

Sekula, Alicja

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**Realisation of the Revenue Equalisation Function
in Local Government by a General Grants - the
Polish Case**

Alicja Sekuła

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Alicja Sekuła
Alicja.Sekula@zie.pg.gda.pl
Gdańsk University of Technology, Narutowicza 11/12 Street, 80-233 Gdańsk.

Realisation of the Revenue Equalisation Function in Local Government by a General Grants - the Polish Case

JEL Classification: *H71; H22; H11*

Keywords: *general grants, revenue equalization, own revenues, revenue equalisation function, Poland*

Abstract

Research background: General grants should pursue five different functions. One of them is revenue equalization. This function is achieved if the revenue gap is reduced after the application of the subsidising mechanism. The size of the support should be inversely proportional to own revenues.

Purpose of the article: The aim of the article is to analyse the fulfilment of the revenue equalization function by general subsidies. Beside the theoretical analysis, which presents the general grants structure and the functions assigned to them, the article discusses the results of studies showing changes in the revenue gap after the application of the grant mechanism and the correlation between *per capita* own revenue and the amount of funds from selected parts of the general grant. The following tentative research hypothesis was adopted: general grants fail to fulfil the revenue equalisation function.

Methodology/methods: Two research methods were applied: descriptive statistics and correlation – calculating the Pearson correlation coefficient.

Findings & Value added: It was concluded that, once the corrective and equalising mechanism was applied, the range between the extreme per capita revenue values was reduced by 40–50% on average, at all local government levels, i.e. at commune, county and province levels, in each year from the period analysed, i.e. 2012–2015. The correlation between the sizes of revenue before and after budget subsidising is always negative, whereas the strength of the relationship ranged between low and significant, depending on the local government level. It was found that general grants do fulfil the revenue equalisation function, which contradicts the initially formulated research hypothesis.

Introduction

General grants constitute one of the three obligatory sources of revenue for the Polish local governments. As a source of revenue, general grants have specific features distinguishing them from the aforementioned specific grants and own revenues in the narrow sense (for example, property tax), and making them similar to the shares in the personal and corporate income taxes, statutorily assigned to own revenues. This assignment is criticised because these revenues do not have the features of “typical” own revenues (in the strict sense) like the aforementioned property tax, vehicle tax or agricultural tax. Moreover, such a classification makes it more difficult to make statistical comparisons between concerning the types of revenues of local government units or the structure of their revenues.

Comparing the shares of the individual revenues in local government budgets, general grants may be described as the principal revenue. The amounts of general grants supplying the budgets often correspond to ca. 50% of expenditures. The importance of revenues expressed by their share in expenditures became the basis for investigation aimed at finding whether the structure of the subsidising mechanism in Poland is correct, i.e. whether it ensures the fulfilment of one of the functions of general grants – revenue equalisation. In other words, the purpose of the article is to investigate whether general grants fulfil the revenue equalisation function in the Polish local government system. The analysis is based on data for 2012–2015. It was carried out separately for the individual local government tiers. i.e. communes, counties and provinces. To accomplish the aim and verify the research hypothesis stating that general grants fail to fulfil the revenue equalisation function, the author used the descriptive statistics and correlation methods by the determination of the Pearson correlation coefficient.

The characteristics of general grants and their specific features in the Polish system of local government finances

The term *general subsidy* is specific to the Polish legislation. In foreign publications this type of revenue is seldom referred to as a subsidy. It is far more commonly termed *general grant* (Lotz, 2005, p. 59), as opposed to *specific grant* (Sekuła, 2009, pp. 756–757), since the “generality”, or the absence of strict guidelines as to the purpose of expenditure – allocation for financing local governments' functions as a whole, is one of the distinguishing features of general grant. General grants are characterised by centralisation in the revenue sphere and decentralisation in the expenditure sphere, which means that local governments have freedom of choice as to their disposal (Sekuła, 2015, p. 919).

In the literature, general grants are sometimes referred to as *general-purpose transfers* (Shah, 2016, p. 56) to emphasise that they are not earmarked for a specific purpose. The fact that the grant provider does not indicate the directions of spending the grant is also reflected in the expression *non-earmarked grants* (Bröthaler & Getzner, 2011, p. 140). This feature of grants of this type is also highlighted by the term *general purpose grant* (Starkie, 1984, p. 27). To receive general grants, it is not necessary to provide consideration or co-finance a particular service by a local government unit, therefore, they are sometimes termed *general type non-matching grants* (Oulasvirta, 1997, p. 397). To emphasise the absence of conditions imposed by the donor, the term *unconditional grants* (Islam & Choudhury, 1990, p. 676) is sometimes used.

