The Impact of Intergovernmental Grants on Regional Government Finance and Regional Economic Development: The Case of the Russia Federation

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1) Introduction

Every attempt at implementing fiscal decentralization involves the assignment of taxes and expenditures to various levels of government and a system of intergovernmental grants. In some transition economies, such as China and Russia, recent reforms are featured by delegating more spending responsibilities to local governments than revenue responsibilities. As a result intergovernmental grants have been used to fill the resulting gap between expenditures and revenues of local governments.

In China, nearly 80 percent of total central transfers are general grants targeting on the fiscal gap between levels of government. In Russia, the role of general transfers changed dramatically since the early 1990. In 1992, general transfers took 44.89 percent of the total federal transfers. Only two year later its share dropped to 22.06 percent.intergovernmental transfers have been increasingly used by the federal government. Given the commomly observed non-transparncy and ad-hoc-based approach of grant aloocation in these countries, it is crucial to evaluate the impact of the existing system of intergovernmental grants on local government behavior in terms of the three objectives of government, namely, allocative efficiency, equity and macroeconomic stability.

In its lending and non-lending operations, however, the Bank's advice is based on the empirical analysis of intergovernmental grants primarily drawn from the experiences of developed countries and may not be of much relevance to transition economies. This is because transition economies, like other developing countries, are characterized by a much more limited set of intergovernmental grants, greater separation of taxing and spending decisions, weaker capacity of institutions to carry out the existing intergovernmental fiscal arrangements, and more importantly, strong dynamics in their market liberalization process. There hardly exists a positive study

nor empirical assessment of the impact of intergovernmental grants on the behavior of local governments in a transition economy.

The objectives of this research proposal are: i) to provide a positive analytical framework more suitable for transition economies for evaluating the impact of intergovernmental grants on the level and composition of regional public spending and regional development; and ii) to apply the framework to the case study of Russia Federation.

2) Analytical Framework

Based on McGuire (1978), we will develops a static, partial equilibrium model to address two issues: (1) **Aggregate local spending and revenue effects**: Do intergovernmental grants stimulate local government spending or are they used to provide tax relief to local residents[1]? Do grants increase the size of local government? Do grants reduce local government tax efforts and undermine mobilization of local revenues? These questions get at the aggregate effects of grants on the size of the local public sector. (2) **Fungibility**: How fungible are intergovernmental grants? Are grants being used for their intended use or are they being diverted for other uses? and if so, how much? To answer these questions, we look at the composition of local government spending: current vs. capital spending, and one sector vs. another (e.g., health vs. education) and investigate the simultaneous impact of a grant on each of the spending categories.

In our empirical implementation, we will allow for other variables which affect the demand for local government spending; some of these are socioeconomic variables (per capita income) and demographic variables (populations size, urbanization).

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[1] This is known as the flypaper effect, "grant money sticks where it hits".

3) Country selection and data requirements

We choose Russia as the case-study country. Several reasons underlie this choice. First, Russia has increasingly used intergovernmental transfers to help mobilize regional resources, and the intergovernmental revenue sharing system are experiencing major reforms. However, according to preliminary analyses, one of the key deficiencies of the Russian system of intergovernmental transfers is the absence of correspondence between revenues assigned and expenditure needs. The system is also ineffective in generating equalizing effect on regional fiscal disparities (World Bank 1996, OECD 1995). The lessons we may learn from the previous experiments in Russia will provide extremely important inputs for the future work in Russia. Second, the World Bank is engaging in a major role in improving regional fiscal intergovernmental relations in Russia. This work is, however, undergoing without compelling argument from the first principals that intergovernmental grants necessary improve the expenditure pattern and regional development (Rutkowski 1996). A careful research on regional finance and the present intergovernmental transfers system will significantly contribute to efficiently and effectively implement the Bank's project.

