

## Reaction of Municipal Budgets to State Regulation Measures: Assessment Methodology



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**Abstract.** The geographical scale of the Russian Federation dictates the need for differentiated spatial implementation of economic strategy and tactics. The municipal component of these processes is particularly important, since a significant part of regional resources is formed at the local level, causing multiplicative effects in the structures operating in the territory. In the conditions of sanctions pressure and lack of funds to finance the development of municipalities, it is necessary to take into account the reaction and extent of activity of local budgets in relation to government incentive measures. It is necessary to understand which municipalities' budgets react more actively to the managing effects of state policy; this will effectively stimulate the development of municipalities in the conditions of financial constraints of state bodies. The paper proposes and verifies a methodological approach to the comparative assessment of the activity of municipal budgets in terms of measures of state financial support for municipal development. The approach is based on the maximin criterion and is implemented on the example of municipalities included in the Far Eastern Federal District, which is Russia's largest one. The information base comprises data of the Federal Treasury on the state of municipalities' consolidated budgets for 11 Far Eastern constituent entities of the Russian Federation for 2011, 2015 and 2020. We analyze the consolidated budgets of all 164 municipal districts and 66 urban okrugs and estimate their comparative activity in relation to the measures of state financial stimulation of municipal development. We reveal high polarization of the activity of local budgets regarding state regulation measures.

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We show that the budgets of urban okrugs react more actively to government measures than the budgets of municipal districts. The budgets of urban districts formed a group of local budgets with the most active response to state regulation measures. Nevertheless, the transition of the Magadan and Sakhalin oblasts to single-level local government systems consisting only of urban okrugs by 2020 did not contribute to increasing the activity of the budgets of urban okrugs in these regions in relation to state regulation measures in comparison with other municipalities of the Far Eastern Federal District. The proposed mechanism makes it possible to provide territorial administration bodies with methodological tools for in-depth analysis and comparative assessment of the extent of activity of municipal budgets in relation to state regulation measures.

**Key words:** municipalities, local budget, stimulation of municipal development.

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### Problem statement

The vastness of Russia’s territory dictates the need for differentiated spatial implementation of the economic strategy and tactics of national development. At the same time, the regional component of socio-economic processes is of particular importance, since the municipal level forms a significant part of the potential of regional resources, which is included in the budget system and causes multiplicative effects in the structures operating in the territory.

At the regional level, state authorities create and institutionalize a certain system of socio-economic priorities embodied in various types and forms of tax benefits, subsidies, grants and other budgetary measures that stimulate the targeted activities of local self-government (LSG) bodies for the development of their subordinate territories.

The issue concerning the provision of a quantitative assessment of the response of municipal entities (ME) to state influence is interesting as an important condition for socio-economic development of the region’s economic complex. Theoretical constructions traditionally consider

that the budget is the main lever of the regional government to stimulate territorial socio-economic development, since many types of economic activities financed by the budget and tax benefits it provides have a multiplicative effect<sup>1</sup>.

In fact, budget indicators reflect the policy of federal, regional and municipal authorities in the field of socio-economic development of a territory<sup>2</sup>. Without knowing the state of the financial sphere, it is impossible to assess the level of territory’s development, since regional finance is the very means that serves as the basis for the implementation of socio-economic projects and programs in the territory.

<sup>1</sup> The stimulating function of the budget is particularly pronounced in the USA, where the redistribution of finances between states, as well as between municipalities within the state, is poorly developed (Lavrov et al., 2001).

<sup>2</sup> Lavrov A.M. (Ed.). (2007). *Rukovodstvo po upravleniyu regional’nymi i munitsipal’nymi finansami: v 2 t. Tom 1* [Guide to the Management of Regional and Municipal Finances: in 2 Volumes. Volume 1]. Moscow: LENARD; *Problemy mezhyudzhetykh otnoshenii v Rossii* [Problems of Intergovernmental Relations in Russia]. Moscow: Izd-vo instituta Gaidara, 2012.

As part of the implementation of the requirements of Federal Law 172<sup>3</sup> for the elaboration of strategic documents for the development of constituent entities of the Russian Federation, it is extremely important not only to comply with budget-related social restrictions, but also to find budgetary sources for financing the strategic development of MEs.

The paradox is that the need to use universally recognized criteria and quantitative parameters in assessing the activity of municipal budgets to measures of state stimulation of regional development is recognized by researchers (Zaitseva, 2007; Mikheeva, Ananyeva, 2011; Kotov, 2022) and practitioners, too (Shirokov, Yurkova, 2020); however, in reality, the decision to use a specific tool to promote regional development is often determined not by the desire to “expand” regional strategic problems, but turns out to be aimed at solving the problems regarding the “survival” of the municipality, focusing on social issues of local budgets (Leonov, 2023).

A holistic system for assessing the comparative activity of local budgets in relation to regional policy measures is currently, if not absent, then in the process of formation (Korotina, 2014; Selyavina, 2015; Kotov, 2020). At that it is hardly possible to determine in absolute terms the extent of reaction of the budgets of specific municipalities, but one can try to assess the comparative level of activity of local budgets in relation to state incentive measures, comparing it with the reaction of the budgets of other municipalities of some constituent entity or federal district of Russia.

The object of the study is the municipalities of the Far Eastern Federal District (FEFD). Due to its position and geopolitical significance, the Far Eastern Federal District is constantly in the

spotlight of the federal government, acting as a kind of “economic laboratory of the country”<sup>4</sup>.

The aim of the work is to build a methodology for assessing the comparative activity of local budgets in relation to financial measures of state regulation of municipal development. For this purpose, we analyzed measures of state regulation of municipal development, grouped the existing approaches to the analysis of local characteristics of the state of the municipal budget system, substantiated a comprehensive approach to assessing the comparative activity of municipal budgets taking into account the consistency and comparability of local estimates, verified the proposed approach on the example of Far Eastern Federal District municipalities, and analyzed the results obtained.

