Regional Equalization: Do Any Incentives for Regional Development Still Exist?

by

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Abstract

The study aims to assess how the currently applied methodology for allocating equalization transfers to Russian regions has retained incentives for their economic development. To answer this question, the term "incentive" is defined more precisely, and an indicator is suggested whereby it becomes possible not only to identify the presence or absence of regional economic development incentives, but also to perform their quantitative assessment. That indicator is the degree of compensation for the increased amount of tax and non-tax revenues by a reduction in the amount of equalization grants. It demonstrates how the amount of equalization transfers would change if the tax capacity of each region would have been different. The hypothesis that there still exists a sufficient amount of incentives, while at a first glance contradicting the popular belief about their absence, relies on the review of a broad spectrum of components and specific features of the currently applied methodology for distributing equalization transfers between RF subjects, which contribute to the preservation of such incentives. That hypothesis is confirmed by the study results. In particular, the calculated effects of changes in regions' tax capacities on the amount of equalization transfer received by them over the period 2006-2015 demonstrate that for the majority of regions, less than half of their revenue loss was compensated, which means that there exist significant incentives for the regions to develop their economies and the revenue base of their budgets. This stimulating effect varied depending on whether the initial fiscal capacity of each region prior to the allocation of equalization transfers was below or above 0.6: in the latter case, it was significantly higher. The study also analyses the supplementary factors that are associated with the negative net financial effect of increased revenue capacity on regional budget.

Keywords: equalization transfers, fiscal capacity, tax capacity, incentives for regional development

JEL: R1, R11, R12, R13

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Introduction

In federal states, the allocation of interbudgetary transfers usually pursues the following goals [Shah, 2007, P. 58–61]:

1) to secure a vertically balanced budgetary system;

2) to ensure fiscal equalization;

3) to achieve the goals and priorities set by a higher tier of authority.

Equalization transfers, which frequently take up a significant share in the total volume of financial aid rendered to the lower-tier budgets, are more likely to produce the materialization of the first two goals. At the same time, depending on the specific ways of their implementation in each particular situation, they may also create various positive (relevant to the priorities set by the central government) or negative incentives for the lower-tier authorities. The negative incentives arising as a result of equalization transfers are usually as follows [Nazarov, 2013]:

1. *The efforts of subnational authorities to raise the rates of taxes that lie within the sphere of their competence,* the upshot being a negative impact on the rate of economic growth in a given territory, which in its turn may translate into an even higher inequality between the rich and the poor regions in the levels of both their economic development and their budget revenue.

2. *The emergence of 'poverty traps',* when growth of their own budget revenue triggered by the expansion of their revenue base is fully offset (or even exceeded by more than 100%) by the shrinking volume of equalization transfers, which in its turn reduces, for the poorest regions, the incentives to implement measures designed to boost their economic development. This may also result in increasing inequality.

3. *The regions may attempt to preserve their inefficient infrastructure - or, on the contrary, altogether avoid any infrastructure development.* If some selective factors associated with the presence or absence of infrastructure are taken in consideration when the regions' spending needs are being determined for the purpose of non-targeted equalization transfer allocation, this may produce incentives both to maintain the redundant or inefficient infrastructure entities and to artificially suppress the infrastructure development process. The former happens when the estimated amount of spending obligations includes the upkeep costs of

the existing infrastructure, and the latter — when the necessity of its development is taken into consideration.

4. *The desire to increase budget deficit and government debt,* which arises in response to the necessity to compensate for deficit in the lower-tier budgets. Such practices may translate into the implementation, by regions, of softer budgeting policies, and later on — into an uncontrollable growth of budget deficit and government debt.

As far as the Russian Federation is concerned, the former is not so grave an issue here: regional and local authorities are not allowed to set their tax rates above the ceiling established by federal legislation. Among the infrastructure parameters, the methodology employed in allocating the transfers designed to equalize the fiscal capacity of RF subjects (hereinafter – equalization transfers) relies only on that of density of transportation networks operable all year round, it being the parameter that influences the amount of mandatory spending only in the Far North territories. Russia's budget equalization formula does not include the parameters of regional budget deficit and government debt.

Among the issues listed above, the only serious one faced by the equalization transfer allocation system in the RF is that of negative economic development incentives that it may create for the regions.

For many years, disputes have been going on in the RF as to whether the existing equalization transfer allocation system is truly capable of maintaining economic development incentives for the regions. Some experts have criticized the equalization transfer allocation formula precisely because it gives no consideration to development incentives. Such complaints have been voiced by representatives of the regions, the RF Accounts Chamber[1], the State Duma, and the academic community [Kuznetsova, 2008, p. 31; Sugarova, 2015; Asadullina, 2015]. By way of solving that problem, in the study conducted by Kravchenko and Urman (2015), it is suggested that a stimulatory or compensatory component should be incorporated in the federal equalization transfer allocation methodology, to be distributed between those regions that demonstrate an accelerated growth rate of their revenue capacity.

