

Annex 6.1 A preliminary analysis of intergovernmental transfers

The purpose of this annex is to present simulations of the distributive effects of changing the transfer formula. The analysis was prepared by Richard Bird (University of Toronto) and Heng-Fu Zou (World Bank).

Distribution of transfers

To provide a preliminary assessment of the distribution of the present intergovernmental transfers in Romania, a simple analysis of the relation between per capita own-revenue and per capita transfers across the forty-one districts has been carried out. The dependent variable is per capita transfers (table A6.1) and the explanatory variable is per capita own-revenues.

For 1991 the regression equation is:

$$PCT_i = 0.711 + 1.237 [PCOR_i] \quad i = 41 \text{ districts}$$

(3.75)

where PCT_i is per capita transfer to district i , and $PCOR_i$ is per capita own-revenue in district i . (t -statistic is shown in parentheses.)

The equation illustrates a highly significant, *positive* correlation between own-revenues and government transfers in Romania. In fact,

Table A6.1 Per capita transfers by district, Romania, 1991-92*(le)*

District	1991	1992
Alba	1,420 (89)	2,559 (99)
Arad	1,632 (103)	2,506 (97)
Arges	1,098 (69)	1,867 (72)
Bacau	1,565 (104)	2,635 (102)
Bihor	1,327 (83)	2,022 (78)
Bistrita-Nasaud	1,755 (110)	2,916 (113)
Botosani	1,583 (100)	2,601 (101)
Braila	1,049 (66)	2,742 (107)
Brasov	2,590 (163)	2,407 (94)
Buzau	1,040 (65)	1,597 (62)
Calarasi	1,205 (76)	1,956 (76)
Caras-Severin	2,155 (136)	3,457 (134)
Cluj	1,594 (100)	2,728 (106)
Constanta	2,585 (163)	3,765 (147)
Covasna	2,107 (133)	3,570 (139)
Dimbovita	1,093 (69)	1,802 (70)
Dolj	1,380 (87)	2,332 (91)
Galati	1,284 (81)	1,962 (76)
Giurgiu	1,093 (69)	1,905 (74)
Gorj	925 (58)	1,419 (55)
Harghita	1,468 (92)	2,342 (91)
Hunedoara	1,608 (101)	2,431 (94)
Ialomita	1,232 (77)	2,195 (85)
Iasi	1,905 (120)	2,816 (109)
Maramures	2,022 (127)	3,196 (124)
Mehedinti	1,179 (74)	2,198 (85)
Mures	1,577 (99)	2,568 (100)
Neamt	1,305 (82)	1,946 (75)
Olt	1,036 (65)	1,707 (66)
Prahova	1,178 (74)	1,778 (69)
Salaj	1,192 (75)	1,884 (73)
Satu-Mare	2,114 (133)	3,633 (141)
Sibiu	1,758 (111)	2,999 (117)
Suceava	1,206 (76)	2,049 (80)
Teleorman	798 (50)	1,407 (54)
Timis	2,072 (130)	3,472 (135)
Tulcea	1,157 (73)	2,861 (111)
Vaslui	1,956 (123)	3,254 (127)
Vilcea	1,534 (96)	2,543 (99)
Vrancea	1,895 (119)	2,931 (114)
Bucharest	4,134 (261)	6,029 (235)
National mean	1,583 (100)	2,561 (100)

Note: Index is shown in parentheses; national average is 100.

Source: Ministry of Economy and Finance, Government of Romania.

one extra thousand lei of own-revenues is associated with 1,237 lei of transfers. A similar result emerges for the 1992 budget:

$$PCT_i = 1.54 + 1.405 [PCOR_i] \quad i = 41 \text{ districts} \\ (2.68)$$

Even if Bucharest, by far the richest district, is excluded, the positive correlation still exists for 1992:

$$PCT_i = 1.905 + 0.797 [PCOR_i] \quad i = 40 \text{ districts} \\ (1.85)$$

At least in this limited sense, intergovernmental transfers in Romania have *not* been used to correct fiscal inequity across districts.

Another important feature of intergovernmental transfers is their larger standard deviation relative to that of per capita own-revenue. In 1991 the average amount of transfers was 1,583 lei, with a standard deviation of 0.59. In 1992 the average was 2,561 lei, with the standard deviation increasing to 0.823. The standard deviation for per capita own-revenues across counties was only 0.245. Not only is a "poor" (in terms of own-revenues) district unlikely to get more fiscal help from the central government than a "rich" district, but intergovernmental transfers actually increase interdistrict revenue variations.

Although in the end the extent to which any transfers are "equalizing" is inevitably a political issue, it is critical to have an adequate quantitative base to be able both to design equalization features properly (for instance, with respect to matching grants) and, especially, to assess their probable effects. To illustrate the sort of work that needs to be done—but in no sense to replace it—a few simple experiments have been conducted with the limited available data.

One option, for example, might be to adopt a pure *derivation system*, under which each locality receives a given percentage of the central taxes derived from its jurisdiction. Assuming that roughly the 1991 level of transfers was made, about 10 percent of central taxes would then be distributed to local governments (table A6.2, fourth column). In a second experiment the same amount of transfers is distributed on the basis of population (table A6.2, third column): this might be considered a rough proxy for a pure "needs" system. As might be expected, equal per capita transfers would be considerably more equalizing than either the derivation-based transfers or the actual distribution of transfers.