#### Data sources

We analyzed the dynamics of the comparative activity of local budgets in relation to state incentives to municipal development according to the data of the Federal Treasury on the execution of consolidated budgets of municipalities of Russia’s Far Eastern constituent entities<sup>5</sup> for 2011, 2015

<sup>4</sup> It was in the Far East that the first federal regional programs were tested, free economic zones appeared; and currently territories of advanced socio-economic development, the free port of Vladivostok are being formed (Synthesis of scientific..., 2011; Leonov, 2021). At the present stage, the surge in attention to the development of the Far East is explained by the importance of taking into account the uncertainty of the influence of external factors in the process of the sanctions war in the difficult financial situation in the country.

<sup>5</sup> In accordance with Presidential Decree 632, at the end of 2018 the territorial composition of the Far Eastern Federal District was expanded to include two regions that were previously administratively part of the Siberian Federal District – Zabaikalsky Krai and the Republic of Buryatia. In this paper, the composition of the Far Eastern Federal District is considered within the boundaries of the said decree and includes 11 constituent entities of the Russian Federation: the republics of Sakha (Yakutia) and Buryatia, Khabarovsk, Primorsky, Kamchatka and Zabaikalsky krais, Amur, Magadan and Sakhalin oblasts, Jewish Autonomous Oblast (JAO), and Chukotka Autonomous Okrug (ChAO) (see Presidential Decree 632, dated November 3, 2018 “On amendments to the list of federal districts approved by Presidential Decree 849, dated May 13, 2000”). Therefore, all the retrospective data in the article were recalculated regarding the “new” composition of Russia’s Far Eastern constituent entities.

<sup>3</sup> On strategic planning in the Russian Federation: Federal Law 172-FZ, dated June 28, 2014. Available at: [https://www.consultant.ru/document/cons\\_doc\\_LAW\\_164841/](https://www.consultant.ru/document/cons_doc_LAW_164841/)

and 2020. We considered all the revenues of the local budgets of Far Eastern entities: their own (tax and nontax) revenues, as well as the volume and dynamics of transfers both in general and according to their individual types (grants-in-aid, subsidies, subventions). Data on the state of municipal budgets are presented for each of the considered Far Eastern entities in an aggregated form by municipal district and urban okrug. The consolidated budgets of all 164 municipal districts (MD) and 66 urban okrugs (UO) of eleven Far Eastern constituent entities were analyzed.

### **Methods of state regulation of municipal development**

Methods of state regulation of municipal development are diverse, are used in different countries and cover a system of legal, economic and financial methods.

Legal methods include regulatory and legislative acts developed and applied by the authorities to regulate the process of territorial development and redistribution of powers. At the same time, as J. Kornai noted, the stability of the legislative framework is extremely important in any economic situation, but in changeable economic conditions, uniform stable “rules of the game” for ensuring territorial development become particularly important (Kornai, 1986). Unfortunately, the modern Russian legal framework, despite the efforts of the RF Government to adjust it, remains quite aggressive in terms of creating favorable institutional conditions for regional development. The denunciation of the European Charter of Local Self-Government<sup>6</sup> and the uncertainty concerning

<sup>6</sup> The launch of the special military operation in February 2022 and the subsequent withdrawal of Russia from the Council of Europe in March showed that the denunciation by the Russian Federation of a number of European conventions is only a matter of time. A year later, on February 16, 2023, the RF State Duma denounced the validity of 21 agreements with the EU. Among other things, Russia withdrew from the European Charter of Local Self-Government (see: The State Duma approved the termination of international treaties of the Russian Federation. Available at: <https://pravo.ru/news/245315/>).

the adoption of draft Federal Law 40361-8 “On the general principles of organizing local self-government in a unified system of public authority”<sup>7</sup> that passed the first reading in the State Duma show that legal methods of influencing municipal development in Russia are still at the stage of formation (Barabash, Leonov, 2023).

In other countries, unlike Russia, there is a certain stability of the legislative framework in terms of promoting the development of MEs, but this does not diminish the importance of issues of economic support for municipalities, which turn out to be significant, albeit to varying degrees, for all federal nation-states<sup>8</sup>.

At the same time, economic methods of regional development management in Russia cover homogeneous (targeted regional programs) and local instruments for promoting regional development based on the concept of “growth poles” (free and special economic zones, zones of territorial development, territories of advanced socio-economic development, free port of Vladivostok), while in foreign countries in recent decades, the authorities have often tried to solve the economic problems of municipalities, encouraging the consolidation of the latter, which formally leads to a reduction in the number of MEs and to the actual “compression” of the territorial structure of the LSG itself<sup>9</sup>.

An analysis of publications devoted to the assessment of the economic efficiency of the made enlargements of municipalities in the European Union (Pevcin, 2017b) and Australia (Dollery et al., 2007) shows that most often the process of merging municipalities is welcomed and supported by state

<sup>7</sup> On the general principles of organizing local self-government in the unified system of public authority: Draft law 40361-8. Available at: <https://sozd.duma.gov.ru/bill/40361-8>

<sup>8</sup> Making Decentralization Work: A Handbook for Policy-Makers. Available at: <https://dx.doi.org/10.1787/g2g9faa7-en>

<sup>9</sup> Multi-level governance reforms: Overview of OECD country experiences. Available at: <https://doi.org/10.1787/9789264272866-en>

authorities, but it is based not on quantitative, but only on qualitative assessments of the consequences. In reality, only a small number of the geographically smallest municipalities out of the total mass of MEs experience a scale effect at the same time (Pevcin, 2017a).

In fact, it can be stated that the question of quantifying the effectiveness of the use of economic instruments of regional policy remains open, although the results of research (Mikheeva, Ananyeva, 2011; Sukharev, 2015; Minakir, Prokapalo, 2017; Leonov, 2020; Kuznetsova, Babkin, 2021; Temple, 1994; Dollery et al., 2007; Pevcin, 2017b) show that without an adequate financial base, the effectiveness of the use of economic instruments of regional development is low.