Table 1. Components of general grants

local government level	equalisation	balancing/ regional	reserve	compensating	educational (including the respective reserve)
communes	V	V/-	V	V	V
counties	V	V/-	V	-	V
provinces	V	-/V	V	-	V

included in further studies

Source: Author's elaboration

In Poland the overall amount of general grants is the sum of three (Table 1), or in the case of communes (optionally) four amounts (plus funds from reserve division) of unequal sizes that make up the total. General grants consist of three components: equalisation, balancing (regional in provinces) and educational. A reserve is also created, both for the general grant and with respect to the educational component, whereas communes may also receive funds in the form of compensating grants. The largest part, in some cases accounting for up to 90% of general grant revenues, is the educational part. It is not provided for specific educational tasks, but on account of performing these tasks. The origin of this source of revenue, the method of its calculation or nomenclature indicate a strong relationship to the tasks related to education, hence the educational component revenues were not considered in the analysis of the function of general grants.

The state budget does not have to be the only source supplying all the components of general grants. In most countries, including Poland, the mechanism defining the revenues from general grants is shaped by the application of two basic forms of division of public funds:

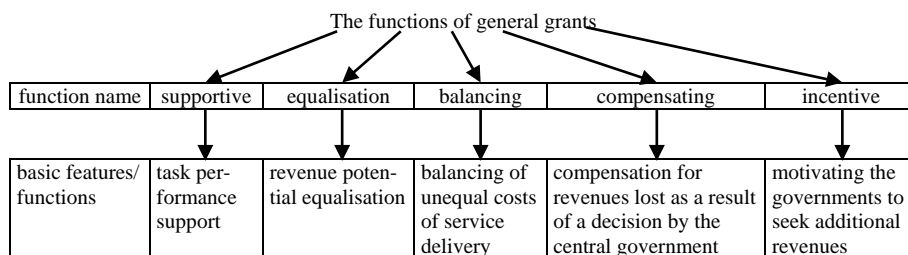
- vertical, where revenues are supplemented by funds from the state budget; in the case of Poland it applies to all the components apart from the balancing/regional component,
- horizontal, where revenues are supplemented with funds acquired from the local government units of the same level whose revenues are considered high; they make up the component called balancing in the case of communes and counties and regional – in the case of provinces.

Most countries, not only European apply the vertical and horizontal mechanisms of revenue redistribution simultaneously (Swianiewicz, 2016, p. 26–55; Eccleston & Woolley, 2015, pp. 216–243).

The functions of general grants

Nowadays transfers serve various purposes, so any differences in individual systems apply to the construction of the redistribution system and the presence of the horizontal revenue division, beside the vertical division. It is assumed that the subsidising mechanism should fulfil the following functions: supportive, equalising, balancing, compensating and incentive (Figure 1).

Figure 1. Description of the functions of general grants



Source: own elaboration

The first component is intended to support the performance of tasks. The grants that serve the supportive function should be determined in accordance with the scope of duties performed by local government units at a particular level. The educational component of general subsidies is often presented as an example of practical application of the supportive function. Its size depends on the size of so-called education voucher, calculated according to a complicated procedure, including, inter alia, the scope of educational tasks performed. However, the education expenditures and revenues are not as rigidly connected as in the case of specific grants.

Another function – equalisation – refers to the evaluation of the revenue potential of a local government unit and its comparison with the mean, median or maximum value at a particular local government tier. On this basis the amount of compensation is calculated, which should be inversely proportional to the capacity to earn own revenues, characterised by uneven spatial distribution and efficiency. This function is the focus of further analysis.

The next function – balancing – is determined by the costs of task fulfilment. This function is realised by taking into account the unequal unit costs of service provision arising from objective causes rather than e.g. poor management. It must be emphasised that there are distinct differences between the support and balancing functions. While the funds of the former type are provided for task fulfilment (for example the educational component of grants awarded on account of the performance of educational tasks), the funds of the latter type are provided to compensate for unequal costs of service delivery, where the differences arise from objective reasons.

The next function – compensating – is performed only at the commune level in the case of Poland. It involves adding specific computational elements to the algorithm to include amounts replacing the eliminated or centrally restricted sources of own revenues. It could be said that such grants play a substitute role for own revenues of local government units that were taken from them or reduced under applicable regulation.