Other experts, who rely on their studies of international [Nazarov, 2013] or Russian [Vasiliev, 2009] equalization transfer allocation experiences, suggest exactly the opposite — that it is necessary either to remove the stimulatory component from the equalization methodology,

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[1]   See:
http://www.vedomosti.ru/politics/news/2012/03/28/schetnaya_palata_predlagaet_podelit_porovnu_nalogovye_doho dy.

or to significantly strengthen its equalization element [Shatyrko, 2014]. The necessity to strengthen the equalization element of interbudgetary transfers was also mentioned in the Budgeting Policy Guidelines for 2015 and the Planning Period 2016-2017[2].

At the same time, in the majority of studies, the conclusions concerning the presence or absence, in the equalization transfer allocation formula, of economic development incentives for the regions, are in the main only descriptive, and they offer neither the definition of such an incentive, nor its quantitative estimates.

The issue of the presence or absence of incentives is especially important now, when the revenues and expenditures of regions in real terms have hit their record low since 1992, plunging below 12% of GDP (Fig. 1), while the government has so far failed to come forth with any recipes for propelling the economy into a growth trajectory.

| = Revenue | = Expenditure |
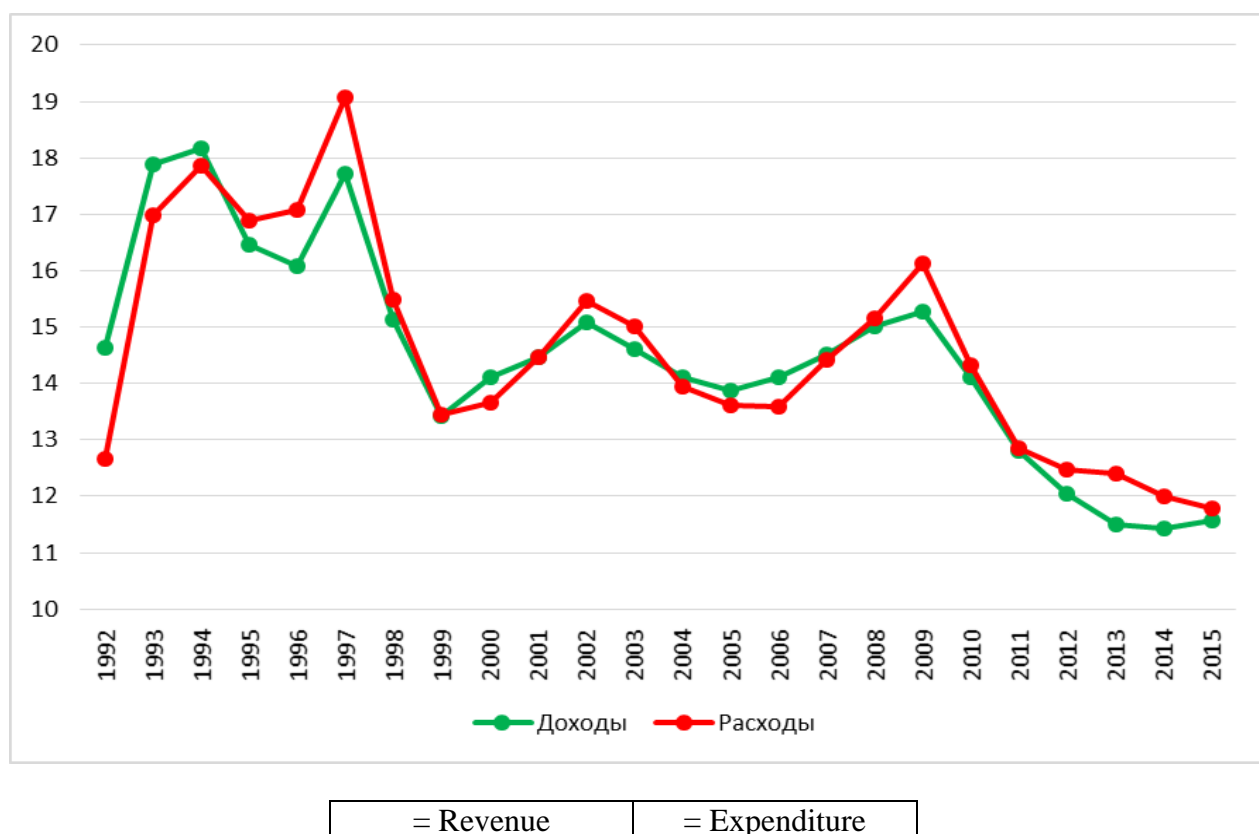
Source: own calculations based on data released by the RF Federal Treasury and Rosstat.
Fig. *1.* **The Movement of Revenue and Expenditure in the Regions' Consolidated Budgets (% of GDP)**

The purpose of our study is to provide an answer to the question of whether the equalization transfer allocation procedure indeed incorporates any incentives for the regions to

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[2]   Budgeting policy guidelines for 2015 and the planning period 2016 and 2017. http://minfin.ru/ru/budget/policy/ (publication date: 10.07.2014).

develop their economies and budget revenue bases, and if it does, how strong those incentives were over the period 2006–2015. The questions as to what such incentives should be like, and if they must indeed be incorporated into the equalization formula, are left outside of the framework of this study.