There is also a third approach that includes some equal per capita transfers and a capacity element. Unfortunately, available data are inadequate to enable us to estimate "capacity" in any meaningful sense, but if we assume—perhaps mistakenly—that local fiscal capacity is distributed

Table A6.2 Simulated transfer by district, Romania, 1991

(lei)

District	Existing per capita transfer (1991)	Per capita transfer based on population ^a	Per capita transfer based on derivation ^a	Per capita transfer based on need and capacity
Alba	1,419	1,785	1,364	1,835
Arad	1,632	1,785	1,513	1,817
Arges	1,098	1,785	2,022	1,756
Bacau	1,655	1,785	1,572	1,810
Bihor	1,326	1,785	1,624	1,804
Bistrita-Nasaud	1,755	1,785	1,028	1,876
Botosani	1,583	1,785	712	1,914
Braila	1,813	1,785	1,504	1,819
Brasov	1,498	1,785	2,253	1,728
Buzau	1,039	1,785	1,405	1,830
Calarasi	413	1,785	766	1,907
Caras-Severin	2,154	1,785	998	1,879
Cluj	1,593	1,785	1,803	1,782
Constanta	1,585	1,785	1,944	1,765
Covasna	2,107	1,785	2,232	1,731
Dimbovita	1,092	1,785	1,503	1,819
Dolj	1,380	1,785	1,112	1,866
Galati	1,284	1,785	1,395	1,832
Giurgiu	1,092	1,785	761	1,908
Gorj	924	1,785	2,117	1,745

Note: All simulations take the total transfer as given (41,410 million lei in 1991).

a. Based on the formula: Total transfer/national population = 1,785 lei.

in the same way as national tax collections, we can then carry out a third experiment incorporating (crude) measures of both need and capacity, as shown in the last column in table A6.2. To obtain the transfer based on need and capacity, we first take the need as fully represented by the population in each district and provide 2,000 lei per capita on a national basis. That leads to a total transfer greater than the given one (41,410 million lei). To restore equilibrium, we subtract a certain amount of the transfer from each district according to its fiscal capacity. Since we have no data on district GDP, which is a better indicator of fiscal capacity, we approximate the fiscal capacity in each district according to its total tax revenues collected by the center; that is, more district income results in more tax revenue for the center. The formula of this calculation is: Per capita transfer based on need and capacity in each district = $2,000 - [(2,000 \text{ (national population)} - \text{the existing total transfer}) / (\text{center's tax from each district} / \text{center's tax from all districts}) / (\text{population in each district})]$.

District	Existing per capita transfer (1991)	Per capita transfer based on population ^b	Per capita transfer based on derivation ^b	Per capita transfer based on need and capacity
Harghita	1,468	1,785	1,210	1,854
Hunedoara	1,607	1,785	1,568	1,811
Ialomita	1,232	1,785	1,112	1,866
Iasi	1,904	1,785	1,372	1,834
Maramures	2,012	1,785	954	1,885
Mehedinti	1,179	1,785	1,032	1,875
Mures	1,577	1,785	2,903	1,650
Neamt	1,304	1,785	1,151	1,861
Olt	1,036	1,785	1,209	1,854
Prahova	1,178	1,785	2,258	1,728
Salaj	1,192	1,785	713	1,914
Satu-Mare	2,113	1,785	1,872	1,774
Sibiu	1,758	1,785	3,688	1,555
Suceava	1,206	1,785	1,145	1,862
Teleorman	797	1,785	1,084	1,869
Timis	2,072	1,785	2,146	1,741
Tulcea	1,157	1,785	1,038	1,875
Vaslui	1,956	1,785	978	1,882
Vilcea	1,534	1,785	1,335	1,839
Vrancea	1,895	1,785	1,406	1,830
Bucharest	4,134	1,785	3,792	1,543

b. Calculated as follows: (Total transfer/total central tax from all districts) (central tax from each district) = .09 (central tax from each district).

Source: Authors' calculations.

It must be reiterated that the analysis shown in annex table A6.2 is purely illustrative of the sort of analysis that is necessary to devise an appropriate system of intergovernmental transfers for Romania.

Such studies should be carried out for local, rather than district, government. Moreover, all the parameters employed need to be defined and measured much more carefully. At the present time, however, there is little point in recommending a more specific transfer design for Romania. In the first place, as discussed in the text, it is not clear that much of a transfer system is required at this time, given the current limited role of local governments. Second, the appropriate design of such a system will require a much clearer specification of objectives (with respect to basic needs, regional redistribution, and the like) than is now possible, as well as much more rigorous simulation analysis of the sort sketched above. What can and should be kept in mind now, however, is the importance of keeping to the general lines set out above if any system of intergovernmental transfers is to help,

rather than hinder, Romania's attempt to achieve a developed market economy and an efficient public sector.

Notes

1. Although in Romania "municipality" has a specific meaning, the term municipality will, for reasons of language convention, be used in this chapter to denote all *municipiu*, *oraș*, and *comună* local governments. This is all the more legitimate since these distinctions, which are primarily a historical legacy, have little practical meaning today.

2. Prior to the introduction of tax sharing, transfers for the compensation of operational deficits were made to bridge the gap between local governments' own-source revenues and their expenditures for municipal services other than those delivered by *regie autonome*, in accordance with the Law on Public Finances, which stipulates that "in the case where local administration units cannot cover all expenditure through their own revenue, transfers can be made from the central government budget [to fill the gap]." These subsidies were allocated using a set of revenue and expenditure criteria defined in the annual budget laws and involved the district as a quasi-intermediate-level government.

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