

The Role of Inter-Budget Transfers in Ensuring the Economic Growth of High-Subsidised Regions

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ABSTRACT

The issues of ensuring the budget sustainability of Russian regions have not lost their relevance in recent years. A special place in this area of research is occupied by the phenomenon of subsidisation of regional budgets, as the most acute problem in current budget policy, which is a consequence of low budget security and insufficient balance of the budget system. In this regard, this article is devoted to the study of the role of inter-budget transfers provided to regions with a high share of subsidised dependence in ensuring their economic growth. The main scientific tools of the study are comparative analysis, dynamic series, structural analysis, correlation and regression analysis. The main key features of the development of high-subsidised regions, explaining the trends of their economic growth, are revealed. The degree of connection between the flows of inter-budget transfers and the economic growth rates of high-subsidised regions of Russia is determined.

Keywords: *Regional budget, Subsidisation, Inter-budget transfers, Regional economy, GRP, Dynamics.*

1. INTRODUCTION

1.1. Current budgetary nature problems of Russia regional development

Regional development of socio-economic systems is one of the fundamental elements of building a sustainable national economy that is ready to withstand various negative impacts of internal and external nature. Among the significant threats of external influence on the sustainability of the entire economy of the country and regions in 2020 was two crises: falling commodity prices hydrocarbon commodity and coronaries caused by a new coronavirus infection that forced to declare a worldwide pandemic and a General lockdown as control measures to the epidemiological risk [1,2]. In such conditions, the national economy has been exposed to the problems that have accumulated over the past 15 years and have hindered the effective response to crises, which has resulted in more significant damage to the social sphere and the economy than in other countries and comparison with the previous stages of recessions and stagnation [3].

From the point of view of regional development of Russian subjects, it is necessary to identify several

problematic aspects of a budgetary and financial nature that harm the trends of socio-economic development of the meso-level. The most key problem in ensuring sustainable regional growth in Russia is the strengthening of the spatial unevenness of the national economy and regional polarisation [4], which determines the meso-level differences in the possibilities of generating regional budget revenues and the effectiveness of the implementation of fiscal policy. Scientific works also note a significant differentiation in the level of efficiency of regional tax systems, which is reflected in the ratio of the region's budget profitability and the primary budget risks of instability [5]. The federal structure of Russia in the conditions of a huge territory and natural and climatic, as well as geographical diversity, leads to the need to consider many different determinants that determine specific trends in the socio-economic and fiscal state of Russian regions. The presence of sufficient regional economic potential is not a guarantee of ensuring the stability of the regional socio-economic system without effective economic management.

From the debt burden point of view and its impact on the stability of Russian regions, socio-demographic characteristics are of great importance and a key in

shaping the fiscal sustainability of the country's subjects. On the other hand, it is also vital to unbalance the volume of expenditure obligations of regional authorities (including those delegated from the federal level) and revenue sources for their financing [6].

The combination of the presented factors of the instability of regional socio-economic systems, which were identified through the prism of the budget and financial mechanism, leads to a decrease in the qualitative characteristics of budget stability: security, balance, self-sufficiency. The results of such processes for Russian regions is the strengthening of the processes of subsidisation of their budgets [7].

1.2. Fiscal decentralisation in international practice and regional economic growth

In international practice, the issues of providing territories with local revenue sources in the conditions of negative economic conditions are equally relevant. The lack of budget revenues at the subnational level forces the central state apparatus to provide support in the form of grants and inter-budget transfers. This practice in the framework of the budgetary sphere of public administration and intergovernmental interaction has been called fiscal decentralisation [8,9].

As part of this decentralisation process, local governments are increasingly taking on the role of increasing their revenues to finance their budgets and provide essential public services to their citizens. Critics argue that while financial transfers from the central government help finance the provision of public services, they can also eliminate the need for local revenue generation, which in turn undermines the fiscal autonomy of subnational governments [10].

On the other hand, there is a standard view regarding the positive impact of inter-budget transfers on the economic growth rates of sub-federal territories. There are three common points of view regarding the effect on the regional economy of receiving budget assistance. The first group of authors agree that there is a positive connection [11-13]. The second group notes the negative effect of fiscal decentralisation and transfer incentives for subnational territories [14,15]. The third position converges in the absence of any interdependence [16,17].

