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Abstract

Intergovernmental transfers can be either conditional or unconditional with regard to the autonomy of local governments in spending such financial means. Although fiscal decentralisation has recently been quite pronounced in Eastern European transition countries, the dominance of a purpose- and project-oriented, down-flow transfer system is apparent. In the context of unification, the west German municipal resource allocation system was also implemented in the eastern part of the country, which provides primarily unconditional transfers for local governments. Furthermore, in the case of adopting the principle of parallel development of fiscal capacity between the state and municipalities, as Saxony already has done, the intergovernmental transfer ratio is no longer exogenously but endogenously determined, which better guarantees a just resource allocation between the two jurisdictions. Since the subsidiarity principle backed by sufficient own fiscal resources and unconditional transfers appears to gain significance in providing local utilities, this study shows the recent Saxon experience with the unconditional transfers, which can be considered for the future fiscal devolution process of Eastern European transition countries.

JEL Classification: H7, H2, H4, H6, H8.

Keywords: intergovernmental transfers, fiscal decentralisation, local expenditure needs, municipal tax revenues, vertical fiscal equalisation, Saxony, Germany, European transition economies.

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1. Introduction

The recent process of political and economic transformation in countries like the Czech Republic, Hungary, Poland and Slovakia has not only contributed to the decentralisation of political structure but also significantly enhanced the fiscal autonomy of municipalities in these countries (Fukasaku and de Mello, 1999). In addition, the west German federal system was introduced in the eastern part of the country which is assumed to be the most well-developed system of local and regional government among EU countries making discretionary resources available at a municipal level and favours local autonomy and identity (Cheshire, 1992). In this context many similar types of public activities have recently been assigned to local governments,[1] and some taxes (most notably real estate and municipal trade taxes) were also declared to be local taxes in these transition economies. However, this process has also caused some additional problems, particularly for co-ordinating intergovernmental fiscal affairs between the central and local governments in an efficient way.

Although the intergovernmental transfer system is constructed differently from one country to another, the dominance of a purpose- and project-oriented grant system is apparent in Eastern European transition countries. The amount of down-flow transfers from the central government has traditionally made a substantial contribution to the total municipal fiscal capacity there. In other words, in adopting such abundant financial means, the central government in these countries will further try to lead the provision of local public goods and services, which, on the other hand, could make the process of carrying-out legally assigned public activities by municipalities less 'self-governing'. Yet, it should be emphasised that a full-scale realisation of the subsidiarity principle in the field of local expenditure assignment should ideally be accompanied by the provision of sufficient own fiscal resources and unconditional transfers which can be appropriately and efficiently adopted by the individual municipalities according to their own needs (Frenkel, 1986; Hyman, 1993). For example, this has taken place in Germany in the context of intergovernmental resource allocation system between the *Länder* and their municipalities

[1] Major areas of responsibility which belong to such local government levels are social welfare, school education, cultural affairs, housing and construction, water and energy supply, waste disposal services as well as the provision of transport systems.

called *Kommunalfinanzausgleich*.[2] Furthermore, in the case of adopting the principle of parallel development of fiscal capacity between the state and municipalities, as Saxony already has done, the intergovernmental transfer ratio is no longer exogenously but endogenously determined, which better guarantees a just resource allocation between the two jurisdictions.

Even though Eastern European countries continue to maintain their unitary government system, the subsidiarity principle backed by sufficient tax income and unconditional transfers appears to be gradually gaining importance in providing local goods and services. Such a trend is also desirable. This study primarily compares different types of intergovernmental transfers adopted presently in the selected Eastern European countries and shows the recent Saxon experience with the unconditional transfers, which can be taken into account for the future fiscal devolution process in Eastern European transition economies.