1. Analysis of the Equalization Transfer Allocation Formula

We will attempt to answer this question on the basis of our analysis of the currently applied formula, as well as on the results were achieved through the allocation of equalization transfers. However, we are going to start with a definition of what we actually understand as the presence or absence of economic development incentives. Without pretending that this definition is a universal one, we shall assume that these incentives are determined by the degree to which the revenue growth in the consolidated budget of a region, in the part by which it moves ahead of the budget revenue growth in the consolidated budgets of all subjects of the Russian Federation, is offset by the reduced amount of an equalization transfer received by it over a given (sufficiently lengthy) period.

In the equalization transfer allocation methodology, the total volume of these transfers is determined on the basis of the necessity, for a given region, to achieve its estimated minimum fiscal capacity, which is defined as the average between the estimated fiscal capacity (prior to the allocation of equalization transfers) of the regions that do not belong to the top ten regions with the highest fiscal capacity levels, and the bottom ten RF subjects with the lowest fiscal capacity levels[3].

A region's fiscal capacity is the ratio of its tax capacity index (TCI) to its budget expenditure index (BEI). The TCI determines how many times the per capita tax revenue in the consolidated budget of a given region is higher than the corresponding average index, while the BEI determines the ratio of the amount of mandatory spending in the consolidated budget of a given RF subject to the corresponding average for all regions.

The formula applied for determining the amount of equalization transfers envisages a two-phase procedure of proportional equalization of the fiscal capacity of a RF subject, the approval of a partial allocation of the transfer over the period of 3 years, and (from 2016

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[3]   Resolution of the RF Government No 670, dated 2 November 2004, 'On the allocation of transfers earmarked for budget sufficiency equalization of subjects of the Russian Federation'.

onwards) the compensation, in part, for the reduction in the amount of transfer by comparison with a current financial year.

Let us take a closer look at the components of the equalization transfer allocation methodology currently applied in the RF, each of which is designed to make the bodies of state authority of RF subjects more interested in developing their regional economies and revenue bases.

1.   *The relatively low volume of equalization transfers.*

Over the period 2012-2016, the total share of equalization transfers in the regions' consolidated budget revenue did not exceed 5.3% (Fig. 2).
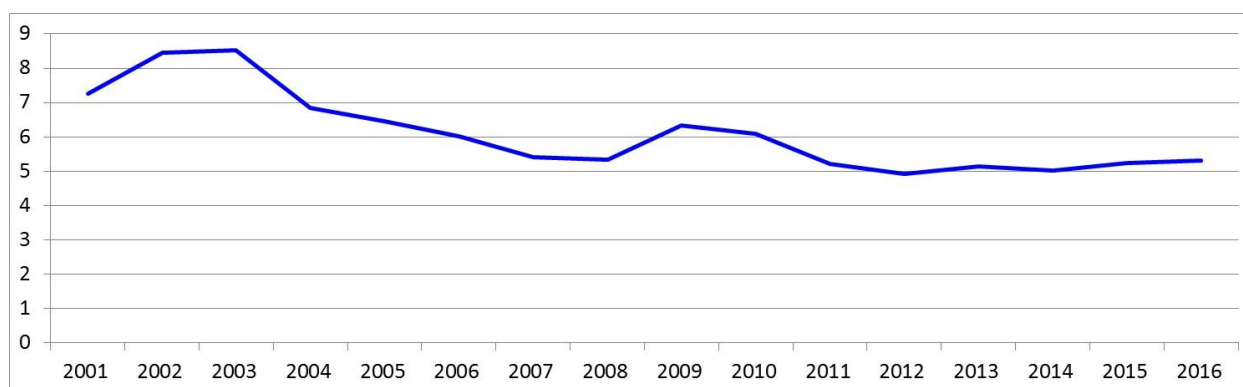
Source: own calculations based on data released by the RF Ministry of Finance and the RF Federal Treasury.

Fig. 2. **The Share of Equalization Transfers in the Revenues the Regions' Consolidated Budgets (%)**

Given the highly varying fiscal capacities of Russia's regions, the equalization transfers, when allocated in this amount, cannot significantly reduce this differentiation. Thus, according to the estimated targets for 2016r, the amount of funding necessary for achieving the estimated average fiscal capacity level in all the regions would be approximately 3 times higher than the actual volume of allocations earmarked for the equalization goals. So, the regions receiving the equalization transfers still vary very significantly by their fiscal capacity levels.

However, if the fiscal capacities of all the regions were to be brought up to the same level (that of the wealthiest RF subject), the amount of funding needed in 2016 for achieving that goal would have been 25 times higher than that actually stipulated in the law on federal budget.