Several factors explain the differences between different authors on the impact of inter-budgetary assistance on the economic development of the regions:

1. Differences in the data sample by time horizon and quantitative structure;
2. Differences in the use of empirical methods for analysing such relationships and correlations;
3. Use of various forms of fiscal decentralisation as a factoring feature;

4. Use of various variables as an indicator of economic growth.

1.3. Subsidisation of the budgets of the constituent entities of Russia

In the conducted research of the authors, it was noted that the problem of subsidisation of regional budgets in Russia remains relevant since it harms the state of regional finances of the country as a whole [18]. It is also determined that the number of high-subsidised budgets of subjects (the share of subsidies in the structure of their income is more than 40%) has remained at a stable level of 6 units over the past 10 years. The existing risks of external crisis phenomena are manifested in the state of the federal budget in the formation of its revenue base. The planned volume of the Russian federal budget deficit in 2020 has already exceeded 5 trillion rubles; this will harm the budget situation of the most vulnerable recipient regions, whose revenues depend on the allocated volumes of inter-budgetary assistance [2]. The author's work [19] empirically proves a strong connection and dependence of the allocated inter-budget transfers on the volumes of oil & gas and non-oil & gas federal revenues. At the same time, the definition of the mutual influence of socio-economic characteristics of high-subsidised regional budgets and their tax and financial indicators remains an insufficiently studied area.

2. RESEARCH METHODOLOGY

Within the study framework, the authors set the goal to identify the degree of influence of the dynamics of gratuitous income on the dynamics of economic development of regions with a high share of subsidies in the primary indicator of GRP per capita.

To determine the factor of inter-budget transfers in the high-subsidised budgets economic growth of the subjects of the Russian Federation, necessary to identify the number of such regions over the past 10 years.

In recent years, the number of regional budgets with a high share of subsidies (more than 40% of their revenues) in Russia has been maintained. We will select the subjects of the Russian Federation that exceed the specified indicator for the last 10 years according to the following formula:

$$D = \frac{\text{Subsidy volume (for alignment and balancing)}}{\text{Value of own revenue}} \quad (1)$$

Then, using the analysis of dynamic series, compare the trends of increasing dependence on the volume of inter-budget transfers provided and the growth rates of regional economies over the past 15 years. The data are taken from the official websites of the Federal Treasury of the Russian Federation and the Federal State Statistics Service of the Russian Federation. Such a comparison will reveal the similarity of the characteristics of a group

of high-subsidised regions in terms of relative indicators of per capita transfer financing and GRP. To determine the degree of connection between budget assistance and the per capita grp indicator of high-subsidised regions, a correlation and regression analysis was performed using the formulas:

Linear correlation coefficient:

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{n}\right) \left(\sum y^2 - \frac{(\sum y)^2}{n}\right)}} \quad (2)$$

X-inter-budget transfers;

Y – per-capita GRP.

Linear regression:

$$y_x = a_0 + a_1x \quad (3)$$

3. THE STUDY RESULTS

As a result, Russia has allocated 6 regional budgets that have the level of a high-subsidised subject (see table 1).

The group of high-subsidised regional budgets is characterised by the share of subsidies more than 50% with the maximum value in the Republic of Tyva – 63%. Considering the average Russian value of subsidised regional budgets at the level of 8%, such multiple break indicates structural and deep problems with ensuring budget discipline in the type of high-subsidised budgets of Russian regions.

In these regions, the problem of low financial autonomy of the budget has not been solved for many years. During the same period, the number of territorial entities that belong to the group of donor regions is at an average level of 12 units.

When considering the broad time horizon for the gratuitous income of this group of regions, an upward trend is observed in all subjects (see figure 1).

Among the 6 regions studied, the largest amount of gratuitous aid accumulated over 15 years falls on the Chechen Republic (844.8 billion rubles), the second position is the Republic of Dagestan (809.4 billion rubles). It should be noted that the most variable dynamics of inter-budget transfers is observed in the

Chechen Republic. The sharp growth in 2007 was associated with the beginning of the implementation of the socio-economic development program. The same reason led to a decrease in the indicator in 2013. In other regions of Russia, receipts were more evenly distributed.