Financial methods for promoting municipal development include measures of direct budget financing, implying the allocation of funds for the implementation of priorities of regional strategies in accordance with development programs, and measures of tax policy and intergovernmental transfers, which are allocated to municipalities according to specified criteria, and their volumes vary in accordance with federal and regional formal methods of allocating budget resources. These methods are largely normative, and several Russian and foreign studies are devoted to the problems of their use<sup>10</sup> (Belov, 2012; Levina, 2017; Fratesi, Perucca, 2014); but issues concerning the quantitative assessment of the impact of financial methods on the territorial development of municipalities are far from being resolved in Russia (Kotov, 2020; Kulakovsky, 2019) as well as abroad (Dollery et al., 2007; Pevcin, 2017a). A significant number of indicators and the divergence of their quantitative assessments leave unresolved

the problem of constructing an integral quantitative indicator of the response of local budgets to state policy measures in relation to municipalities.

We would like to emphasize that under the conditions of sanctions pressure, it is difficult, if not impossible, to attract funds from international financial institutions and foreign investments to promote the development of Russian municipalities, despite the sets of regulatory and legal documents<sup>11</sup> created in most constituent entities of Russia. This further emphasizes the importance of rational use of budgetary measures to promote municipal development and increase attention to the effectiveness of this management. The emerging financial constraints of regional development bring to the fore the issues of assessing the comparative activity of local budgets in terms of reaction to public policy measures for Russia.

#### **Existing approaches to quantifying the reaction (activity) of local budgets to measures of state regulation of municipal development**

To analyze the state of municipal budgets and assess their stability in the face of budgetary policy measures to promote municipal development in Russia, traditional methodological approaches are used, including the analysis of absolute and integral indicators, construction of relative coefficients, methods of horizontal and vertical comparison, aggregation and rating construction.

Most of the existing methods for assessing the state of local budgets take into account certain indicators of budgets' financial stability (Ermakova, Bolyakina, 2012; Solomko, 2019), a number of methods focus only on the analysis of the balance of local budgets (Pinskaya, Ziganshina, 2015), some

<sup>10</sup> Report of the World Observatory on Subnational Government Finance and Investment – key findings. Available at: [https://www.sng-wofi.org/publications/2019\\_SNG-WOFI\\_REPORT\\_Key\\_Findings.pdf](https://www.sng-wofi.org/publications/2019_SNG-WOFI_REPORT_Key_Findings.pdf)

<sup>11</sup> For example, in Khabarovsk Krai, Law 130 of Khabarovsk Krai, dated November 23, 2011 “On state investment policy in Khabarovsk Krai” (as amended December 26, 2022) and Resolution of the Government of Khabarovsk Krai 55-pr, dated March 14, 2012 “On measures for the implementation of investment projects on the territory of Khabarovsk Krai on the terms of public-private partnership” are designed to fulfill a stimulating role in the development of MEs.

are aimed at analyzing program-targeted budget expenditures (Makarova, 2012). N.I. Yashina and colleagues came closest to the analysis of resources and a comprehensive assessment of the activity of local budgets (Yashina, Emelyanova, 2008; Yashina et al., 2012); they propose a methodology under which they consider the state of local finances in relation to the effectiveness of the organization of transfer policy of municipalities. However, they analyze the situation regarding municipal budgets as part of the consolidated budgets of RF constituent entities.

The methodology for analyzing the financial state of municipal budgets, based on the methodological approaches of the teams of N.I. Yashina and E.A. Ermakova, is given by N.Yu. Korotina (Korotina, 2014). She suggests evaluating the budgetary resources of municipalities and the results of their use by a significant number of budget parameters arranged into five groups. The parameters estimated include indicators of the balance of the local budget, financial independence, the orientation of municipal budget policy in the field of budget expenditures, budget sustainability, debt dependence of the municipality. However, the approach proposed by N.Yu. Korotina has not been verified both with regard to the formation of an integral indicator and the construction of a consolidated rating of the susceptibility of the municipal budget to state budget regulation measures. This did not allow assessing the effects of the tax and transfer policy of state bodies in relation to MEs or building a comparative rating of LSG bodies according to the extent of their reaction to the activities of state authorities in relation to promoting municipal development.

In general, the analysis of approaches to assessing the response of local budgets to measures of state stimulation of the development of MEs shows the widespread use of a multicriteria method for assessing the rationality of management decisions in the field of budgetary policy. At the

same time, the importance of the transition from a set of local coefficients to the construction of an integral coefficient is emphasized (Yashina et al., 2012); this will complement the set of comparable data characterizing certain aspects of the response of the budget of ME to the actions of state management bodies with a composite index comprehensively describing the reaction of the budget of the municipality to measures of state regulation of its development.

The main requirements that should be taken into account when constructing a composite index describing the activity of the local budget to the measures of state budgetary stimulation of the development of the municipality are reduced to the following points:

- 1) quantitative assessment of the response of the ME budget to the actions of state bodies in relation to promoting its development should be carried out based on the results of an analysis of the dynamics of changes in the integral indicator of budget activity, which comprehensively takes into account the local budgetary effects of state regulation of municipal development;

- 2) integral indicator of the comparative budget response to state influence from any municipality should take into account the level of resource provision of the municipalities' powers (the degree of coverage of the budget obligations of ME increases or decreases as a result of the influence of state authorities); dynamics of the financial independence of the municipality as a result of the actions of state agencies, reflected by the parameters of the condition of the municipality's tax system and the dynamics of the coefficient of self-balancing of the local budget; changes in the degree of financial provision of social obligations of local budgets as a result of state regulation of municipal development; extent of participation of local self-government bodies in the implementation of the concept of financing significant state events (the higher, the better) in their own territory;

3) quantitative assessment of the degree of activity of the municipal budget to the regulatory impact of state bodies is carried out by “consolidating” the set of considered indicators of the state of the budget system of ME into a single integral indicator. The analysis of existing methods of “consolidation” of local indicators into an aggregate integral indicator (rating, normalization of indicators, maximin method) indicates that the most rational in such a case is the maximin method (Barabash et al., 2014). The maximin method allows not only determining the rank (place) of the region among other municipalities by the considered local indicator, but also quantifying the value of the integral rating of the municipality by the totality of the considered parameters.