2. *There is no goal of achieving a uniform fiscal capacity target in all the regions.*

As explained earlier, the existing equalization transfer allocation procedure does not aim at achieving the same minimum fiscal capacity index in all the regions (this principle is applied when determining the total volume of equalization transfers, but not during the phase of their actual allocation). It only aims at reducing the degree of differentiation, which nevertheless, still

remains after the equalization. Thus, the estimated targets for 2016 demonstrate that the ratio of the estimated fiscal capacity of the richest region to that of the poorest one after the equalization shrank from 14.7 times to 4.4 times. Meanwhile, the level of fiscal capacity of the five poorest regions after the allocation of equalization transfers was found to be 1.5 times below the average. It should be noted that we speak here not of the differentiation of the per-capita revenue indices of the consolidated budgets of RF subjects (prior to the allocation of equalization transfers, the differentiation is 29-fold), but of the different per capita capacity of the regions to provide mandatory state and municipal services, with due regard for the objective factors that may influencing the volume and cost of such services.

Thus, the differentiation of Russia's regions by their fiscal capacity levels remains comparatively high even after the allocation of equalization transfers. What is the upshot of such a situation? And what would be the financial consequences, for the regions, of their growing revenue capacity? Consider a hypothetical situation where the growth of a region's tax revenues over the course of a given financial year would result in the reduction of the amount of equalization transfer allocated in the same year. It should be noted that this never happens in actual practice, because the information on revenues generated over a current financial year can influence only the amount of transfers allocated in the next and the subsequent financial years. Besides, the equalization transfer allocation formula incorporates a lot of other mechanisms designed to prevent the shrinkage of their volume, which will be discussed later. Thus, the overall effect of the increased tax revenues in a region's budget in a given financial year would spread over the next several years. Besides, it will vary depending on the specific types of revenues that have increased. Nevertheless, an analysis of the situation where an increase in the estimated tax capacity is offset by a reduced amount of the equalization transfer in the course of one financial year is interesting, as it offers a better understanding of how the amount of an equalization transfer is going to change if that region had had a different tax capacity, and what role in those changes would be played specifically by the twofold proportional increase of the regions' fiscal capacity designed to enable them to meet the equalization criteria.

In order to calculate the percent share of tax revenue growth to be compensated by the reduction in the amount of an equalization transfer, we have formulated some general preconditions and comments.

1) We are looking at the ratio of an estimated change in the amount of an equalization transfer to the change in the total tax capacity of a RF subject over the course of one financial year. All the other parameters incorporated in the equalization transfer allocation methodology, as well as the revenue capacity

parameters of the other RF subjects, have remained unchanged. The calculations are based on the data used for estimating the amount of equalization transfers for 2016. The amount of transfers that have already been allocated and the compensation of the estimated reduction in the amount of transfers relative to the previous financial year (as envisaged in the existing methodology) are not taken into consideration.

2) With regard to the real situation where, as has already been specified, the replacement effect spreads over the course of several years, it should be remembered that we discuss the compensation not for any budget revenue growth, but only for the growth of that part of budget revenue that is responsible for the rise in the rate of budget revenue growth in a given RF subject over the corresponding average for all the regions. In other words, if the rates of growth of tax-generated revenues in all the regions should be the same, the corresponding excess growth — all other conditions being equal — would not be offset by the reduced amount of equalization transfers.

Our calculations have demonstrated that the degree of compensation depends on the ratio of a region's estimated initial fiscal capacity to the equalization criteria:

1) for those regions where the fiscal capacity level prior to the allocation of equalization transfers was below the first equalization criterion (0.6), the estimated reduction in the amount of the equalization transfer would be approximately 87% of their total tax capacity growth;

2) for those regions where the fiscal capacity level prior to the allocation of equalization transfers was above the first equalization criterion (0.6) but below the second equalization criterion (1.0), the estimated reduction in the amount of the equalization transfer would be approximately 21% of their total tax capacity growth.

Thus, the existence of a scheme that envisages a twofold proportional increase is generally beneficial for all the regions, because the additional growth in the amount of tax-generated revenues is not fully offset by the reduced amount of the equalization transfer. And for the regions that receive only the second part of the equalization transfer, the estimated reduction in the amount of transfer would be equivalent to just one-fifth of their total revenue growth. In 2016, there were 39 such regions, and bearing in mind the fact that in 2016 there were 14 donor regions that did not receive any equalization transfers, it may be concluded that for the majority of Russian regions (53) the equalization formula *per se* has had no de-stimulating effects.

As for the regions whose fiscal capacity is below 0.6 (their number is 32), these, firstly, still possess some incentives to develop their economies, because the increased tax revenues are not fully offset by the reduction in the amount of the equalization transfers that they receive, and secondly, there exist some obvious incentives for those of them with fiscal capacity close to 0.6 to jump above that value. Thus, according to the estimates for 2016, nine among these regions had fiscal capacity higher than 0.55.