2. Basic Theoretical and Empirical Aspects on Intergovernmental Transfers for Municipalities in European Transition Economies

Intergovernmental grants are aimed at rectifying not only the vertical imbalance caused by the unequal own tax revenues and expenditures of different tiers of governments but also the horizontal imbalance which is led by the different fiscal capacities among same level jurisdictions.[3] In the cases of existing externalities on other jurisdictions, the central government also needs to financially support sub-national authorities in order to guarantee the provision of certain public services on the local level like pollution control, interregional highways, etc. (Tiebout, 1961; Oates, 1972; Davis and Lucker, 1982; Frenkel, 1986; Ali, Lerme and Nakosteen, 1993; Boadway and Hobson, 1993; Hyman, 1993; Rosen, 1995; Dahlby, 1996; Ahmad and Craig, 1997). Furthermore, the amount of grants should vary with the local expenditure needs and inversely with local fiscal capacity,

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[2] In the context of the German state resource allocation system (*Länderfinanzausgleich*) unconditional grants are also made from states with above-average fiscal capacities (e.g. Bavaria, Baden-Württemberg and Hesse) to states with below-average fiscal capacities (e.g. Saarland, Lower Saxony and New German Länder). In addition, the federal government offers supplementary grants to the financially weak states in the eastern and western parts of Germany, of which some have also conditional character (e.g. for solving debt service problems in Bremen and Saarland). Furthermore, all major taxes (personal and corporate income taxes as well as value added tax) are shared by the federal (*Bund*), state (*Länder*) and municipal (*Gemeinde*) governments. Altogether these shared taxes currently amount to ca. two thirds of tax revenues in the country.

[3] The re-allocation of fiscal resources from one level of government to another can also take place through sharing of tax revenues. In this case tax bases can be shared on a tax-by-tax basis, or taxes can be pooled and shared systematically thereafter.

while their distribution must be transparent and fair. More importantly, an effective transfer system should neither encourage overspending nor weaken tax collection efforts on the sub-national level (Gage and Mandell, 1990; Jones and Cullis, 1994; Bahl and Linn, 1994; Shah, 1994a and 1994b; Winkler, 1994; Oates, 1998).

Transfers can be conditional (i.e. closely tied with specifications regarding the use of the funds and/or the performance achieved in the supported programme) or unconditional respecting the autonomy of local governments in spending such financial means. The block grants also have a conditional character; they are, however, designed to support broad areas of local activities (like education, environmental preservation, etc.) rather than specific projects. On the other hand, intergovernmental transfers can be open-ended or subject to certain limits. All these types of grants have advantages and shortcomings at the same time (Musgrave and Musgrave, 1980; Shah, 1991; Ma, 1997). In addition, the EU grants have been often made on the basis of the additionality principle, which requires — as a eligibility criterion for the supporting grants — the partial financial participation of local governments in providing local goods and services in its territory.

In general fiscal stress takes place either when the costs of providing local services increase faster than revenues needed to finance them, or when, at given costs of public service provision, local government revenues are constrained by a declining economic base which reduces taxable resources. Following the equalisation objectives, one tends to argue that those municipalities and cities with greater spending needs automatically require more financial support from central or upper-level government. Yet, the sum of grants to municipalities should ideally be induced from the comparison of their (existing and/or anticipated) 'true' expenditure needs with local fiscal capacity from their own resources such as local tax revenue and fees.[4] To be sure, the expenditure behaviour of municipalities is also, to a great extent, influenced by their present fiscal capacity as well as by the size of local debts. In the provision of infrastructure, local governments tend to (critically) consider an increase in local taxes, especially when intergovernmental grants to municipalities do not adequately compensate the existing fiscal stress that is caused by large expenditure needs, and/or, when the total sum of local debts has already reached the maximum level that should not be exceeded.

4 It is a widely accepted fact that 'needs' are subjective and, therefore, cannot be easily quantified. Nevertheless, a large number of resource transfer methods between different levels of government and of measurement methods of local expenditure needs have been developed in the past and also implemented in many industrialised countries, which range from exclusively political to straightforward statistical ones. Furthermore, there have been serious and ambitious efforts to devise as well as to improve these methodologies, so that the so-called true financial needs of municipalities could be measured in a more effective and systematic way. In particular, the dispute about the relationship between the per capita level of local expenditure needs and the size of the municipality (in terms of population size) has not yet been fully settled (Nam, 2000).

Compared to the case for cities and municipalities in Western Europe, those located in transformation countries have been confronted with more serious problems caused by the speedy industrial restructuring and de-industrialisation, the rapidly increasing public activities due to social, economic, health and environmental ills, as well as by the provision of modern infrastructure that is often better adapted to newly emerging economic activities. In particular, the challenges for large cities in Eastern Europe have been more immediate and have also become more intensified in the course of the ongoing economic and political transition, whereas many small- and medium-sized municipalities have suffered from financial bottlenecks and have not been able to receive sufficient financial support from the central government. Furthermore, the number of self-governing municipalities grew rapidly in the 1990s, and their average size, measured in terms of the number of inhabitants, is quite small. This, in turn, has additionally limited the expansion of the local economic base for generating own revenues and hindered the realisation of economies of scale in collecting municipal tax revenues and providing local public goods and services in these transition countries (Nam and Parsche, 2001).