We should note that the existing rating estimates used to determine the comparative advantages of regions by various indicators<sup>12</sup> (Prokapalo, 2003; Korotina, 2014; Yashina et al. 2020) allow ranking regions by their place on the scale of selected indicators, but do not quantify the magnitude of the “gap” between ranks (places). From our viewpoint, in order to form an idea of the level of activity of the budgets of various municipalities it is not enough just to indicate the rank (place) of the municipality on the scale of the comparative activity of the municipality’s budget in relation to public policy measures. It is necessary to answer an important question for regional administrations: how is the budget of a particular MO “more active” in quantitative terms than the budget of its predecessor, by what local indicators can it be “caught up and overtaken” in terms of reaction to the impact of specific measures of state budgetary policy?

These requirements were implemented in our own approach based on the methodological

<sup>12</sup> Ratings of investment attractiveness of Russian regions. 2000–2001. Ekspert, 2001, 41, 97–120; Tirskikh T., Galieva G. (2022). Investment attractiveness of the regions: The state has supported the status quo. Available at: [https://www.raexpert.ru/researches/regions/regions\\_invest\\_2022/](https://www.raexpert.ru/researches/regions/regions_invest_2022/)

approaches of N.I. Yashina (Yashina, Emelyanova, 2008; Yashina et al., 2012), N.Yu. Korotina (Korotina, 2014) and M.N. Solomko (Solomko, 2019).

Due to the reasons mentioned above, the technique is implemented in two stages.

At the first stage, a system of local coefficients is calculated for each municipality, taking into account the main above-mentioned requirements for indicators that assess the response of the municipality’s budget to the impact of regulatory measures of state authorities.

At the second stage, for each municipality, using the maximin method, the local budget parameters obtained at the first stage are “consolidated” into an integral indicator of budget activity related to measures of state stimulation of regional development. Integral indicators are calculated for each municipality in each of the analyzed periods. The dynamics of changes in the integral indicators of budgetary activity obtained at the second stage quantitatively reflects the degree of reaction of the municipalities under consideration to budgetary measures of state regulation of municipal development.

A formal description of the methodology is presented below.

**At the first stage**, a number of local indicators are calculated for the budget of each specific municipality in each analyzed period, which to the greatest extent characterize the level of dependence of specific types of municipality activities on measures of budgetary activity of state authorities.

**The coefficient of resource provision of the powers of the municipality ( $C_{rpp}$ )** characterizes the degree of total coverage of the budget obligations of LSG bodies (expenses of the municipality) by the total revenues of the municipality:

$$C_{rpp} = R \times 100 / E, \quad (1)$$

where R – total amount of local budget revenues;  
E – total amount of local budget expenditures.

The value of  $C_{ipp}$  coefficient is influenced by the distribution of expenditure obligations formed in the budget system between the levels of government, the ratio of revenue receipts of the municipality and intergovernmental transfers, as well as the efficiency of the use of budget resources in general. Because of this, the coefficient characterizes the resource provision (execution) of the powers of the municipality. If the value of  $C_{ipp}$  tends to 100, then the risk of a problem of financial failure of the municipality's expenses is small.

**The coefficient of self-balance of the local budget ( $C_{sb}$ )** characterizes the balance of the municipal budget, the degree to which the total amount of budget expenditures for the implementation of its own powers (excluding subventions) is covered by its own revenues without taking into account the approved amount of gratuitous receipts (grants-in-aid and subsidies)<sup>13</sup>.

$$C_{sb} = [R - (GR_{gia} + GR_{subs})] \times 100 / (E - GR_{subv}), \quad (2)$$

where  $GR_{gia}$  – gratuitous receipts in the form of grants-in-aid;

$GR_{subs}$  – gratuitous receipts in the form of subsidies<sup>14</sup>;

$GR_{subv}$  – gratuitous receipts in the form of subventions;

$R$  – total amount of local budget revenues;

$E$  – total amount of local budget expenditures.

<sup>13</sup> It is taken into account that subsidies are allocated to the municipality for specific purposes and provide for co-financing from the region; subventions are directed to the fulfillment of federal (regional) powers delegated to the municipality (for example, payment of unemployment benefits, etc.), and only grants-in-aid can be freely used by the regions without regard to the higher level of government.

<sup>14</sup> We should note that other intergovernmental transfers cannot replace subventions, since they are provided for the performance of municipal powers rather than the powers of an RF constituent entity; but they are close to subsidies, although sometimes they do not involve co-financing. Here and further, unless specifically indicated, the amount of subsidies to the municipality includes other intergovernmental transfers. The latter are provided for financial support of public obligations arising from the exercise of the powers of local self-government bodies on issues of local significance.

The higher the value of  $C_{sb}$ , the more the municipality covers its own expenses with its own revenues. In fact, we are talking about a necessary, but insufficient condition for the financial independence of the local budget from higher levels of the budget system.

**The coefficient of financial independence ( $C_{fi}$ )** shows the effectiveness of territorial financial policy, other things being equal, and represents the share of local budget revenues that depends on the efforts of municipal authorities to increase tax revenues and municipal property.

$$C_{fi} = (TR + NTR) \times 100 / R, \quad (3)$$

where  $TR$  – tax revenues of the local budget;

$NTR$  – nontax revenues of the local budget;

$R$  – total amount of local budget revenues.

The higher the value of  $C_{fi}$ , the less the municipal authorities depend on the financial decisions of state bodies.

