. Empirical analyses are used to identify relevant cost and demand factors and to quantify their (relative) importance. It is a standard requirement that the compensating factors should be objective criteria that cannot be directly affected by the local governments.

"The role of spending needs equalization is to compensate for costs and demand factors. The criteria used can be divided into three groups: age composition, social factors, and cost factors"

The criteria that are used in spending needs equalization can broadly be divided into three groups; (i) age composition, (ii) social factors, and (iii) cost factors. The age composition of the population affects the demand for public services, in particular when the local governments are responsible for services like child care, education, and care for the elderly that are directed towards specific age groups. Health care is also a service where age is an important demand factors. Social factors are other variables than age affecting the demand for services. Social factors include unemployment, poverty, divorce rate among others, and will typically affect the demand for transfers and social services. Cost factors are criteria that affect the unit cost of public services. A prime example is that small and sparsely populated communities may have cost disadvantages due to diseconomies of scale. Regional labor market conditions affecting the public sector wage is also a relevant cost factor.

Should we be concerned about any efficiency problems related to spending needs equalization? The answer to this question depends on the type of criteria. The concern is least for the age composition of the population, in which case it rather can be argued that spending needs equalization promotes efficiency. In the absence of spending needs equalization, local governments have incentives to reduce service standards to avoid inmigration of age groups that are high demanders of public services. But as argued above, this competition among local governments is unproductive from a social perspective since the "expensive" age groups have to reside somewhere. Compensation for an "expensive" age composition should be regarded as a necessary condition for decentralization of welfare services such as child care, education, health, and care for the elderly.

The competition argument can also be applied to the social factors, but this case is more complicated. The reason is that providing social services and transfers to the poor and the unemployed is not the only task of the local governments. It will also be their responsibility to reduce poverty and unemployment. So if they are compensated for higher expenses related to social factors, the incentives to prevent poverty and unemployment are reduced.

Compensation for cost factors is the most problematic from an efficiency perspective. Several arguments come into play here. First, it is not necessarily socially optimal to provide the same level of services in high-cost communities as in low-cost communities. Even from a social perspective it makes sense to provide most services in the areas where the unit cost is the lowest. Second, it can be questioned whether the cost factors are objective. Population size can be affected through voluntary amalgamations and the settlement pattern through land-use regulation (an important local government responsibility in most countries). As a consequence, compensation for such cost factors may obstruct the development of a more efficient local government structure and settlement pattern.

The efficiency problems do not imply that spending needs equalization should be abolished. As for tax equalization, the efficiency problems related to social factors and cost factors call for less than full compensation. Age composition however, should be fully compensated.

5. Design of Equalization Grants

Intergovernmental grants come in different types. It is usual to distinguish between general grants, categorical block grants, and matching grants. General grants and categorical block grants are similar in the sense that they are based on objective criteria, but they impose different requirements on the recipient government. General grants have no strings attached, while categorical block grants must be spent on a specified service or activity. Matching grants differ from general grants and categorical block grants by being directly related to spending or service provision, either as a percentage of total spending in a particular spending category or as a specific amount per service provided.

How should equalization grants be designed, as general grants, categorical block grants, or matching grants? A first answer to this question departs from the observation that equalization grants are for equalization, not for affecting local priorities. This observation rules out categorical block grants and matching grants, of which both are intended to affect local priorities, and leaves us with the guideline that equalization grants should be designed as general grants. In the following this recommendation is denoted the textbook design.

The working of the textbook design is that the national government puts the local governments on a more equal footing by the use of equalization grants. The equalization grants are distributed as general grants that the local governments are free to spend as they like. This means that the national government has no control over local priorities. Should that be a concern for the central government? It depends both on the type of services provided by local governments and the degree of preference variation.

Table 1. Alternative designs of equalization grants					
	Textbook	**Nordic**	**Model A**	**Model B**	**Model C**
Equalization grants	General	General	Categorical block grants	Categorical block grants	Matching grants
Direct regulation	No	Substantial	Limited	Limited	Limited
Role of local taxation	Substantial	Substantial	Substantial	Limited	Substantial

Source: Own elaboration.