3. Comparison of Intergovernmental Transfer Systems in Eastern European Transition Countries: An Overview

The intergovernmental transfer system is quite heterogeneous in Eastern European transformation countries. In the Czech Republic, general (i.e. unconditional, equivalence-oriented) grants do not exist, and all transfers from the central government are specific and purpose-oriented. In particular, capital grants (e.g. for hospitals, schools, water supply facilities, libraries, theatres, etc.) are allocated in line with the particular government programmes. On the other hand, important operating grants are provided on the formula-based system, and the basic down-flow transfer sum is defined, for example, per pupil in the pre-school and primary school facilities, per bed in elderly peoples' homes, etc. In 1999 operating grants amounted to 22 billion CZK compared to the total sum of intergovernmental transfers of 33 billion CZK (= ca. 16% of total budgetary revenues): both figures gradually increased between 1994 and 1999 (Table 1).

Table 1 **Classification of recent municipal budgetary revenues according to the individual revenue items**

	Poland	Czech Rep.	Slovakia	Hungary
Absolute amount of total revenues	28 billion PLZ (1994) → 49 billion PLZ (1998) (at 1998 prices)	108 billion CZK (1994) → 210 billion CZK (1999) (at current prices)	20 billion SKK (1994) → 29 billion SKK (1998) → 27 billion SKK (1999) (at current prices)	861 billion HUF (1995) → 1568 billion HUF (2000) (at current prices)
of which				
Revenues from local taxes and fees	35% on average	35% on average	15% on average	30% on average
Revenues from tax sharing	25% on average	7% on average	25% on average	2% in 1995 (24% in 1990)
Non-tax revenues	Marginal	21% on average	35% on average	8% in 1995 (4% in 2000)
Intergovernmental transfers	35% on average	20% on average	15% on average	60% on average
Bank credits & municipal bonds	3% on average (1% in 1994 → 6% in 1998)	17% on average (4% in 1994 → 20% in 1999)	10% on average (5% in 1994 → 12% in 1999)	3% on average

Source: Nam and Parsche (2001), Municipal Finance in Poland, the Slovak Republic, the Czech Republic and Hungary: Institutional Framework and Recent Development, MOCT-MOST Economic Policy in Transitional Economies, 11 (2).

In the Slovak Republic grants are made by the central government and the various state-owned funds (like the State Environmental Fund, the State Fund for Housing Development, etc.). Their absolute and relative significance (the latter measured in terms of the share of total local revenues) experienced ups and downs in the period 1994-99 with a peak of 5 billion SKK (= approximately 17% of the total local revenues) in 1997. Over two thirds of such grants were project-oriented (e.g. for providing public transport systems, construction of housing facilities, etc.) and strongly concentrated on large urban areas. The equalisation-oriented, unconditional transfers have usually been addressed to small municipalities (with less than 3000 inhabitants) that were particularly suffering from fiscal bottlenecks.

The Polish intergovernmental transfer system is quite simple and aims at achieving the traditional goals of relieving the local fiscal constraints, and guaranteeing and enhancing the quality of local goods and services provided by local governments. The additional assignment of maintaining elementary schools in 1996, the massive supports for general educational activities and the promotion of economic development of rural areas contributed to the rapid growth of municipalities' (real) revenues from 'subsidies' of ca. 4 billion (= 15% of the total municipal revenues) to 12 billion (= 24% of the corresponding revenues) PLZ between 1994 and 1998. On the other hand, 'grants' are aimed at financing the specific municipal infrastructure projects that are exclusively defined by the central government: the total sum remained quite stable at around 6 billion PLZ, but their share changed from 21% to 12% of the total revenues in the investigated years.