3. The revenues of the consolidated budgets of the Russian Federation's subjects are not recorded in full. The estimated tax capacity index is based only on data for the tax on the profit of organizations, personal income tax (PIT), the tax on the property of organizations, excises, the mineral resources extraction tax (MRET), and some other taxes and levies.

In this connection, the non-tax revenues in the regional and local budgets, which in 2015 amounted to 7.5% of their total revenue volume, are not taken into account during the allocation of the equalization transfers.

As far as tax revenues are concerned, the amount of some of these is estimated indirectly for the purpose of tax capacity assessment — that is, without using in the calculations the indices that directly influence the amount of tax liabilities or the tax base for each relevant tax. Among these taxes, there are the transport tax, the single agricultural tax, the government duty, local taxes, and (from 2015) the single tax on presumptive income for some types of business activity and the tax levied in the framework of the simplified taxation system. The tax capacity relative to these taxes is calculated in proportion to the tax capacity index derived from the sum of the following three taxes: profits tax, PIT and the tax on property of organizations, and from 2016 onwards – also in proportion to the total number of economically active population.

As a result, just as it happens in the case of non-tax revenues, growth of a region's revenue base relative to these taxes has no influence on its estimated tax capacity or on the size of equalization transfers — neither in the current year, nor in the next years. As seen by the year-end result of 2015, the share of these taxes amounted to 8% of the total revenues of the regions' consolidated budgets (9.7% of their tax and non-tax revenues). On the whole, the share of those tax and non-tax revenues, whose movement or increasing tax base would have no influence on the size of the equalization transfer allocated to a given region, amounts to 18.9% of the total volume of tax and non-tax revenues in the regions' consolidated budgets. Besides, it should be noted that in the main, these are the revenues that can be rather strongly influenced by regional and local authorities, which can create favorable conditions for the development of certain types of businesses and ensure that the available state and municipal property is used efficiently.

4. Delayed information on the tax capacity indices. The relevant tax base or tax charge data needed for calculating the tax capacity of a region are taken for two financial years and as of the latest reporting date of the current financial year. The share of a given subject of the Russian Federation in the total value of that index is determined as an average weighted value for that period, with W = (0.30, 0.35, 0.35). With this approach, a dramatic surge of revenue (as well as a surge of tax base and tax charges) in one of the regions during a current financial year will have

no effect on the amount of the equalization transfer allocated to that region in the same year — the effect will become visible only in the next financial year. Thus, there will be a one-year lag between the change in a region's economic situation and the size of the equalization transfer allocated to it.

Moreover, as the tax capacity of a federal subject is assessed not for one financial year, but for three financial years, the corresponding economic growth will be reflected only in part by the amounts of the equalization transfer to be allocated to that subject both in the next financial year and in the first year of the planning period (with a reduction factor of 0.30 and 0.65 respectively). And it is only in the amount of equalization transfer to be allocated in the second year of the planning period, which will be calculated during the first year of the planning period, that the increase in the amount of tax revenues achieved over the current financial year will be taken into account in full. It should added that the increased tax capacity will be taken into account only with regard to the taxes whose impact on the tax capacity of a federal subject can be calculated directly, and not on the basis of indexes of other taxes.

5. The limit on the tax capacity growth rate estimated for the tax on profit of organizations and PIT relative to the national average. In accordance with the tax capacity calculation methodology, if the growth rates of the charged tax on profit of organizations and the amount of charged PIT adjusted for the total number of persons employed in the defense and state security sector are above the corresponding national average, the calculations should be based not on the actual values of these indices, but on their corresponding previous year's values, multiplied by the average national growth rate of that index. In the case of fast growing regions, this will result in overrated amounts of the equalization transfers due to their underrated tax capacity.

6. Approval of the equalization transfers to the regions to be allocated over a three-year period. In accordance with the RF Budget Code, the size of transfers to the regions should be calculated for the next financial year and the planning period. The equalization transfers for the next financial year, the first and second years of the planning period are to amount to 100%, 85%, and 80% respectively of the total approved amount of the equalization transfers. During the preparation of a draft federal budget for the next three-year period, the size of the already approved equalization transfer to be allocated to one or other region should not be decreased. Thus, for this reason, the size of the equalization transfers to be allocated to the Republic of Sakha (Yakutia) and Kamchatka Krai, as established by the law on the federal budget for 2016,

exceeded by RUB 2.5bn and 5.0bn respectively their volumes that should have been allocated during that year in accordance with the existing calculation methodology.

The approved size of equalization transfers is not decreased even if the calculations demonstrate that a given subject of the Russian Federation ceases to be a region entitled to financial assistance. Thus, in 2014, Belgorod, Kaluga and Sverdlovsk oblasts received equalization transfers despite the fact that their calculated fiscal capacity levels for that year exceeded 1, thus nominally excluding them from the ranks of recipients of such transfers.

