

# **GAMESMANSHIP AND INTER-GOVERNMENTAL TRANSFER IN MONGOLIA**

Mark Gallagher  
Chief Economist  
DevTech Systems, Inc.  
1629 K Street, NW, Suite 1000  
Washington, DC 20006 USA  
Tel: 202/296-8849  
Fax: 202/296-4884  
[www.devtechsys.com](http://www.devtechsys.com)

June 1999

© DevTech Systems, Inc., 1999

**CENTER FOR APPLIED STUDIES IN ECONOMICS**  
A Division of DevTech Systems, Inc.

*The purpose of the Center for Applied Studies in Economics is to analyze DevTech's applied international economic work and to disseminate the lessons learned from that work in ways that are most useful to policymakers, economists, policy analysts, and other development practitioners.*

# GAMESMANSHIP AND INTER-GOVERNMENTAL TRANSFERS IN MONGOLIA<sup>1</sup>

## INTRODUCTION

There is considerable literature on how to design optimal inter-governmental transfer systems.<sup>2</sup> Much of this literature is based upon U.S. or Latin American experiences and economic deductive reasoning. Some of it is based on other regional cases, as well as the Newly Independent States. In this paper, I want to discuss some interesting findings regarding how not to design inter-governmental transfer systems. This analysis is based upon the Mongolian experience, which is quite similar to other transfer systems in both less developed countries and in those in transition from communism to more western style systems.

## DESCRIPTION OF THE MONGOLIAN TRANSFERS SYSTEM

Transfers from central to local government planned for 1996 amounted to about 15% of total central government spending. This amounts to about one fourth of all local government expenditures. Considering that the major urban local governments are not receiving transfers from central government, this amount is often 60% or more of total spending for those local governments receiving transfers. Obviously, central - local government transfers are important for local governments, and they represent an important part of total central government spending as well.

There are no clear rules in Mongolia as to how transfers should be distributed to the Aimags (provincial governmental units). The practice today is for the Aimags to consolidate budget proposals from *Soms* and *Baks* (both local governmental units) and to present spending plans with projected revenues, upon which they then request central government transfers.

The consolidated requests from the Aimags are received by the Budget Department of the Ministry of Finance. The Budget Department reviews these requests and analyzes the projections of revenues and expenditures included in these consolidated requests. The Budget Department then makes recommendations to the Aimags about how much to cut expenditures and how much to raise revenue projections. The Budget Department also projects, based on its perception of spending needs and revenue projections, the consolidated fiscal deficit by Aimag. The resulting projected deficit is to be filled with budgetary transfers to be included in the coming year's national budget.

## DETERMINANTS OF TRANSFERS

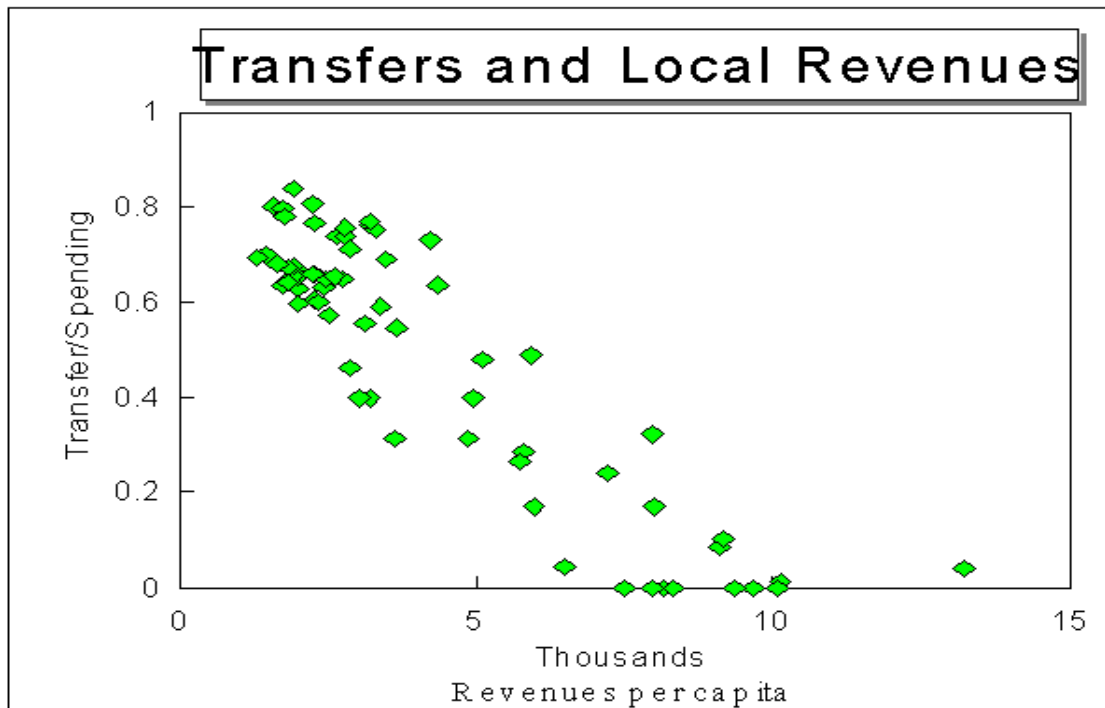
The system is not transparent and appears to provide a disincentive for local government revenue efforts. For instance, the following graph shows a clear inverse relationship between the amount of revenues a local government collects per capita and the amount of transfer it receives from the central government as a share of its total spending.