In the study, proposed data collection includes revenues from various sources, such as taxes, rates, fees, and intergovernmental grants. On the side of intergovernmental transfers, information of four categories of grants and their uses will be collected: (1)regional subventions and turn-over (central-to-local and local-to-central), (2) transfers to "closed cities", (3) sectoral block grants to education and public health, and (4) special target grants (central-to-local only). On the expenditure side, data collection will cover spending on general establishment, tax collection activities, health and sanitation, education, infrastructure, and other development projects. On the side of regional development, data will be collected on regional GDP, regional GVIAO (gross value of industrial and agricultural output, and

regional price index. Information on basic local demographic statistics will also be collected.

The work of data collection will benefit from recent studies by the World Bank (1996a and 1996b).

4) Project Organization and Budget and Time Schedule

This project will be managed by Heng-fu Zou (PRDPE) with the participation of Tao Zhang (PRDPE).

The total research budget is for $10,000 during the fiscal years 1997 and 1998. The research funds will be used to pay the salary of a research assistant for 3 months and data collection

		FY 1997	FY1998
Research Assistant:	$4,500	$4,500 (3 months at $3,000/month)	
Date Collection:	$1,000		

5) Output and Dissemination

The project will produce a research paper and a synthesis note by incorporating the outputs from the research on Bangladesh and China. The study will serve as the preliminary input for the future sector work on regional finance and conditional grants project in the operation. The paper will be initially disseminated through the Policy Research Working Paper Series.

Appendix 1

The Static Analysis and Grant Fungibility

The model here follows closely the ones in McGuire (1978) and Feyzioglu, Swaroop and Zhu (1996). We assume that a typical local government maximizes the following welfare function defined on *n* local public goods

$$w = u(x_1, x_2, ..., x_n) \qquad (1)$$

The budget constraint is given by:

$$\sum_{i=1}^{n} p_i x_i = R \qquad (2)$$

where p_i is the price of the ith public good and R is the local government own revenue.

When intergovernmental grants are introduced into this setup, we have three cases to deal with. Case 1 corresponds to no fungibility in the common sense, namely, all grants are sector-specific and there is no intersectoral allocation. Then the local government maximizes the following utility function with the budget constraint 2 given by:

$$w = u(x_1 + \frac{g_1}{p_1}, x_2 + \frac{g_2}{p_2}, ..., x_n + \frac{g_n}{p_n}) \qquad (3)$$

where g_i is the amount of grant for public good *i*.

Given this simple structure of equations (3) and (2), we can derive the following functions of public services provisions:

$$x_i = x_i(p, R, \frac{g_1}{p_1}, \frac{g_2}{p_2}, ..., \frac{g_n}{p_n})$$

(4)

where p is the price vector and i = *1,..., n*.

Case 2 allows partial fungibility in the sense that for any amount of grant specified for sector *i*, g_i, the local government can allocate a share of ☠i (0 < 💣i < 0) as part of general revenue. In this case, the local government maximizes:

$$w = u(x_1 + (1-\phi_1)g_1 / p_1, x_2 + (1-\phi_2)g_2 / p_2, ..., x_n + (1-\phi_n)g_n / p_n)$$

(5)

subject to

$$\sum_{i=1}^{n} p_i x_i = R + \sum_{i=1}^{n} \phi_i g_i \qquad (6)$$

Case 3 considers total fungibility: all grants can be treated just like the government's own revenue. Thus the local government maximizes:

$$w = u(x_1, x_2, ..., x_n) \qquad (7)$$

subject to:

$$\sum_{i=1}^{n} p_i x_i = R + \sum_{i=1}^{n} g_i \qquad (8)$$

In fact, cases 1 and 3 are just special cases of case 2 by setting the $\phi_i's$ to zero and one, respectively. Therefore, we are going to deal with case 2 only. For considerations of econometric testing and statistical analysis, we choose two specific utility functions in order to determine the specific forms of estimated equations. We first consider a CES function. The local government maximizes:

$$w = \left\{ \beta_1 \left[x_1 + (1-\phi_1)\frac{g_1}{p_1} \right]^{\rho} ... + \beta_n \left[x_n + (1-\phi_n)\frac{g_n}{p_n} \right]^{\rho} \right\}^{\frac{1}{\rho}} \quad (9)$$

subject to budget constraint (6).