Hungary currently has a quite complicated intergovernmental transfer system and the most important sources for municipal finance in this country have been grants that comprised around 60% of total budgetary revenues of local governments in the last 6 years. In general, the down-flow transfers made by the central government can be classified into the following different groups: (a) normative grants, (b) purpose-oriented matching grants, (c) deficit grants, and (d) special 'addressed' and 'targeted' subsidies for supporting municipal investment activities, as well as (e) the new grant for equalising fiscal capacity. The most substantial transfers are those normative (partly also equivalence-oriented and formula-based) types that include per capita grants based on the size of population, grants for core public services based on the number of beneficiaries, capacity grants made on the basis of bed number in shelters for homeless people and matching grants for the tourist tax. Their share amounted to ca. 40% of the local budgetary revenues in 1993 but declined to 25% in 1998. Matching grants with the increasing share of ca. 18% (1993) to 22% (1998) were mainly addressed to health care institutions. Deficit grants are aimed at supporting municipalities with high fiscal deficits: in 1997 840 local governments received ca. 6 billion HUF of which the sum increased to 12 billion HUF for 1230 municipalities in 1999. Although the size of such deficit grants appears to be negligible, they tended to discourage revenue-raising efforts of local governments and to reward increasing expenditures at the same time. Investment activities related to water supply, health and social security, and education have been promoted by the addressed and targeted grants of which the total sum is defined annually (e.g. 52 billion HUF for 2000). The targeted subsidies aim at reducing the effective investment costs for promoted projects by a certain percentage share (usually 40% to 50%), while the traditionally addressed types often cover the entire investment costs. The new grants for fiscal equity introduced in 1999 are calculated on the basis of municipal business tax capacities and paid up to a given normative per capita level that varies according to municipal types (e.g. villages, cities, etc.). In 1999 a sum of 38 billion HUF was distributed for this purpose. As a whole, the shift from a general grant system toward a more project-oriented down-flow transfer system was observed in the 1990s (Nam and Parsche, 2001).

4. The Principle of Parallel Development of Fiscal Capacity between State and Municipalities Integrated into the Traditional German Way of Determining Local Grants in Saxony

With regard to the German intergovernmental financial transfer system, the expenditure needs (*Finanzbedarf*) of a municipality are generally calculated on the basis of the so-called major and additional weighting system (*Haupt- und Nebenansätze)*. In the major weighting system (*Hauptansatz*) it has traditionally been assumed that the local expenditure needs per inhabitant increase with the size of municipality measured in terms of number of inhabitants — the so-called Popitz law. Apart from the extra costs caused by a higher density of population in cases where infrastructure and social welfare activities are provided, this rule emphasises the fact that a central place (*zentraler Ort*) or a large city usually provides a wide scope of public services also for the surrounding regions and municipalities. According to this weighting system, the number of inhabitants of a municipality is, therefore, multiplied by a rate (larger than 1) which gradually increases with the population size. For example, in Saxony, the major weight accounts for a municipality with 4000 inhabitants to 112%, with 7500 to 122%, with 12500 to 131%, with 17500 to 138%, with 25000 to 140%, with 40000 to 150% and with 55000 to 160%. In practice, the major weighting system is supplemented by additional systems (*Nebenansätze*). For instance, the varied additional weights classified according to the number of pupils (*Schüleransatz*) increase the major weights by some percentage points in Saxony.[5]

In order to measure the expenditure needs of a municipality, its weighted number of inhabitants (*veredelte Einwohnerzahl*), calculated on the basis of major and additional weighting systems, is multiplied by the amount of basic needs per inhabitant (*Grundbetrag*) which is the same state (*Land*)-wide. This basic sum is fixed annually so that the total amount of local transfers provided by the state government can be fully distributed to the municipalities which are, due to their higher amount of spending needs than the sum of their local tax revenue and other local income (including charges), entitled to the intergovernmental financial allocation. Subsequently, the amount of transfers to a municipality is determined by the differences between calculated expenditure needs and tax capacity of the municipality (Parsche and Steinherr, 1995).

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[5] Central place weights for agglomerations are applied in Rhineland-Palatinate and Saarland, which are mainly characterised by the (economic, cultural and social) spill-over of their functions to surroundings.

The so-called tax capacity measurement index number (*Steuerkraftmeßzahl*) of a municipality consists of individual tax capacity index numbers of local taxes like real property tax (*Grundsteuer*) A and B as well as trade tax (*Gewerbesteuer*), in addition to that of the municipality's share of current income and value added tax revenue. The individual tax capacity index numbers of real property tax and trade tax are calculated when the (municipal-specific) basic tax amount (*Steuergrundzahl*) of each category of such local taxes is multiplied by the state-wide raising weights (*landeseinheitliche Nivellierungshebesätze* in %), which are legally determined in the context of the German intergovernmental resource allocation system (Steinherr and Parsche, 1998).