Of course, it is difficult, but certainly not impossible, to say whether or not local governments receive transfers because they have too small a revenue base to collect greater revenues themselves, or if receiving

transfers actually lessens the necessity for local governments to actually maximize their revenue efforts.

Budget Department analysts indicate that part of the transfer gamesmanship is the tendency for Aimags to underestimate the revenues they expect to collect. When all revenues of Aimags are included over the period 1993-95, it results that most Aimags did indeed under project their revenues. While there may be technical reasons for such bias, this can be tested here to determine if there is any significance between how much they project versus how much they collect and the actual transfers they can finally expect to win from the central budget.

It is important to acknowledge that transfers may in part be based on the taxable base for local government revenue generation. To the extent that an Aimag's local governmental units (Soms) have little tax base, on a per capita basis, it might be expected that they would be greater recipients of central government transfers. The problem then is, how to measure taxable base. In countries where the data support the analysis it is generally found that the poorer a region — based on poverty indicators — the smaller the relative taxable base it would have. In the case of Mongolia, the data on poverty by Aimag or Som were very preliminary and had not yet published. Nonetheless, the World Bank had attempted a survey of poverty in the country which might be of some relationship to taxable base.



An alternative proxy indicator for taxable base is the rate of urbanization in the Aimag. One would expect that the greater the relative urban population in an Aimag the lower the taxable base should be.

A model of transfers is posited based on the following testable propositions:

1. The more revenue an Aimag generates, on a per capita basis, the less it will depend on transfers from the central government budget.
2. Telling the “truth” about revenue expectations will be punished. The more accurate an Aimag’s revenue projection, the lower the central government budgetary transfers it can expect to receive. This is the “gamesmanship proposition.”
3. The greater the taxable base, the less an Aimag will depend upon central government budgetary transfers to cover its own expenditures.

These three propositions can be tested using regression analysis. For the first proposition one should expect to find a statistically significant, negative relationship between the transfer ratio (transfers as a proportion of an Aimag’s total spending) and per capita revenue generation of the Aimag. For the second proposition one would expect to find a statistically significant, inverse (or negative) relationship between the dependency ratio and the ratio of the Aimag’s revenue projection to its actual revenue collections. The ratio of projected to actual revenues is the “truth” index. Hence, we expect the “truth” to be severely punished in terms of reduced transfers. For the third proposition one should expect to find an inverse (or negative) relationship between the taxable base and the transfer per capita. For regression purposes the poverty indicator and the urbanization rate are substituted for the unobservable taxable base. Poverty is negatively correlated with taxable base, while the degree of urbanization would be positively correlated with taxable base.<sup>3</sup> Thus, one would expect to find a positive relationship between per capita transfers and the poverty index, but a negative relationship between per capita transfers and the urbanization rate.