7. Partial compensation for a decline in the volume of equalization transfers relative to the previous financial year.

In 2016, the methodology for the allocation of equalization transfers was augmented by a new provision, which stipulates that, in the event when in the current financial year the share of equalization transfers (excepting grants) in the consolidated budget of a subject of the Russian Federation amounts to no less than 10%, the total volume of transfers to be allocated to that subject in the next financial year should amount to 90% of the volume of transfer approved for the current financial year. It was thanks to this innovation that in 2016, the Republic of Mordovia, the Republic of Crimea, and the Jewish Autonomous Oblast received an additional volume of equalization transfers in the amount of RUB 1.7bn, 1.4bn and 0.8bn respectively. Similar compensatory mechanisms were present in the equalization transfer allocation methodologies applied in 2008-2010, and they were implemented, to a varying degree, in the framework of support measures designed to balance the budgets of the Russian Federation's subjects.

Thus, the equalization transfer allocation methodology contains a large number of elements designed to create incentives for the regions to develop their economies and revenue bases. In order to assess their cumulative effect, one should analyze the dynamics of the tax and non-tax revenues of the budgets of individual regions, and also the size of equalization transfers received by them.

It should be noted that all these specific features of the equalization transfer allocation methodology have not existed before in their present state, because the current methodology for assessing the tax capacity of the regions, the three-year budget plan, and the limitations on the pace of decrease in the estimated volume of equalization transfers were introduced gradually. Therefore it is still not possible to determine the extent of the actual long-term impact of each of the said factors and to monitor, over a sufficiently long period of time, the effects of implementation of any stable equalization transfer allocation scheme, because these are

constantly changing. It should be said, however, that an assessment of their cumulative effect under constantly changing conditions much better corresponds to the actual state of affairs and therefore can present a more objective picture.

2. **Calculation of the amount of compensation for the change in revenue capacity**

In order to estimate how a change in revenue capacity would influence the amount of an equalization transfer, let us proceed to the following experiment. We will select several RF subjects, where over the period from 2006 through 2015, the volume of tax and non-tax revenues in their consolidated budgets was growing at a rate that was above Russia's average. Then we will fix the tax capacity growth rate of one of them at the level of Russia's average tax capacity index. In our calculation of the amount of equalization transfers for 2007–2008, we are going to apply the same tax capacity indices as are applied in the calculations in real terms, because the data relative to the indices describing the tax base for 2007 begin to be applied only in the calculations for 2009. Consequently, the artificially plotted tax capacity of a given region for the period 2009–2015 will be derived on the basis of the corresponding index for 2008, adjusted by Russia's average tax capacity growth rate.

After that, we will calculate the amount of equalization transfer that the region in question would have been receiving over all these years if its revenue capacity were to be increasing at the average rate. The deviation of the resulting value from the actual amount of equalization transfer would be produced by the changes in the estimated revenue capacity.

Similar operations will be performed with the indices describing the amount of tax and non-tax revenues: we will fix the relative share of tax and non-tax revenues in the consolidated budget of a given RF subject in the total volume of tax and non-tax revenues in the consolidated budgets of all the regions at its 2006 level, and then calculate its deviations from the actual values throughout the entire period under consideration.

Thereafter, the operations are performed separately for each selected region, the selected sample also including those regions whose tax and non-tax revenues over that period were growing at a rate below Russia's average. Using the latter as an example, we can observe the movement of the degree of compensation, by the Federation, of the shrinkage in real terms of the regions' revenues through the allocation of equalization transfers.

By comparing the deviation of budget revenues with the amount of equalization transfers, will be able to confirm or refute the hypothesis of the existence of sufficient incentives for the

development of the economy and revenue base of each region, which are incorporated in the equalization transfer allocation methodology.

This approach makes it possible, with a high degree of accuracy, to eliminate the effects of changes in the methodology used for estimating the budget expenditure index, and to achieve the equalization not of the per capita budget revenue indices, but specifically the equalization of opportunities for providing state and municipal services, with due regard for the factors influencing their per unit cost.

In order to ensure the comparability, in nominal terms, of our financial results derived for different years, we are going to apply, alongside the financial indices estimated in actual prices, the same estimates adjusted by the movement of the Consumer Price Index.

The sample of RF subjects selected for our calculations does not include the following RF subjects that formally belong to the group with high growth rates or, vice versa, to that with low growth rates:

- those that during the greater part of the period under consideration were not receiving equalization transfers. Any changes in the revenue capacity of these RF subjects may have no effect whatsoever on the amount of equalization transfers, and it is rather obvious that they do have incentives to develop their economies;
- the RF subjects whose administrative borders were altered during the period under consideration, or those that were created as a result of merger of other RF subjects. The alterations in their respective borders make it significantly more difficult to separately assess those financial effects that have been caused specifically by changes in their tax capacities and the amount of equalization transfers;
- The Chechen Republic. Its tax capacity was not assessed at the start of the period under consideration for lack of reliable statistical data, and its tax capacity index was assumed to be the same as the corresponding index calculated for the Republic of Ingushetia;
- Chukotka Autonomous Okrug. The actual amount of consolidated budget revenue in this region displays very high volatility, and so, depending on the selected time interval, it may be placed either in the group of leaders or the group of outsiders relative to the rate of revenue base growth. Besides, this high volatility was produced not so much by the volatile economic growth rate in that particular

autonomous okrug as by the behavior of big taxpayers, whose obligations to pay taxes to the region's budget depended on the place of their registration.