The last of the aforementioned functions – incentive – involves the construction of a general transfer system ensuring that the compensation is provided up to a certain level. On the one hand, the funds transferred in the form of general grant should sufficiently supplement other revenues to guarantee services at a desired level, and on the other – motivate local governments to seek additional revenues from different sources, without discouraging them from making these efforts.

Research Methodology

Verification of the research hypothesis formulated in the introduction and achievement of the aim of the study required appropriate research methods. The method of descriptive statistics was employed in the first stage of the investigation, where the revenue ranges were compared. It was the initial and fundamental step in the analysis of the data collected. The descriptive statistics method used here was a tabular description with a summary of calculation results.

Then, the Pearson correlation coefficient was used in the subsequent analysis. It is used to determine the level of linear relationship between random variables. The coefficient r has a value in the range $[-1; 1]$. The

linear statistical relationship between random variables can vary in strength –the higher the absolute value, the stronger the relationship. For the purpose of this study, the following interpretation of correlation coefficient was adopted (Peternek & Košny, 2011, p. 343):

- ☐ < 0.2 – virtually no linear relationship between the traits investigated,
- ☐ 0.2–0.4 – visible but weak linear relationship,
- ☐ 0.4–0.7 – moderate;
- ☐ 0.7–0.9 – significant;
- ☐ > 0.9 – very strong relationship.

The minus sign before the coefficient denotes a negative direction, i.e. the increase (decrease) of the value of one variable causes, respectively, a decrease (increase) of the value of the other variable; in other words, the variables are inversely proportional. The plus sign denotes a directly proportional relationship.

Analysis of revenue range changes after the application of the subsidising mechanism

In order to analyse the revenue range changes before and after the application of the subsidising mechanism, certain assumptions had to be made. First of all, the educational grant revenues were eliminated from the calculations, since it was considered to perform only the supportive function. A detailed analysis of calculation mechanisms for the remaining components of general grants leads to the conclusion that they largely perform the function of revenue equalisation. The revenues that take into consideration the cost criteria in the overall amount of general grants are small; moreover, they are not recognised separately in public statistics. Thus further calculations include the size of general grants minus the educational component, as indicated in Table 1.

Table 2. Per capita own revenue range at the individual local government tiers in 2012–2015

year	2012	2013	2014	2015
communes*	1:140	1:115	1:100	1:99
counties	1:5	1:5	1:5	1:4.3
provinces	1:4.3	1:3.2	1:3.5	1:2.9

* including cities with county rights

Source: own calculations based on Local Data Bank and Ministry of Finance.

Table 3. Per capita revenue range (less the “Robin Hood charge” payments) at the individual local government tiers in 2012–2015, after supplying the budgets with grants

year	2012	2013	2014	2015
communes*	1:86	1:61	1:65	1:51
counties	1:2.6	1:2.8	1:3.6	1:2.7
provinces	1:2.1	1:1.8	1:1.6	1:1.7

* including cities with county rights

Source: own calculations based on Local Data Bank and Ministry of Finance.

The range of per capita revenues between the units with the lowest and the highest revenues is presented in Tables 2 and 3. Table 2 refers to own revenues, whereas Table 3 is based on own revenues supplemented with funds from the corrective and equalising mechanism. The values were reduced by the amounts paid as part of horizontal redistribution.

The data presented in Tables 2 and 3 show that in the period analysed the range of revenues decreased after the application of the subsidising mechanism. Before its implementation, the disparity was most striking among communes (also including cities with county rights) – 1:140 in 2012, later decreasing to 1:100. The inequality was lower in the case of counties and provinces: the range before supplying the budgets with general grants was from 1:3 to 1:5. These differences are due to the nature of own revenue sources assigned to each tier. Counties and provinces do not have own revenues apart from the shares in the personal and corporate income taxes; their revenues are strongly centralised and dependent on the state budget. Commune authorities have far more freedom in this respect, which is reflected in a greater range of per capita revenues.