The following regression was estimated:

$$\text{TRAN} = .076 - 0.000018\text{REVPC} - 0.312\text{TRUTH} + 0.002\text{POV} - 0.44\text{URBAN}$$

$$\qquad\qquad (-2.63) * \qquad\qquad (1.51)*** \qquad\qquad (0.60) \qquad\qquad (-3.65)*$$

$$\text{d.f. } 54, R^2 = .49$$

Where

- TRAN is the amount of transfer as share of total spending in an Aimag
- REVPC is revenues per capita in terms of 1993 Tugriks
- TRUTH is the ratio of projected revenue to actually collected revenue
- POV is the poverty indicator
- URBAN is the ratio of urban to total population in an Aimag

The data from this analysis are from the Ministry of Finance, an unpublished data source for poverty distribution, and from the State Statistical Office.<sup>4</sup> T-statistics are in parentheses. Those marked with a single asterisk (\*) are significant at the 99% confidence level. Those marked with three asterisks (\*\*\*) are significant at the 90% level of confidence.

From this regression it is apparent that there is a statistically significant, inverse relationship between the urbanization indicator and the transfers ratio (TRAN). This was expected since the urbanization rate represents one of the proxy variables of taxable base. By including the differences in tax bases in the different Aimag by using the



## NOTES

<sup>1</sup> This paper on the fiscal transfer system in Mongolia draws upon my consulting report (1996) *Fiscal Policy, Planning and Operations*, prepared for the Ministry of Finance of Mongolia, funded by the U.S. Agency for International Development.

<sup>2</sup> A seminal source of such material is Winkler, Donald R. (1994) *The Design and Administration of Intergovernmental Transfers*, World Bank, July.

<sup>3</sup> All of the empirical literature shows a negative relationship between expected tax ratios (and, taxable base) and the size of the agricultural sector. Since all agriculture is rural by its very nature, it makes sense that there should be a similar but inverse ratio between local tax revenue generation capacity and the urbanization rate. On page 11, Stotsky, J. and A. Wolde-Mariam (1997) *Tax Effort in Sub-Saharan Africa*, IMF Working Paper, conclude that "...the share of agriculture in the economy may be an important determinant because small farmers are notoriously difficult to tax and subsistence agriculture (which is generally associated with a large share of agriculture in the economy) does not generate large taxable surpluses."

<sup>4</sup> These regressions were estimated excluding information from Aimags that received no subsidies in the particular year. The same regressions were also estimated including all the data. In which cases, the statistical "goodness of fit" indicators were improved, except for the poverty indicator.

<sup>5</sup> The t-statistic indicates that this coefficient is statistically significant at 95% level of confidence based on a single-tailed test. The test is single tailed since it is expected that the coefficient would be less than zero. There is multicollinearity among the explanatory variable causing "inefficiency" in the estimators. By removing one of the colinear regressors we are able to increase "efficiency" of the remaining estimators.

<sup>6</sup> The problem is referred to as one of "identification" where if revenue effort is affected by transfers and transfers are affected by revenue collections, then it is not a simple matter to tease out the true nature of these relationships. Indeed, applying ordinary least squares regression analysis results in biased results. The direction of the bias can be known, but the magnitude is unknown. A more complete model of revenues and transfers applying two-staged least squares analysis would be necessary to eliminate this bias and to estimate more useful results. This would be an interesting exercise for further study. It needs to be pointed out, that despite this identification problem, these preliminary results coupled with the inclusion of the urbanization indicator are entirely consistent with the hypothesis of transfers discouraging local revenues.

<sup>7</sup> Mongolia is not the first country to experience similar perverse incentives in its system of inter-government fiscal relations. Very similar results had been found in programs in the United States. The case of Bulgaria, which is very similar to that of Mongolia, but having started earlier and now in process of reform, is discussed in Jorge Martinez-Vasquez (1995) "Central and Local Government Tax Relations," in Zeljko Bogetic and Arye L. Hillman *Financing Government in the Transition*, World Bank: Washington, DC.