"Intergovernmental grants come in different types: general (with no strings attached), categorical block (which must be spent on a specified service or activity) and matching grants (directly related to spending in a particular category or service provision)"

In the textbook design local governments provide local public goods. Then there is little need for the national government to be concerned about local priorities. But if the local governments are heavily engaged in provision of redistributive services like education, health, and welfare, it is more of a concern. For such services a common national standard may be warranted. Then the textbook design may generate too large variation in provision of individual services even if local governments' fiscal capacities are equalized. This problem is most severe if there is large variation in preferences across local governments. And even if there is little variation in preferences across local governments, it may be a problem that local priorities differ from the national policy objectives.

Throughout the 1980s and 1990s the Nordic countries adopted the textbook design by implementing major block grant reforms. The reforms implied that a large number of earmarked grants were replaced by general grants. It is fair to say that the textbook design has worked pretty well. Although the block grant systems are criticized from time to time, very few want to turn back the clock to the more complicated and less transparent grant systems that were in place before the reform.

The local governments in the Nordic countries are responsible for most redistributive services within education, health, and social services. Moreover, it is widely agreed that there should not be too large variation in provision of these services. So, why does the textbook design work? Based on the above discussion, the answer is that there is little variation in preferences, both across local governments and between the national and the local level. It is certainly true that the Nordic countries are among the most homogeneous countries in the world, and that the textbook design therefore fits the Nordic context particularly well. Still, this is only a partial answer that misses another important point, regulation of the services through national legislation.[7] National laws are in place for the main services provided by local governments, i.e. there are laws on child care, education, health care, social services, etc. These laws specify responsibilities for local governments and what the inhabitants can expect in terms of services. The laws are accompanied by more detailed administrative regulations worked out by the corresponding ministries. A more complete answer is therefore that the textbook design works both because of little variation in preferences and because of extensive legal regulation.

With the Nordic case as a background, I now turn to a discussion of possible alternatives designs. The alternative models are to be understood as different ways of affecting local priorities in cases where direct regulation is limited or absent. The three alternative models are displayed in table 1 (along with the textbook design and the Nordic model), and differ with respect to the design of equalization grants. In addition to grant design and regulation, I have added a row for the role of local taxation. The reasons are that local taxation usually is considered to be an important element of fiscal federalism that underscores the autonomy and accountability of local governments,[8] and that the alternative models offer different room for local taxation. In the Nordic countries equalization through general grant and direct regulation of services is combined with substantial tax financing.

The first alternative is model A with substantial tax financing and little regulation, and where equalization is designed as categorical block grants to affect local priorities. A main weakness by this model is that the earmarking is too weak given the substantial tax financing. The local governments can easily neutralize any attempt by the national government to affect local priorities. Consider a situation where the national government aims at increasing spending on health care at the expense of education. To achieve this goal it increases the health care grant and reduces the grant for education. However, the local governments can completely undo the effect of the new grant policy by reallocating tax revenues from health care to education. This means that in model A categorical block grant work as general grants, and the only difference compared to the Nordic model is that direct regulation is lost as a tool to affect local priorities.

[7] The relationship between legal regulation and grant design is also discussed by Blom-Hansen (2009).
[8] This view is challenged by McGuire (2001).

Model B is similar to model A in the sense that equalization is done through categorical block grants and that there is little regulation of the services. The difference is that model B has less tax financing. If the share of taxes in local revenues is sufficiently low, the local governments are unable to completely undo changes in the composition of the categorical block grants. Compared to model A, the influence over local priorities is to some extent shifted over to the national government.

"Since equalization grants are for equalization and not for affecting local priorities, they should be designed as general grants. However, it may be legitimate for the national government to have some control over local priorities, particularly when local governments provide redistributive services"

In model C the national government uses matching grants to affect local priorities. Since matching grants affect relative prices, they will have an impact on local priorities even with substantial tax financing. However, the system of matching grants needs to be quite complicated, as the matching rates must be differentiated both across services (to affect local priorities)[9] and across local governments (to achieve equalization). The matching rates should on average be highest for services that the local governments give the least priority relatively to the national policy objective. And the matching rates should be higher for local governments with high spending needs and a low tax base than for local governments with low spending needs and a high tax base. Variation in local preferences would complicate things further by producing a second argument for differentiation of matching rates across local governments. The reason is that a uniform matching policy (across local governments) cannot achieve the same national objective in all local governments when there is variation in preferences across local governments.