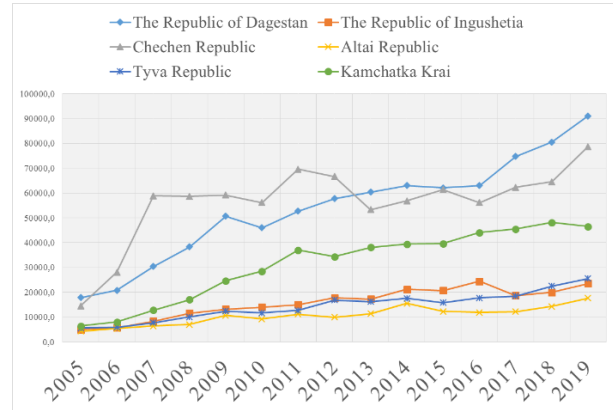


Figure 1 Dynamics of inter-budget transfers of high-subsidised regional budgets of the Russian Federation for the period 2005-2019.

There is a wide variation in the volume of transfers provided. At the same time, a group of three subjects (Tyva, Ingushetia and Altai) is distinguished, the values of which are relatively comparable in comparison with other regions.

The share of 6 high-subsidised regional budgets accounts for an average of 12% of all allocated grant aid intended for 72 subjects of the Russian Federation that have different types of subsidised dependence.

When considering high-subsidised regions in terms of inter-budget transfers per capita, the results reflect different trends in their structure.

Based on the data in figure 2, the largest per capita transfer financing for the period since 2008 can be traced in the Kamchatka territory. In other regions, the spread is much smaller than according to Figure 1, in the average range from 10 thousand rubles to 50 thousand rubles at the beginning of the period, and from 30 thousand rubles to 80 thousand rubles at the end, respectively.

Based on the data in figure 2, the largest per capita transfer financing for the period since 2008 can be traced in the Kamchatka territory. In other regions, the spread is much smaller than according to Figure 1, in the average

Table 1. High-subsidised budgets of the Russian Federation subjects for the period 2010-2019

Region	The average level of subsidies for the period
Kamchatka territory	50
The Republic Of Altai	51
The Republic of Ingushetia	52
The Republic of Dagestan	55
The Chechen republic	57
The Republic of Tyva	63
Russian federation	8

range from 10 thousand rubles to 50 thousand rubles at the beginning of the period, and from 30 thousand rubles to 80 thousand rubles at the end, respectively

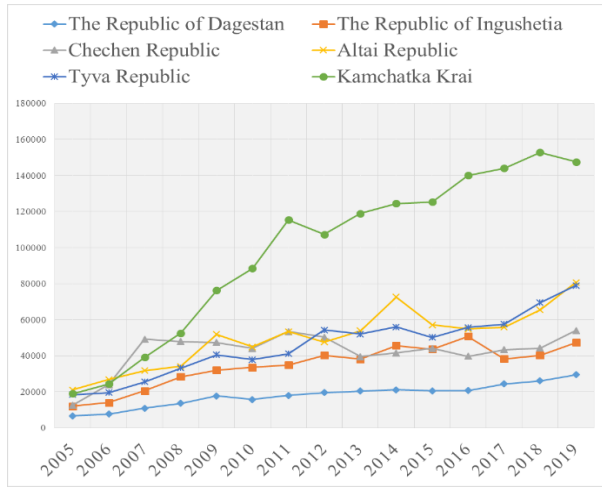


Figure 2 Dynamics of gratuitous aid per capita of high-subsidised regional budgets of the Russian Federation for the period 2005-2019.

The presented values allow us to identify similar characteristics of high-subsidised budgets of subjects in per capita financing at the expense of gratuitous assistance. The exception is the Kamchatka territory due to other factors that affect the increase in the cost of budget services, which, considering the low population, high consumer spending and average prices, as well as transport and logistics remoteness from the main trunk networks, severe climatic and geographical conditions, makes it necessary to increase the allocated inter-budgetary assistance.