The results of our calculations of the amount of compensation, by means of changing the amount of equalization transfers, for the changes in the amount of tax and non-tax revenues over the period 2007–2015 are presented in the following Table.

Table

The level of compensation for changes in tax and non-tax revenues through equalization transfer reduction, 2007–2015

RF subject	Ratio of growth rate of tax and non-tax revenues to Russia's average index	In 2015 prices			In actual prices		
		change in amount of tax and non-tax revenues in CBR	change in amount of equalization transfers	level of compensation for change in tax and non-tax revenues through equalization transfer reduction	change in amount of tax and non-tax revenues in CBR	change in amount of equalization transfers	level of compensation for change in tax and non-tax revenues through equalization transfer reduction
	%	Rb bn	Rb bn	%	Rb bn	Rb bn	%
Maximum growth							
Sakhalin Oblast	505%	504.39	-21.22	4.2%	427.32	-16.93	4.0%
Republic of Ingushetia	221%	11.56	-3.89	33.7%	9.25	-3.24	35.1%
Republic of Dagestan	184%	90.40	-45.36	50.2%	69.60	-37.53	53.9%
Republic of Adygea	176%	26.34	-7.84	29.8%	20.82	-6.65	32.0%
Karachay-Cherkess Republic	152%	13.95	-8.21	58.9%	11.10	-6.71	60.4%
Kaluga Oblast	146%	116.11	-9.35	8.0%	89.53	-7.71	8.6%
Magadan Oblast	145%	22.88	-3.13	13.7%	19.76	-3.63	18.4%
Republic of Tyva	140%	29.80	-10.25	34.4%	22.28	-8.59	38.6%
Tula Oblast	137%	96.97	-7.28	7.5%	77.33	-5.97	7.7%
Republic of Tyva	135%	10.11	-3.64	36.0%	7.89	-2.93	37.1%
Minimum growth							
Vologda Oblast	70%	-119.08	7.75	6.5%	-94.23	6.58	7.0%
Kemerovo Oblast	84%	-5.52	6.84	123.9%	-19.37	6.35	32.8%
Omsk Oblast	84%	-40.06	16.46	41.1%	-29.06	12.97	44.6%
Republic of Karelia	85%	-2.60	5.54	213.5%	-3.91	4.53	115.9%
Republic of Bashkortostan	86%	-200.90	10.36	5.2%	-147.10	9.14	6.2%

Chelyabinsk Oblast	87%	-169.93	19.93	11.7%	-126.17	16.19	12.8%
Komi Republic	87%	-69.11	4.04	5.8%	-47.83	3.01	6.3%
Sverdlovsk Oblast	90%	-109.48	1.83	1.7%	-83.47	1.38	1.6%

Note. CBR is consolidated budget of a region.
Source: own calculations.

After having analyzed our results, we have come to the following conclusions:

1) the degree of compensation for budget revenue growth through equalization transfer reduction is sufficiently low, thus confirming the hypothesis that the methodology for allocating equalization transfers to the regions, which has been applied for the last nine years, has indeed retained sufficiently numerous economic development incentives, and has not promoted dependency attitudes;

a) the assumption that the degree of compensation is higher for the poorer regions, whose fiscal capacity prior to equalization is below 0.6, has been confirmed. Thus, for the fast growing regions, whose estimated fiscal capacity prior to the allocation of equalization transfers was above 0.6, the degree of compensation was generally in the interval of 32–61% (18.4% for Magadan Oblast), while for the more wealthy regions it was not higher than 9%.

Besides, the following points should be noted.

a) The low degree of compensation for Sakhalin Oblast (4%) is explained by the fact that from 2011 it received no equalization transfers.

b) The anomalous levels of compensation for lost revenues through increased equalization transfers in Kemerovo Oblast and the Republic of Karelia have to do with the fact that the movement patterns displayed by the lower growth rates of tax and non-tax revenues in their consolidated budgets during the period under consideration were by no means monotonous: a significant plunge of the budget revenue growth rate relative to Russia's average index was noted towards the end of the period under consideration, whereas in the first half of that period it was frequently above the average. So, these variations were mutually offset in the period-end index. As for the variations in the amount of equalization transfers, these were found to be more sensitive to a diminishing revenue capacity rather than to its growth, and so the equalization transfer reduction indices are lower than their growth indices.

When assessing and interpreting the obtained results, it is necessary to point to the following assumptions and shortcuts that have also influenced the final values.