Given that some control over local priorities is warranted, the remaining candidates are the Nordic model and models B and C. All three models give the national government some influence over local priorities, but in each case that comes at a cost. First, the cost associated with the Nordic model is that local flexibility may be severely reduced if the regulations become too detailed. In practice it is often easier to regulate inputs than outputs, and as a consequence, the emphasis of the policy making may be shifted from outputs to inputs. Second, the main problem with model B is the limited tax financing that may reduce autonomy and accountability of local governments. Third, with model C the grant system becomes complicated and less transparent as the matching rates must be differentiated across services and across local governments. Moreover, the computation of optimal matching rates requires detailed information on how local governments respond to changes in matching rates.

It is not straightforward to rank the competing models on the basis of these qualitatively very different costs. However, it could be argued that the limited tax financing associated with model B is a fundamental blow to local autonomy and local democracy. If one accepts this argument, we are left with the Nordic model and model C. Personally I would then pick the Nordic model for two reasons; the grant system will be much simpler and more transparent, and also more robust to variation in local preferences that are difficult to observe. The strength of the Nordic model is that national policy objectives are expressed through regulations that impose an adequate level of services in all local governments.

6. Concluding Remarks

The paper has discussed purpose, efficiency effects, and design of local equalization grants. The main purpose of equalization grants is to equalize the fiscal capacity across local governments and thereby contribute to comparable provision of public services throughout the country. The case for equalization grants is particularly strong when local governments are assigned responsibility for redistributive services where equalized service provision is a national policy objective. Equalization grants may also be efficiency enhancing by facilitating decentralization, by reducing unproductive competition to get rid of poor and costly individuals, and to intensify productive yardstick competition.

"Equalization grants may be designed as categorical block grants or matching grants in cases where direct regulation is limited or absent"

However, the standard trade-off between equity and efficiency also applies to equalization grants. Tax equalization reduces the incentives to develop the local tax base and to build up rainy-day-funds, and it may also distort the tax structure and the level of taxation. The case for spending needs equalization is strongest for criteria capturing the age composition of the population,

[9] Uniform matching rates across services would only affect the relative price between public and private consumption. This would be sufficient if the local governments only provide one service (e.g. independent US school districts) or if the disagreement between the national and the local level only relates to the priorities between public and private goods.

while compensation for other factors may be more problematic. Compensation for social factors may reduce the incentives to prevent social problems, and compensation for cost factors may obstruct the development of a more efficient local government structure and settlement pattern.

Since equalization grants are for equalization and not for affecting local priorities, they should, as a first principle, be designed as general grants. However, given that local governments are heavily engaged in provision of redistributive services, it may be legitimate for the national government to have some control over local priorities. National policy objectives can be achieved through direct regulation, categorical block grants, or matching grants, but in each case national control comes at a cost. It is argued that the Nordic model with direct regulation may be preferable since it facilitates substantial tax financing and a simple and transparent grant system, and is robust to variations in local preferences.

References

Boadway, R. (2006), 'Intergovernmental redistributive transfers: efficiency and equity', in Ehtisham Ahmad and Girgio Brosio (eds) Handbook of Fiscal Federalism, Cheltenham, UK and Northampton, US: Edward Elgar, pp. 355-380.

Boadway, R. and A. Shah (2007), 'Overview', in Robin Boadway and Anwar Shah (eds) Intergovernmental Fiscal Transfers: Principles and Practice, Washington, DC: The World Bank, pp. xxvii-xlii.

Blom-Hansen, J. (2009), 'The fiscal federalism theory of grants: Some reflections from political science', Paper presented at the Copenhagen Workshop on General Grants vs. Earmarked Grants.

Buchanan, J.M. (1950), 'Federalism and fiscal equity', *American Economic Review*, 40, 583-599.

Kotsogiannis, C. and R. Schwager (2009), 'Accountability and fiscal equalization', *Journal of Public Economics*, 92, 2336-2349.

McGuire, T.J. (2001), 'Alternatives to property taxation for local government', in Wallace E. Oates (ed) Property Taxation and Local Government Finance, Cambridge: Lincoln Institute of Land Policy, pp. 301-314.

Musgrave, R.M. (1959), *The theory of public finance: A study in political economy*, New York: McGraw-Hill.

Oates, W.E. (1972), *Fiscal federalism*, New York: Harcourt Brace Jovanovich.

Tiebout, C.M. (1956), 'A pure theory of local expenditures', *Journal of Political Economy*, 64, 416-424.