That leads to the following functions for local public services provision:

$$x_i = \frac{R + \sum_j g_j}{\sum_j p_j \left(\frac{p_j}{\rho \beta_j} \right)^{\frac{1}{\rho-1}}} \left(\frac{p_i}{\rho \beta_i} \right)^{\frac{1}{\rho-1}} + (\phi_i - 1) g_i \quad (10)$$

and $i = 1,..., n$. For empirical simplicity, we set all prices and parameters $\beta_i^{'}s$ to one. We can test the following three cases.

(1) No fungibility, i.e., $\phi_i = 0$ for all $i = 1,..., n$:

$$x_i = \frac{1}{n}\left[R + \sum_{j=1}^{n} g_j \right] - g_i \quad (11)$$

(2) Fully fungible, i.e., $\phi_i = 1$ for all $i = 1,..., n$:

$$x_i = \frac{1}{n}\left[R + \sum_{j=1}^{n} g_j \right]_i \quad (12)$$

(3) Partial fungibility, $0 < \phi_i < 1$ for all $i = 1,..., n$:

$$x_i = \frac{1}{n}\left[R + \sum_{j=1}^{n} g_j \right] + (\phi_i - 1) g_i \quad (13)$$

Equations (10) - (12) provide us three testable hypotheses.

Next, we look at the linear expenditure system. For the general case, the local government maximizes

$$w = \sum_{i=1}^{n} \beta_i \ln\left[x_i + (1-\phi_i)\frac{g_i}{p_i} - \gamma_i \right] \qquad (14)$$

subject to the budget constraint (6). In (14) ☎$_i$ is the minimum service requirement for local public service *i (i=1,...,n).* The derived function of each public service provision is:

$$x_i = \gamma_i - (1-\phi_i)\frac{g_i}{p_i} + \frac{\beta_i}{p_i}\left[R + \sum^{n} g_j - \sum_{j=1}^{n} p_j\gamma_i \right] \qquad (15)$$

Or write in the form of expenditures.

$$p_i x_i = p_i\gamma_i - (1-\phi_i)g_i + \beta_i\left[R + \sum_{j=1}^{n} g_j - \sum_{j=1}^{n} p_j\gamma_j \right] \qquad (16)$$

For hypothesis test, we again have the following three cases:

(1) No fungibility $\phi_i = 0$ for all *i:*

$$p_i x_i = (1-\beta_i)p_i\gamma_i - (1-\beta_i)g_i + \beta_i\left[R + \sum_{j\neq i} g_j - \sum_{j\neq i} p_j\gamma_j \right]$$

(2) Fully fungible: $\phi_i = 1$ for all *i*:

$$p_i x_i = (1-\beta_i)p_i\gamma_i + \beta_i g_i + \beta_i\left[R + \sum_{j\neq i} g_j - \sum_{j\neq i} p_j\gamma_j \right]$$

(3) Partial fungibility is given by:

$$p_i x_i = (1-\beta_i) p_i \gamma_i - (1-\phi_i-\beta_i) g_i + \beta_i \left[R + \sum_{j \neq i} g_j - \sum_{j \neq i} p_j \gamma_j \right]$$

Again, we can test for all three cases with the above linear specifications. These empirical estimations will show: (1) how intergovernmental grants affect the level and composition of local public expenditures; and (2) how fungible intergovernmental grants are. We can also identify whether local own revenue, R, and intergovernmental grants have different spending effects in financing local public spending. This static model will be applied to the cross-country data and the panel data for the municipal districts in Bangladesh.

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