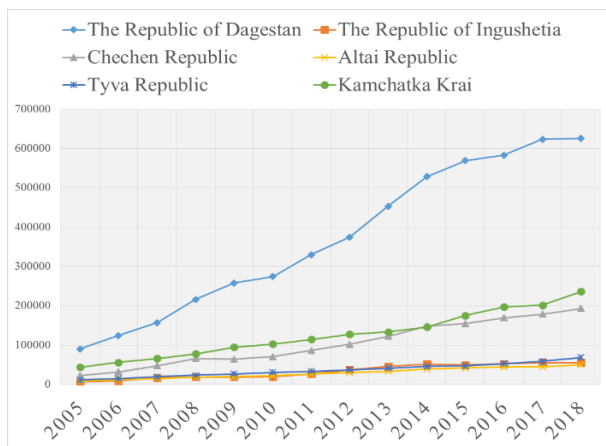


Figure 3 Dynamics of GRP in current prices of regions of the Russian Federation with a high share of subsidies in budgets for the period 2005-2018.

The economic growth of regions with high-subsidised budgets has multidirectional dynamics. A striking difference is the large margin of the Republic of Dagestan in terms of GRP for the entire period under review in comparison with other regions of the country from the study group. The second conditional cluster is the

Kamchatka territory and the Chechen Republic, whose economic growth dynamics are similar both in terms of their trajectory and volume. The third cluster is the Republics of Tyva, Ingushetia and Altai, which have the almost identical volume of the regional economy for the entire period under review.

However, absolute indicators for comparing regions differentiated by their socio-economic characteristics do not allow us to identify the correspondence between them.

Figure 4 shows a similar structure to figure 2, characterised by a significant gap in the Kamchatka territory, which is explained by the small population of the region and the high level of prices. However, all other regions differ in the similarity of the indicator with a small gap between them, on average for the entire period from 73 thousand rubles (the Republic of Ingushetia) to 138 thousand rubles (the Republic of Altai). Another unifying parameter for high-subsidised regional budgets (except the Kamchatka territory) is the multiple lag of per capita GRP (2, 3 times) from the national average.

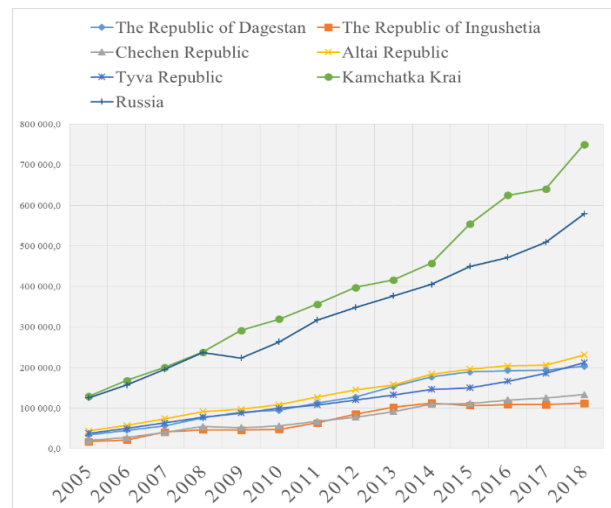


Figure 4 Dynamics of per capita GRP in high-subsidised regions of the Russian Federation for the period 2005-2018.

The considered indicators allow us to conclude the unifying socio-economic situation in terms of GRP of high-subsidised regional budgets, which requires a more detailed analysis of other indicators of the socio-economic situation and development of the studied group of regions.

When considering the average growth rate according to the data presented above, it can be said that high-subsidised regions are characterised by higher rates of economic growth in comparison with the dynamics of budget assistance provided (see table 2). However, this trend is not observed in all subjects and does not have a very pronounced gap.

On the other hand, if we consider the entire period and the results obtained in the form of quantitative growth,

the volume of budget assistance provided increased by an average of 5.2 times in all the studied regions, while GRP for the same period increased by 6.6 times. A similar situation can be traced with the relative indicators of per capita transfer financing - 4.8 times and per-capita GRP - 5.8 times, respectively.

Let's determine the degree of connection and build a regression line.

When calculating the average budget aid receipts for all high-subsidised regions over the past 15 years and comparing the result obtained through the correlation coefficient with per capita grp, according to table 3, we get a high direct relationship between the considered indicators (0.8267). A closer relationship is observed when using per capita budget assistance per GRP per capita (0.8550) as a factor indicator.

If we build a linear regression model from the data obtained, we have the following results (see figures 5 and 6).