When a municipality i is financially weak and eligible to receive unconditional transfers from the state (*SZ*), the fiscal capacity of the municipality i (FK_i) for a given year t can be shown in a formal expression

$$\textbf{(1)} \quad \boldsymbol{FK_{i,t} = EG_{i,t} + SZ_{i,t}}$$

where $EG_{i,t}$ consists of real property tax and trade tax revenues as well as the municipality's share of current income and value-added tax revenue at the year t.

As mentioned above, $SZ_{i,t}$ is determined

$$\textbf{(2)} \quad \boldsymbol{SZ_{i,t} = AS \bullet (VE_i \bullet GB - SK_{i,t})}$$

where AS = the equalisation ratio (*Ausgleichsatz*), VE_i = the weighted number of inhabitant of the municipality i, GB = the basic need per capita and $SK_{i,t}$ = tax capacity of the municipality i at the year t. The term ($VE_i \bullet GB$) shows the total sum of local expenditure needs calculated on the basis of major and additional weights.

In practice, the total sum of intergovernmental transfers to municipalities is set in a pragmatic way. Just like the case in the previous year, municipalities continue to receive the same legally-fixed percentage share of total income of the state (*Verbundquote*) for the current year. As a consequence, the total transfer volume to municipalities and the (exclusive and shared) tax revenue and other fiscal income of the state change annually at the same rate. In the emergence of an unanticipated serious fiscal stress (of municipalities and the state) caused by rapid expansion of local tasks and/or abrupt reduction in tax income, the legislators on the state level should react with an adjustment of the local grant percentage share and/or the changes of its calculation base. For example, according to the state law related to the intergovernmental fiscal transfer implemented in 1995, the free state of Saxony has been obliged to provide, for the municipalities, 28% of following state income types (Table 2):

- the state's portion of the shared taxes apportioned between the federal government and the states (*Gemeinschaftsteuer* like personal income, corporate and value added taxes)
- the revenue of state taxes and the participation of federal and state governments in the municipal trade tax (*Gewerbesteuerumlage*)
- the grants from the federal government to the state including the supplementary appropriations out of federal funds to financially weak states (*Bundesergänzungszuweisungen*).

Table 2 Structure of Municipal Fiscal Equalisation System in Saxony in 2001

Provision of local grants from tax-sharing and other down-flow funds from the state and the federal government	Types of intergovernmental transfers from state to municipalities
Revenues from tax-sharing (5907 million DM) from • the state's portion of the shared taxes apportioned between the federal government and the states (*Gemeinschaftsteuer* like personal income, corporate and value added taxes) • the revenue of state taxes and the participation of federal and state governments in the municipal trade tax (*Gewerbesteuerumlage*) • the grants from the federal government to the state including the supplementary appropriations out of federal funds to financially weak states (*Bundesergänzungszuweisungen*). 94,4%	Unconditional transfers (5166 million DM) 82,6%
Other down-flow funds (351 million DM) 5,6%	Specific and other matching transfers (1092 million DM) 17,4%

Source: The Saxon State Ministry of Finance

Moreover Saxon state law was slightly modified in 1996 and additionally adopted the principle of the parallel development of fiscal capacity between the state and municipalities (*Gleichmäßigkeitsgrundsatz*). According to this principle, the total amount of the state grant to municipalities is annually fixed as before but in a far more limited way under the consideration of the parallel development of the municipalities' disposable income from local taxes and the provided intergovernmental transfers (by the state), on the one hand, and the disposable state income from the (exclusive and shared) taxes and the grants from the federal government (to the state) minus the above mentioned grants from the state to municipalities, on the other (Nam, Parsche and Steinherr, 2001).

Assume that the size of the intergovernmental transfers is fixed in the period of 0 (i.e. $t = 0$) at a certain percentage share of the income of the state. And the principle of parallel development of fiscal capacity between the state and municipalities applies for the year 1 and the subsequent fiscal years.