**The coefficient of direct social dependence of the budget ( $C_{dsd}$ )** characterizes the degree of financial provision of social obligations of the municipality. It shows the share of financial assistance from higher-level budgets in the revenues of the municipality.

$$C_{dsd} = (GR_{gia} + GR_{subs}) \times 100 / R, \quad (4)$$

where  $GR_{gia}$  – gratuitous receipts in the form of grants-in-aid;

$GR_{subs}$  – gratuitous receipts in the form of subsidies;

$R$  – total amount of local budget revenues.

$C_{dsd}$  evaluates the activity of the horizontal redistribution policy pursued by state bodies. When calculating it, the ratio of accepted grants-in-aid and subventions (rather than all intergovernmental transfers from higher-level budgets) and the total amount of local budget revenues is taken into account<sup>15</sup>.

<sup>15</sup> This is important, since the amount of subventions does not depend on the financial condition of the territory and does not affect the level of its financial independence, but is determined only taking into account the compensation of specific expenditure obligations of higher budgets delegated to the municipality level.

The more budgetary resources are accumulated at higher levels of the budget system for the subsequent equalization of the budgetary provision of municipalities, the higher the coefficient value, that is, the more the municipality depends on the alignment policy carried out within the framework of the country's budget system (Yashina, Emelyanova, 2008).

**The coefficient of overregulation of state support measures (financial assistance for the implementation of targets) ( $C_{ossm}$ )** shows the share of related transfers in the total amount of financial aid received from higher budgets.

$$C_{ossm} = GR_{subs} \times 100 / (GR_{gia} + GR_{subs}), \quad (5)$$

where  $GR_{gia}$  – gratuitous receipts in the form of grants-in-aid;

$GR_{subs}$  – gratuitous receipts in the form of subsidies.

When receiving grants-in-aid, the municipality does not impose any additional financial obligations on itself; but in order to receive a subsidy, the municipality must provide shared co-financing of the expenditure obligations specified by government agencies. In fact, subsidies are an indirect tool for financing regional policy. With their help, government agencies are trying to push the municipality to finance those expenses that are priority from the point of view of the regional center.

All other things being equal, the higher the value of the coefficient of overregulation of state support measures, the more the local budget and local self-government bodies participate in the implementation of the regional concept of financing activities significant for government agencies on their local territory. The low and decreasing value of the coefficient of overregulation means that the ME is increasingly becoming a passive recipient of grants-in-aid from the regional budget. The value of the coefficient is influenced by the regional financial policy of government agencies, which determine the types of intergovernmental transfers and the methodology of their distribution between MEs,

thereby laying down the degree of activity and the principles of horizontal distribution of aid between budgets.

**At the second stage**, for each municipality and each analyzed period, the calculated local indicators (1–5) are “consolidated” in two steps into an integral rating<sup>16</sup> of comparative activity of the municipal budget in relation to the measures of state budgetary policy (Barabash et al., 2014).

To do this, at the first step, using the maximin method, each of the calculated local coefficients (1–5) is normalized for the entire set of analyzed municipalities according to formulas (6–7). The normalized local ratings obtained are indicated by an additional index \* ( $C_{rpp}^*$ ,  $C_{sb}^*$ ,  $C_{fi}^*$ ,  $C_{dsd}^*$ ,  $C_{ossm}^*$ ).

The specific normalization by the maximin method of budget coefficients (1–5) at the first step is carried out as follows:

– if the maximum value of the calculated indicator of a particular municipality corresponds to the best position of the municipality in the list, as is typical of indicators (1–3) and (5), then

$$C^* = (Cur^{val.} - Min^{val.}) \times 100 / (Max^{val.} - Min^{val.}); \quad (6)$$

– if the maximum value of the ranked indicator corresponds to the worst position of the region in the list, similar to indicator (4), then

$$C^* = (Max^{val.} - Cur^{val.}) \times 100 / (Max^{val.} - Min^{val.}), \quad (7)$$

where  $Cur^{val.}$  – current value of the budget indicator for the municipality in question;

$Max^{val.}$  – maximum value of the budget indicator from the analyzed sample of municipalities;

$Min^{val.}$  – minimum value of the budget indicator from the analyzed sample of municipalities.

<sup>16</sup> The rating of a municipality is a quantitative expression of the comparative magnitude of a municipality's response to state budgetary policy measures, assessed in percentage points from the best response value among the entire set of analyzed municipalities; the rank of a municipality is the place that a municipality occupies among the many analyzed municipalities in terms of the degree of activity of response to state budgetary policy measures.

The local ratings of municipalities ( $C^*$ ) calculated by formulas (6–7) are understood as the magnitude of the lag (excess) of the regional value of each of the five evaluated indicators from the maximum (minimum) value of a specific normalized indicator (1–5) for the entire set of analyzed municipalities. This gap – the amount of lag or excess of the parameter value of a particular municipality over the maximum (minimum) value of this parameter among the totality of the considered budgets of municipalities – is measured in percentage points (p. p.) from 0 to 100, which helps to place municipalities on a normalized line of values of budget coefficients (1–5) for the totality of the analyzed municipalities.

At the second step of the second stage of the methodology, using percentage points of the lag of the normalized coefficients from the best (worst) value among the indicators for the entire set of municipalities, it is possible to calculate a comparative integral rating of the activity (reaction) of the municipality to the measures of state budgetary policy ( $C^*_{int}$ ).

The comparative integral rating of the activity of municipalities in relation to measures of state budgetary policy is calculated by formula (8) as the sum of its local normalized ratings ( $C^*_{rpp}$ ,  $C^*_{sb}$ ,  $C^*_{fi}$ ,  $C^*_{dsd}$ ,  $C^*_{ossm}$ ) divided by the total number of evaluated ratings (in our case – 5):

$$C^*_{int} = (C^*_{rpp} + C^*_{sb} + C^*_{fi} + C^*_{dsd} + C^*_{ossm}) / 5. \quad (8)$$

The comparative integral rating of budget activity ( $C^*_{int}$ ) obtained as a result of calculations for a particular municipality will be in the range from 0 to 100 p.p. Moreover, the closer the calculated rating is to 100 p.p., the higher the values of local coefficients (1–5) for this particular ME and the more active the reaction of this municipality to the regulatory impact of the state budget politics in comparison with other municipalities. In fact, ranking municipalities by the magnitude

of the comparative integral rating helps not only to determine the magnitude of the rating, but also the place (rank) of each municipality on the normalized scale of municipalities by the magnitude of the response of the ME to state budgetary policy measures.