4. RESULTS DISCUSSION

Thus, the study made it possible to determine that the unifying factor for high-subsidised regional budgets is:

1. A significant amount of budget assistance provided;
2. Similar parameters of relative values of per-capita financing of inter-budget transfers and GRP;
3. Similar upward dynamics of grant aid and economic growth;
4. Indicators of economic development are many times lower than the national average;

5. Identity of the GRP economic indicator for different socio-economic parameters of the regions;

6. The high degree of correlation between budget aid flows to high-subsidised regions and their per capita economic growth;

7. A closer relationship between inter-budget transfers and the economic growth rates of high-subsidised regions can be traced by the factor indicator of per-capita transfer financing.

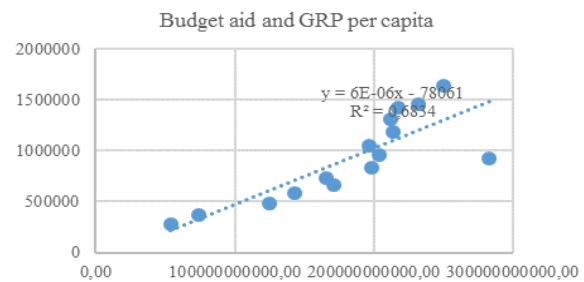


Figure 5 Linear regression of budget aid and per-capita GRP of high-subsidised regions.

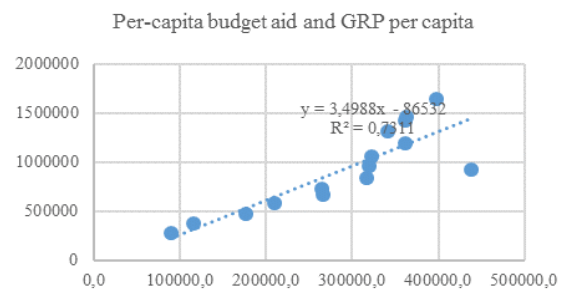


Figure 6 Linear regression of per capita budget aid and per-capita GRP of high-subsidised regions.

Table 2. High-subsidised budgets of the Russian Federation subjects for the period 2010-2019

Region	Dynamics of gratuitous aid		Dynamics of GRP		Dynamics of BP / per capita		Dynamics of GRP / per capita	
	Average growth rate	2019/2005	Average growth rate	2019/2005	Average growth rate	2019/2005	Average growth rate	2019/2005
The Republic of Dagestan	13,2	509,4	16,6	691	12	445	15,3	600,7
The Republic of Ingushetia	13,0	470,4	18,7	747	12	394	17,5	645,6
The Chechen republic	17,2	540,8	18,7	843	15	428	16,6	665,9
The Republic Of Altai	12,4	414,8	14,7	574	12	383	14,1	531,0
The Republic of Tyva	12,3	458,8	14,9	590	12	429	14,3	553,9
Kamchatka territory	16,6	728,4	14,0	538	17	779	14,7	580,6

Table 3. The relationship between budget transfers and economic growth in high-subsidised regions of Russia

	Amount of budget assistance	The amount of budget aid/capita
GRP / per capita	0,8267	0,8550

The results of the dynamic comparative analysis showed that the increase in the economic growth of high-subsidised regions in terms of GRP/per capita is ahead of similar values of inter-budget transfer flows. This indicates the presence of other factors that provide increased rates of economic development of this group of regions. On the other hand, given the strong correlation between the indicators under consideration, it should be noted that the constructed regression model can be used to predict the economic growth rates of high-subsidised regions based on changes in budget aid flows.

5. CONCLUSIONS

The big question remains the problem of maintaining high subsidies at such rates of economic growth. A logical conclusion, in this case, can be that the created added value in the regional economy of high-subsidised budgets of subjects does not allow to be transformed into a taxable base for increasing tax and non-tax revenues. This hypothesis is based on the fact that in almost all the subjects of the country considered, the share of the budget sector in the structure of grp (public administration, education, health, security, culture and sports) exceeds 30-40%. Such a structure complicates the process of forming the tax base since the created added value does not give efficiency and intensification of economic and economic activities.

The obtained results require additional research to identify the level of relationship dynamics grant aid and fundamental socio-economic indicators of heavily subsidised regional budgets to identify critical determinants that explain the long period of transfer dependence, are considered groups of regions.

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