1) The artificial assignation, to a given region under consideration, of the average (for the RF) growth rate of tax-generated and non-tax revenues in its consolidated

budget, and the assignation thereto of the average tax capacity growth rate, are not two equivalent operations. On other words, if in a given region the growth rate of one of these two indices should happen to be below the average, it will not mean that the growth rate of the other will also be average. In real terms, the growth rates of tax capacity and budget (tax and non-tax) revenues may be somewhat different;

2) To assume that the tax capacity growth rate is average is not the same as to set the tax capacity index at one level only. It may deviate in any direction depending on how much the permanent population growth rate in a given region deviates from Russia's corresponding average index. In its turn, the assumption that the population growth rate does not depend on the rate of economic growth is in itself a rather far-fetched one.

3) The obtained result is significantly influenced by the length of the period under consideration. Thus, for example, if the replacement effect is calculated for one financial year only, no compensation for budget revenue growth through equalization transfer reduction will be observed. Also, due to the limited period under consideration, the revenue capacity growth during its last year will not be compensated for, while the results of the two previous years will be accounted for only in part. Consequently, the longer the period under consideration, the weaker the influence on the calculated results of the lag between the economic indices and the estimated amounts of equalization transfers.

So, the derived estimates and the results of our calculations are more qualitative than quantitative, and this largely explains the widely deviating estimates obtained for different regions.

Conclusion

Our analysis of the methodology for allocating equalization transfers from the federal budget applied over the period 2006–2015, as well as the calculated changes in the amount of these transfers resulting from the increased or reduced revenue capacity of a given region, demonstrate that the degree of reduction in the transfer amount is much less than the corresponding growth of tax-generated and non-tax revenues in the region's consolidated budget, which points to the existence of sufficient incentives for the regions to develop their economies

and increase their revenue bases. It is noteworthy that these incentives are significantly higher for the regions whose fiscal capacity prior to the allocation of an equalization transfer is above 0.6 (the level corresponding to the first budget fiscal capacity equalization criterion). The other assumption - that a monotonous downward movement pattern of a region's estimated revenue capacity will not result in the full compensation of its reduction by an increased amount of the equalization transfer - is also found to be true.

If these findings are so telling, then why many speak of the absence of economic incentives in the equalization transfer allocation methodology? It seems that such arguments rely not on a comparison of the actual amount of equalization transfers with the revenue base induces hypothetically calculated relative to the values of other indices, but on the actual changes in the amount of equalization transfers, which are influenced not only by the movement patterns of regions' revenue capacity indices, but also by changes in the methodologies applied for calculating their values and the budget expenditure indices, by the movement pattern of the total volume of equalization transfers, by altered budget planning intervals, and by the use of one or other specific compensation mechanism.

Thus, in particular, the shrinkage of the relative share of the total amount of equalization transfers in regions' total consolidated budget revenues that occurred after 2003 (Fig. 2), all other conditions being equal, indeed translates in the reduction, in real terms, of the amount of equalization transfer actually received by a given region.

In addition to the said factors, it is necessary to remember that, beside the equalization transfers, there also exist the transfers earmarked for the measures designed to sustain well-balanced regional budgets, subsidies, and other interbudgetary transfers, as well as budgeting loans, all of which are associated, in one or other way, with the results of equalization transfer allocation to the regions and their revenue capacity growth rates.

As far as the transfers earmarked for funding the measures designed to sustain well-balanced regional budgets are concerned, it can be said that, all other conditions being equal, the regions with lower fiscal capacities and lower growth rates of tax and non-tax revenues in their budgets have greater chances to receive them. Consequently it may be assumed that, if a given RF subject had displayed a lower revenue growth rate during all these years, the total volume of the said transfers received over that period would have been higher.

The same is true of budgeting loans. Besides - for example, during the 2009 crisis - the relatively poor regions were receiving the transfers designed to sustain proper balance in their budgets, while the wealthier ones were granted budgeting loans.

In accordance with the rules for the allocation of many types of subsidies, their actual amount or the degree of their co-financing by the RF subject receiving them negatively depend on its budget fiscal capacity level achieved after the allocation of an equalization transfer.

Thus, growth of a region's fiscal capacity results in a reduction not only in the amount of equalization transfers, but also the amount of other types of financial aid granted to the regions.

Another factor influencing the net financial effect, for a region, of its accelerated economic growth rate is the amount of additional budget expenditure allocated to the implementation of measures designed to attract and develop businesses. Thus, for example, the growth, in current prices over the period under consideration, of tax and non-tax revenues in the consolidated budget of Kaluga Oblast by Rb 89.5bn (see the Table) would have been impossible without the implementation of such measures to the total value of approximately Rb 24bn.

So, the total net financial effect for a region's consolidated budget resulting from growth of its economy may turn out to be somewhat lower than the index derived on the basis of calculations based exclusively on changes in the amount of tax and non-tax revenues in its consolidated budget and the amount of the equalization transfer received from the federal budget. Nevertheless, it we speak only of the presence or absence of incentives for regional development incorporated specifically in the equalization transfer allocation formula, the conclusion will always be the same: these are quite sufficient to make any region properly interested in promoting its economic development.

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