### Results and discussion

The implementation of any methodological approach requires an appropriate information base. We are aware that the applied results in terms of assessing the response of MEs to state budgetary policy measures are important both for the governments of specific constituent entities of the Russian Federation and for a comparative assessment of the reaction of municipalities of a number RF constituent entities to the regulatory impact on the part of government agencies.

When using this approach, the regional government can obtain results that allow us to make a conclusion concerning the comparative effectiveness of state budget policy measures (grants-in-aid, subsidies, subventions, other transfers) in relation to the policy of stimulating the development of a particular type of municipalities (MD or UO).

However, from the point of view of the federal level of government, in modern conditions of permanent budget deficit, applied and scientific research requires a more aggregated approach to determine which local budgets of RF constituent entities respond more actively to state budget policy measures. In this case, when assessing the rating of municipalities, the degree of fragmentation of the grid of municipal units in the RF constituent entity is not as important as the availability of a comparable homogeneous database of municipal budgets for all constituent entities of Russia participating in the analysis. In this study, a similar macroapproach was implemented using the example of the Far Eastern Federal District.

Verification of the methodology was carried out on the materials of the Federal Treasury so as to operate with data on the consolidated budgets of municipal districts and urban okrugs. Taking into account that information on the state of local budgets of RF constituent entities for 2011–2020<sup>17</sup> is presented by the Federal Treasury in an aggregated form for all MDs and UOs of each RF constituent entity<sup>18</sup>, calculations were performed for the consolidated budgets of municipal districts and urban okrugs of each Far Eastern constituent entity. The methodology was tested for 164 MDs and 66 UOs of the Far Eastern Federal District. Such an approach makes it possible to determine in which type of ME (municipal districts or urban okrugs) and in which constituent entity of the Federation the budget is more sensitive to the impact of state budgetary policy.

A uniform three-digit scale was used to compare the integral ratings of the activity of budgets of Far Eastern municipalities related to measures of state policy aimed at promoting municipal development (*Tab. 1*).

Such an approach makes it possible to distinguish three groups of municipalities in Russia's Far Eastern constituent entities, differing in the rating and, as a consequence, in the nature of the response

of the ME's budget to measures of state regulation of municipal development.

Group I with a rating value from 66.1 to 100 percentage points included municipalities that showed the greatest response to measures of state budgetary regulation among the entire set of analyzed budgets of Far Eastern municipalities. Group II (33.1–66 p.p.) includes MEs, which are characterized by an average comparative level of reaction to measures of state budgetary policy. Group III (0–33 p.p.) includes municipalities that are relatively neutral to government incentive measures and that show the least pronounced response to state influence among the budgets of all Far Eastern municipalities.

We emphasize that the value of the integral activity rating characterizes not the absolute magnitude of the reaction of the municipal budget to state support measures, but the relative one, showing by how many percentage points this municipality reacts more actively to state intervention in comparison with other municipalities within the federal district.

The calculated values of the integral ratings characterizing the activity of the budgets of Far Eastern MEs in relation to budgetary measures of state regulation are presented in *Table 2*.

Table 1. Intervals of values of the integral rating of the activity of budgets of municipalities in relation to state regulation measures

Group	The nature of the reaction of municipalities to budgetary measures of state regulation	Value of the integral rating, p.p.
I	Active response to measures of state budgetary regulation	100–66.1
II	Average response to measures of state budgetary regulation	66–33.1
III	Neutral (weak) response to measures of state budgetary regulation	33–0

Note: best rating indicator = 100 p.p.  
Source: own compilation.

<sup>17</sup> Since 2021, the Federal Treasury has stopped publishing data on the state of local budgets in the public domain.

<sup>18</sup> See: Information on the execution of the consolidated budget of the RF constituent entity and the budget of the territorial state extra-budgetary fund. Available at: <https://roskazna.ru/ispolnenie-byudzheto/konsolidirovannye-byudzhety-subektov/>

Table 2. Dynamics of calculated integral ratings of activity of budgets of Far Eastern municipalities to measures of the state budgetary policy for stimulating municipal development, p.p.

RF constituent entity	2011		2015		2020	
	MD*	UO**	MD	UO	MD	UO
Republic of Buryatia	29.4	76.0	34.6	67.0	29.9	42.1
Republic of Sakha (Yakutia)	51.4	60.7	34.1	67.4	41.8	80.5
Primorsky Krai	74.6	53.6	64.3	66.2	91.0	81.6
Khabarovsk Krai	62.6	79.7	53.8	70.1	46.1	56.0
Amur Oblast	30.3	28.8	30.0	30.9	56.0	70.9
Kamchatka Krai	40.5	46.1	37.5	60.1	45.7	84.5
Magadan Oblast ***	34.2	39.6	28.8	48.4	-	42.5
Sakhalin Oblast ***	14.8	9.8	52.4	30.6	-	27.0
Jewish Autonomous Oblast	54.1	86.8	36.0	64.0	45.2	72.0
Chukotka Autonomous Okrug	38.4	77.3	8.5	38.7	24.2	31.6
Zabaikalsky Krai	54.5	61.1	55.7	67.0	43.1	49.1