Under this condition

$$\textbf{(3)} \quad \frac{EG_t + SZ_t}{EG_{t-1} + SZ_{t-1}} = \frac{EL_t - SZ_t}{EL_{t-1} - SZ_{t-1}}$$

or

$$\textbf{(4)} \quad \frac{EG_{t,v}}{EG_{t-1,v}} = \frac{EL_{t,v}}{EL_{t-1,v}}$$

where SZ_t = total sum of down-flow grants from the state to municipalities, EG_t = tax income of municipalities and EL_t = tax income of the state and intergovernmental transfers (from other states and the federal government) to the state at the fiscal year t. $EG_{t,v}$ and $EL_{t,v}$ show the disposable income of municipalities and the state after the intergovernmental fiscal transfer carried out at the year t, respectively.

Re-arranging the equation (3)

$$\textbf{(5)} \quad SZ_t = EL_t \cdot \left(\frac{EG_{t-1,v}}{E_{t-1}}\right) - EG_t \cdot \left(\frac{EL_{t-1,v}}{E_{t-1}}\right)$$

where $E_{t-1} = EL_{t-1} + EG_{t-1}$.

Consequently,

$$\textbf{(6)}\quad EL_{t,v} = (EL_{t-1} - SZ_{t-1}) \cdot \left(\frac{EL_t + EG_t}{EL_{t-1} + EG_{t-1}} \right) = EL_{t-1,v} \cdot \left(\frac{E_t}{E_{t-1}} \right)$$

and

$$\textbf{(7)}\quad EG_{t,v} = (EG_{t-1} + SZ_{t-1}) \cdot \left(\frac{EL_t + EG_t}{EL_{t-1} + EG_{t-1}} \right) = EG_{t-1,v} \cdot \left(\frac{E_t}{E_{t-1}} \right).$$

With SZ_t defined in the equation (3), $EL_{t,v}$ and $EG_{t,v}$ change at the same rate ($= E_t / E_{t-1}$) as shown in equation (6) and (7). In other words, the principle of parallel development of fiscal capacity between state and municipalities applies at t.

The equation (6) for the year $t-1$ is

$$\textbf{(8)}\quad EL_{t-1,v} = EL_{t-2,v} \cdot \left(\frac{E_{t-1}}{E_{t-2}} \right).$$

Inserting the equation (8) into (6)

$$\textbf{(9)}\quad EL_{t,v} = EL_{t-2,v} \cdot \left(\frac{E_t}{E_{t-2}} \right) = EL_{0,v} \cdot \left(\frac{E_t}{E_0} \right)$$

and analogously

$$\textbf{(10)}\quad EG_{t,v} = EG_{0,v} \cdot \left(\frac{E_t}{E_0} \right).$$

Rearranging the equation (9) and (10) for the period $t-1$

$$\textbf{(11)}\quad \frac{EL_{t-1,v}}{E_{t-1}} = \frac{EL_{0,v}}{E_0}$$

and

$$\textbf{(12)}\quad \frac{EG_{t-1,v}}{E_{t-1}} = \frac{EG_{0,v}}{E_0} \;.$$

If the equation (11) and (12) are integrated in the equation (5)

$$\textbf{(13)}\quad SZ_t = EL_t \cdot \left(\frac{EG_{0,v}}{E_0}\right) - EG_t \cdot \left(\frac{EL_{0,v}}{E_0}\right) .$$

As shown in the equation (13), the total sum of intergovernmental transfers (from the state to municipalities) at t can be defined on the basis of the share of disposable financial resources of the state and municipalities to the total income of the two different tiers of governments (including the grants) for the year 0.

In the following, the measurement of the intergovernmental transfers in the case of adopting the principle of the parallel development of fiscal capacity between state and municipalities is compared to the case of defining on the basis of annually fixed exogenous ratio (v^*).

For the latter case

$$\textbf{(14)}\quad SZ_t^* = v^* \cdot EL_t \;.$$

Hence,

$$\textbf{(15)}\quad v^* = \frac{SZ_t^*}{EL_t} = \frac{SZ_0}{EL_0} \;.$$

On the other hand, the equation (13) which considers the principle of the parallel development of fiscal capacity changes after the rearrangement

$$\textbf{(16)}\quad SZ_t = \left(\frac{EG_{0,v}}{E_0} - \frac{EG_t}{EL_t} \cdot \frac{EL_{0,v}}{E_0}\right) \cdot EL_t = v_t \cdot EL_t \;.$$

The equation (16) demonstrates clearly that the intergovernmental grant ratio is no longer exogenous but endogenous — partly also as a function of the current income of the state — when the principle of parallel development of fiscal capacity between state and municipalities is applied.