Table 4. Coefficient of correlation between per capita own revenue and per capita general grants (excluding the educational component)

year	2012	2013	2014	2015
communes*	-0.324	-0.381	-0.398	-0.404
counties	-0.439	-0.334	-0.257	-0.372
provinces	-0.702	-0.684	-0.624	-0.784

* including cities with county rights

Source: own calculations

Application of the subsidising mechanism flattens the inequalities in revenue sizes. This is visible at all levels in all the years analysed. Therefore, it can be concluded that the initial hypothesis of the failure of general grants to fulfil the revenue equalisation function was not confirmed. Once the corrective and equalising mechanism is applied, the range between the extreme revenues falls by ca. 40–50% (Table 3).

The relationship between the size of revenues and amount of grants (per capita) is presented in Table 4. The table contains the Pearson correlation coefficient values. The minus sign denotes an inversely proportional relationship: the higher the unit's own revenues (per capita), the lower the equalisation by means of grants. Statistically, these grants supply poorer units with greater amounts, which leads to the conclusion that they do fulfil the revenue equalisation function and, consequently, that the initial research hypothesis has been disproved.

As for the strength of the relationship, it is the highest in provinces, where r is close to -0.8 , so according to the criteria adopted in the methodology section, the relationship can be described as significant. In the remaining cases – communes and counties – the relationship is visible but weak, taking the values in the range $0.2 \div 0.4$; in individual cases – in counties in 2012 and in communes in 2015 it exceeded 0.4 , thus reaching the moderate level.

Conclusions

The analyses conducted disproved the initial hypothesis that general grants fail to perform this function, so the function in question is in fact fulfilled. The strength of the relationship between own revenues and the amount of general grants indicates that statistically greater resources are transferred to units with lower per capita revenues, which is considered appropriate and desirable.

Due to the fact that the calculations apply to the populations of communes, counties and provinces, their results failed to demonstrate certain defects of the subsidisation system connected with the revenue function, existing at all tiers with respect to selected units. The most serious defects include: excessive restrictiveness of the system of payments for the balancing/regional component and the reversal of the revenue status, i.e. a situation where after the application of the corrective and equalisation mechanism the beneficiary unit earns a higher revenue than the payer unit. These dysfunctions, extending beyond the subject matter of this article, are discussed in detail in other publications.

References

Bröthaler, J., & Getzner, M. (2011). Fiscal autonomy and total government expenditure: An Austrian case-study. *International Advances in Economic Research*, vol. 17, no. 2, DOI: 10.1007/s11294-011-9301-8.

- Eccleston, R., & Woolley, T. (2015). From Calgary to Canberra: resource taxation and fiscal federalism in Canada and Australia. *Publius - The Journal of Federalism*, vol. 45, iss. 2. DOI: 10.1093/publius/pju039
- Islam, M., & Choudhury, S. (1990). Testing the exogeneity of grants to local governments. *The Canadian Journal of Economics*, vol. 23, no. 3. DOI: 10.2307/135654.
- Lotz, J. (2006). Accountability and control in the financing of local government in Denmark. *OECD Journal on Budgeting*, vol. 5, no. 2. DOI: <http://dx.doi.org/10.1787/budget-v5-art11-en>.
- Oulasvirta, L. (1997). Real and perceived effects of changing the grant system from specific to general grants. *Public Choice*, vol. 91, no. 3/4. DOI: 10.1023/A:1004987824891.
- Peternek, P., & Kośny, M. (2011). Kilka uwag o testowaniu istotności współczynnika korelacji (Comments concerning correlation coefficient significance testing.) *Zeszyty Naukowe no. 20*. Wrocław: WSB University.
- Sekula, A. (2009). System of specific grants for local government units in Poland. In M. Bucek, R. Capello, O. Hudec & P. Nijkamp (Eds.). *3rd Central European Conference in Regional Science*. Kosice: Technical University. DOI: 10.13140/2.1.1557.5842.
- Sekula, A. (2015). General grants and development – a relationship without a future? The effects of the structure of general grants on the development of local government units in Poland. *Lex Localis – Journal of Local Self-Government*, vol. 13, no. 4. DOI: 10.4335/13.3.915-932(2015).
- Shah, A. (2016). Fiscal policies for coordinated urban-rural development and their relevance for China. *Public Finance & Management*, vol. 16, no. 1.
- Starkie, D. (1984). The specific effect of specific road grants in South Australia. *Australian Economic Papers*, vol. 23, no. 42. DOI: 10.1111/j.1467-8454.1984.tb00071.x.
- Swianiewicz, P. (2016). Horizontal equalization of local government finance - European experience. *Studia Regionalne i Lokalne*, 63(1). DOI: 10.7366/1509499516302.