\* MD – municipal district  
\*\* UO – urban okrug  
\*\*\* By 2020, as a result of the reform of the structure of municipalities, 18 UOs were functioning on the territory of the Sakhalin Oblast, and 9 UOs were functioning on the territory of the Magadan Oblast.  
Note. The best indicator of the integral rating (100 percentage points) corresponds to the indicators of the ideal municipality. The ideal municipality is the one that, for each of the five estimated local parameters (1–5), shows the best value among the many budgets of the Far Eastern municipalities under consideration. In other words, the closer the value of the integral rating to 100 p. the higher is the place (rank) of the budget of this municipality in the aggregate budgets of the municipalities of the Far Eastern Federal District in terms of the activity of response to budgetary measures of state support for municipal development.  
Calculated according to: Information on the execution of the consolidated budget of the RF constituent entity and the budget of the territorial state extra-budgetary fund. Available at: <https://roskazna.ru/ispolnenie-byudzheta/konsolidirovannye-byudzhety-subektov/>

The results of the calculations show a sufficiently high polarization and dynamism of the values of the integral ratings of the response of Far Eastern MEs to budgetary measures of state regulation. The most significant influence on the condition and dynamics of the integral activity rating is exerted by the magnitude of indicators (3–5). We are talking about the coefficients of financial independence, the direct social burden of the local budget and the coefficient of overregulation of state support measures (financial assistance for the implementation of targets).

The data in Table 2 show that the budgets of urban okrugs react much more actively to state support measures, since the values of the integral rating of UOs in most of the analyzed RF constituent entities are higher than the values of the ratings for MDs.

The budgets of UOs in the Far Eastern Federal District not only react more actively to state measures in comparison with the budgets of MDs, but throughout the analyzed period they formed Group I – the group of the most active municipalities in terms of response of local budgets to state regulation measures.

In 2011, Group I with an integral rating of 66.1–100 percentage points included the budgets of four RF constituent entities, while in 2015 and 2020 – five. As for the municipal districts, only the budgets of Primorsky Krai MDs twice demonstrated a rating sufficient to enter Group I – 74.6 percentage points in 2011 and 91 percentage points in 2020 (see Tab. 2).

We should note that municipal entities of Primorsky Krai throughout the analyzed period occupied leading positions in terms of the active

response of their budgets to the measures of state budgetary policy, showing the highest values of integral ratings among the budgets of UOs and the budgets of MDs within the federal district. In fact, this makes it possible to consider Primorsky Krai a leader in the effective response of the budgets of the region's MEs to measures of state stimulation of municipal development.

In contrast to the situation in Primorsky Krai, municipalities in Chukotka Autonomous Okrug (ChAO) were clear outsiders among the Far Eastern municipalities. The MEs of Chukotka showed a “fading” reaction of local budgets to state support measures throughout the analyzed stage. The activity ratings of both the budgets of UOs and the budgets of MDs in ChAO dropped from the level of Group I–II in 2011 to the level of Group II–III in 2015, being among the lowest in Group III in 2020.

The calculations show (*Tab. 3*) that the affiliation of a municipality to an urban okrug does not

always automatically mean a more significant budget response to regulatory impact in comparison to that of a municipal district. Thus, in seven of the eleven Russia's Far Eastern constituent entities, the budgets of MDs demonstrated an average or above average level of response to state incentive measures in the Far Eastern Federal District<sup>19</sup>. In practice, this means that the budgets of the Far Eastern MDs throughout the analyzed period acted as a kind of “anchors for the stabilization of budgetary activity”.

During the analyzed period, a special situation developed regarding the budgets of the Sakhalin and Magadan oblasts. At the turn of 2016–2020, during the reform of local self-government, these regions switched from a two-level system of local self-government (“municipal districts – settlements”) to a single-level one, when all municipal districts of these regions were transformed into urban okrugs (9 in the Magadan Oblast and 18 in the Sakhalin Oblast, respectively).

Table 3. Distribution of budgets of Far Eastern municipalities by groups of values of integral activity ratings in relation to state regulation measures

RF constituent entity	2011			2015			2020		
	I	II	III	I	II	III	I	II	III
Republic of Buryatia	UO*		MD	UO	MD			UO	MD
Republic of Sakha (Yakutia)		UO, MD		UO	MD		UO	MD	
Primorsky Krai	MD**	UO		UO	MD		MD, UO		
Khabarovsk Krai	UO	MD		UO	MD			MD, UO	
Amur Oblast			MD, UO			MD, UO	UO	MD	
Kamchatka Krai		MD, UO			MD, UO		UO	MD	
Magadan Oblast		MD, UO			UO	MD		UO	
Sakhalin Oblast			MD, UO		MD	UO			UO
Jewish Autonomous Oblast	UO	MD			MD, UO		UO	MD	
Chukotka Autonomous Okrug	UO	MD			UO	MD			MD, UO
Zabaikalsky Krai		MD, UO		UO	MD			MD, UO	

\* UO – urban okrug; \*\* MD – municipal district.  
Source: compiled according to the data in Tables 1 and 2.

<sup>19</sup> We are talking about the municipal districts of Primorsky, Khabarovsk, Kamchatka and Zabaikalsky krajs, the Jewish Autonomous and Sakhalin oblasts, the Republic of Sakha (Yakutia).

In 2015, budgets of UOs in the Magadan Oblast had an activity rating of 48.4 percentage points, MDs – 28.8 percentage points, in the Sakhalin Oblast – 30.6 and 52.4 percentage points, respectively. That is, from the point of view of the comparative reaction to the measures of state regulation in the Magadan Oblast, the activity ratings of the budgets of UOs were significantly higher than those of MDs; the situation in the Sakhalin Oblast was reverse.

According to 2020 data, the change of municipal district to urban okrug in the Magadan and Sakhalin oblasts led to a decrease in the consolidated rating of the activity of the budgets of urban okrugs (see Tab. 2). At the same time, in the Magadan Oblast, the budgets of urban okrugs, while retaining their place in Group II and demonstrating an average response to the regulatory effects of state budget policy, showed a quantitative deterioration in the value of the integral rating itself (from 48.4 p.p. in 2015 to 42.5 p.p. in 2020). In the Sakhalin Oblast the situation regarding the response of the budgets of new urban okrugs to state measures of influence has deteriorated significantly over the same time. In 2020, in the Sakhalin Oblast, the budgets of the UOs demonstrated complete neutrality to measures of state influence and, as a result, the worst rating (27 p.p.) among Far Eastern MEs.