Therefore,

$$\textbf{(17)}\quad v_t - v^* = \left(\frac{EL_t}{EL_0} - \frac{EG_t}{EG_0}\right) \cdot \left(\frac{EG_0}{EL_t}\right) \cdot \left(\frac{EL_{0,v}}{E_0}\right).$$

The term in the first bracket of the equation (17) shows the difference of the tax income growth rate between the state and that of municipalities when compared to the period 0 and t. For EG_0 / EL_t and $EL_{0,v} / E_0$ are always positive, $v_t - v^*$ is positive when the state income (*EL*) grows faster than that of municipalities (*EG*) in the same period of time.

For the next step, it is additionally considered in the model that municipalities can determine their tax income through the change in the municipal-specific raising weight (*Hebesatz*) of the municipal taxes. For simplification, we assume that there is a municipal tax. And this is the only income source for municipalities before they receive grants from the state. On the other hand, tax and other income of the state are assumed to be autonomous.

In this case

$$\textbf{(18)}\quad EG_t = s_t \cdot MB_t$$

where s_t = the (state-)average of the weighted municipal-specific tax rate and MB_t = the (state-wide) basic tax amount of the municipal tax (*Steuergrundzahl*) in the period 0.

When the principle of the parallel development of fiscal capacity between state and municipalities applies

$$\textbf{(19)}\quad SZ_t = EL_t \cdot \left(\frac{EG_{0,v}}{E_0}\right) - (s_t \cdot MB_t) \cdot \left(\frac{EL_{0,v}}{E_0}\right).$$

As a consequence

$$\textbf{(20)}\quad \Delta SZ_t = -MB_t \cdot \left(\frac{EL_{0,v}}{E_0}\right) \cdot \Delta s_t\ .$$

The equation (20) suggests that ceteris paribus the reduction of the weighting rate of the municipal tax at *t* leads to the increase in the intergovernmental transfers from the state for the same year. However, this fact does not provide any incentives to municipalities to reduce the effective local tax rate. The decrease in municipal tax revenue caused by the implementation of such a type of fiscal measure cannot be fully compensated by the anticipated increase in transfers as shown in the equation (20), because

$$\textbf{(21)}\quad \Delta EG_{t,v} = \Delta EG_t + \Delta SZ_t = MB_t \bullet \Delta s_t - MB_t \bullet \left(\frac{EL_{0,v}}{E_0}\right) \bullet \Delta s_t$$

$$= \left(1 - \frac{EL_{0,v}}{E_0}\right) \bullet MB_t \bullet \Delta s_t \quad .$$

5. Conclusion

For the future fiscal decentralisation in Eastern European transition countries a stronger orientation of the subsidiarity principle appears to be desirable to improve the efficiency in the allocation of financial resources between the different tiers of governments and the provision of local utilities of own immediate needs. In this context a critical examination of the scope of unconditional transfers seems to be necessary, since the dominance of a purpose- and project-oriented, down-flow grant system is pronounced in countries like the Czech Republic, Hungary Poland and Slovakia. In particular, the Saxon experience with unconditional transfers from the state to municipalities in the German-specific federal system appears to be a helpful yardstick for the future political discussion aimed at improving the fiscal distribution system in many Eastern European transition economies.

In this new German *Land* the total size of unconditional transfers is fixed annually in a traditional German way but under the particular consideration of the parallel development of the municipalities' disposable income from local taxes and the provided intergovernmental transfers (by the state), on the one hand, and the disposable state income from the (exclusive and shared) taxes and the grants from the federal government (to the state) minus the above mentioned transfers from the state to municipalities, on the other. For the application of such a principle, the selection of the basis year (i.e. $t = 0$) is extremely important, at which the relation of fiscal capacity between the jurisdictions should be fully acceptable for the involved parties. The parallel principle can be ideally adopted, when the satisfactory level of own revenues is annually guaranteed for the grant providers so that a sufficient sum of unconditional transfers can be allocated to the recipients like municipalities. Furthermore, this principle presently considers solely the changes in annual revenues of different tiers of governments in Saxony. For this reason further efforts appear to be urgently made to additionally integrate the expenditure aspects of the jurisdictions involved in the fiscal equalisation system.

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