The estimates obtained show that the transition from a two-level to a single-level system of municipalities did not increase the response of local budgets to state regulation measures in comparison with the budgets of other municipal entities of the Far Eastern Federal District.

The revealed significant polarization of municipal budgets in the Far Eastern Federal District raises the question for regional governments about what is more effective – to maintain a two-level structure of municipalities (“municipal district – settlements”) in the RF constituent entity or to

abandon municipal districts in favor of urban okrugs? The issue is debatable, requiring calculations and substantiation for each specific case and constituent entity of the Russian Federation (Puzanov, 2021; Barabash, Leonov, 2023).

We should note that the comparative reaction of local budgets to state impact measures in the municipalities of the Far Eastern Federal District changed quite dynamically over the analyzed period (see Tab. 2, 3), and the surplus of the regional budget was not a guarantee of an active response of the budgets of municipalities of this RF subject to state support measures; the situation was rather the opposite. Thus, in the Sakhalin Oblast, which is characterized by surplus budget, the budgets of municipalities show mostly neutral, if not indifferent, response to the condition and dynamics of state policy measures in comparison with the budgets of other Far Eastern municipalities. However, more often the Far Eastern regions show the opposite situation, when the municipal budgets of RF constituent entities with financially problematic budgets actively respond to state support measures. Moreover, this process is observed both in the northern (Republic of Sakha (Yakutia), Kamchatka Krai) and in the southern (Jewish Autonomous Oblast and Amur Oblast, Primorsky and Khabarovsk krais) regions of the Far East.

Over the ten analyzed years, a relatively high rating of the stability of the budgets of MEs in relation to state budget support measures was noted in Primorsky, Khabarovsk and Zabaikalsky krais and in the Jewish Autonomous Oblast. The budgets of municipalities in the Republic of Sakha (Yakutia), the Amur Oblast and Kamchatka Krai demonstrated an improvement in the response to state regulation measures in comparison with other municipalities of the Far Eastern Federal District. At the same time, the situation has relatively worsened for the budgets of municipalities of the Republic of Buryatia and Chukotka Autonomous Okrug; municipalities of

the Magadan and Sakhalin oblasts have reformed their local self-government systems over the years of observation, switching to a single-level type that includes only urban okrugs, and in general have worsened budget indicators in terms of response to measures of state stimulation of municipal development.

We should take into account that in the process of formation and development of local self-government, most countries face financial problems<sup>20</sup>, and the issue is often solved by improving the tax sphere. The target areas and prospects for strengthening the financial foundations of ME functioning include improving the tools for developing the revenue base of local budgets in relation to personal income tax, property tax revenues, taxation of small businesses (Pechenskaya-Polishchuk, 2020, p. 80). This also applies to the problem solved in a significant number of foreign countries, which concerns the redistribution of personal income tax from the place of work to the place of residence of the taxpayer after the initial payment of tax at the place of work (Kuznetsova, 2006). It is necessary to pay attention to the proposals made by the scientific community on giving the status of “local” to the entire group of property taxes, since it is LSG bodies that can effectively influence their administration (Leonov, 2021).

### Conclusions

The approach proposed in the paper allows us to quantify the integral rating of municipalities’ budget activity, as well as to determine the rank (place) of municipalities on the normalized scale of values of the comparative activity of budgets of MEs in terms of state budget policy measures.

Verification of the methodology was carried out on the example of municipalities of the Far Eastern Federal District for 2011–2020.

It was revealed that in the Far Eastern Federal District, throughout the analyzed period, the group of municipalities that were most active in terms of their budgets’ response to state regional policy measures was formed mostly by UOs.

The budgets of MDs in the Far Eastern Federal District reacted less to state support measures. However, throughout the entire period, in seven of the eleven Far Eastern constituent entities of Russia, the budgets of MDs showed an average or above average level of response to government incentive measures, acting as a kind of “anchors of stabilization of budgetary activity” for their municipalities.

Local budgets of the Far Eastern constituent entities of Russia with financially problematic budgets are more actively responding to state support measures. Moreover, this process is observed both in the northern (Republic of Sakha (Yakutia), Kamchatka Krai) and in the southern (Jewish Autonomous Oblast, Amur Oblast, Primorsky and Khabarovsk krais) regions of the Far East of Russia.

The budgets of municipalities in Primorsky Krai throughout the analyzed period occupied a leading position among MEs of the Far Eastern Federal District, demonstrating the highest values of integral ratings of budget activity for UOs and MDs. The municipalities of Chukotka Autonomous Okrug became obvious outsiders with a “fading” reaction to state support measures. The ratings of budget activity of UOs and MDs in Chukotka Autonomous Okrug dropped from the level of group I–II in 2011 to the level of group III in 2020.

It is shown that the formation of single-level systems of local self-government in the Magadan and Sakhalin oblasts did not contribute to the growth of activity of the budgets of newly formed

<sup>19</sup> Report of the World Observatory on Subnational Government Finance and Investment – key findings. Available at: [https://www.sng-wofi.org/publications/2019\\_SNG-WOFI\\_REPORT\\_Key\\_Findings.pdf](https://www.sng-wofi.org/publications/2019_SNG-WOFI_REPORT_Key_Findings.pdf)

urban okrugs. This poses a dilemma for regional governments – to maintain a two-level structure of municipalities in the region (“municipal district – settlements”) or to abandon municipal districts in favor of urban okrugs and a single-level system of LSG? This issue is debatable; it requires calculations and justifications for each specific case and constituent entity of Russia.

Scientific significance of the performed research lies in the development of a methodology for quantifying the comparative activity of local budgets in terms of measures of state support for municipal development. Verification of the methodology on the example of the municipalities of the Far Eastern Federal District showed that the proposed approach has real practical significance.

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