center
for advanced
governance

Public policy report

From election to appointment. Consequences of the municipal management reform in Russia

Authors

Kirill Kasantcev
Aleksandra Rumiantseva

Editor

Mikhail Komin

Translator

Artyom Kachurin

Moscow, 2021

Kazantcev K., Rumiantseva A. «From election to appointment. Consequences of the municipal management reform in Russia» / ed, by Komin M.; Center for Advanced Governance, Moscow, 2021.

Published since 2019
ISSN 2713—2137 online

Center for advanced governance presents an analytical report on the implications of the municipal governance reform in Russia, executed between 2009 and 2018. A vital element was the transition from an elected mayor model to models of a city manager and an appointed mayor. Based on the collected data on the socio-economic characteristics of municipalities, the report evaluates the achievement of the model's initial effect: the improvement of municipal governance quality when carried out by city managers in comparison with elected mayors.

The Center for Advanced Governance (CAG) is a think tank founded in 2018 to promote the principles of evidence-based policy making in Russia and to support, develop, and implement institutional reforms to improve the efficiency of the system of governance in Russia.

CAG studies the problems of public administration and governmental issues, writes analytical report, reviews, and policy papers, and presents the results of its research to government agencies, representatives of business, academic, and expert communities.

Contacts:
Moscow, Gazetnyi pereulok, 3-5
Non-profit & non-governmental organization
«Center for Advanced Governance»

E-mail:
info@cpur.ru
m.komin@cpur.ru

https://www.cpur.ru/

CONTENTS

EXECUTIVE SUMMARY

In 2003, Russia adopted Federal Law No. 131-FZ, "On the General Principles of Organization of Local Self-Government in Russia"[1] (hereinafter — Federal Law No. 131-FZ). This document set in motion the reform **a municipal management reform**. The reform itself was two-folded. On the one hand, the work of municipal divisions (hereinafter — MD) has been standardized, and their classification has been refined; new definitions for governing bodies of local self-government appeared (hereinafter — LSG), boundaries have been demarcated. On the other hand, Federal Law No. 131-FZ and other regulatory legal acts adopted in its development endowed the municipality with the right to change the management model of the Moscow region. Instead of an elected mayor, a city manager could stand at the head of the local administration, who was not directly elected by the population but received power due to selection by a competition commission. Later, this model evolved into an appointed mayor where the municipality and local administration are headed by the same person appointed by a competition commission.

This study attempts **to evaluate the consequences of this part of the LSG reform in Russia**: the transition of most municipalities from the "elected mayor" model to the «city manager» and «appointed mayor» models. The assessment was related to **verification of the achievement of two effects expected of the model change**:

- creating conditions **for gradual integration of local self-government into the Russian rigid and unified system of public administration** through a decreasing autonomy of municipalities and their orientation towards greater cooperation with regional authorities;
- **improving municipal administration's efficiency** through greater professionalization of city managers and appointed mayors compared to the elected ones.

The Difference-in-difference method is employed to assess quantitative data. This method helps to pursue how the change in municipal management style influenced **municipalities' socio-economic indicators**. Also, the factor under our scrutiny was deliberately separated from others (a general state of the municipal economy, *resource availability*, and demographic fluctuations).

For the assessment, two types of data were collected and processed:

- **dynamics of socio-economic indicators in Russian municipalities** in the period from 2006 to 2018 (source — Rosstat Municipal Indicators Database);
- **dynamics of changes in the management models of municipalities** («elected mayor,» «city manager,» «appointed mayor») from 2006 to 2018 (source — charters of municipalities from the portal «Regulatory Legal Acts in the Russian Federation»[2]).

---

1 Federal Law, 06.10.2003 № 131-FZ «On the General Principles of Organization of Local Self-Government in Russia». URL: *http://base.garant.ru/186367/#ixzz6GzDhtjMJ*

2 The Research Center for Legal Information under the Ministry of Justice of the Russian Federation provided texts of charters

The results of the assessment led to the following conclusions.

1. **The transition from the "elected mayor" model to the model with "city manager" and "appointed mayor" affects socio-economic indicators of a municipality.** This influence is evident in indicators characterizing the pattern of municipal budget expenditures, employment, and wages in sectors associated with the municipal level of government and some indicators of the efficiency of economic and enterprise management at the municipal level.

2. **The transition from the "elected mayor" model to the model with "city manager" and "appointed mayor" entailed a decrease in municipal autonomy and reinforced their dependence on the regional government, and solidified local power hierarchy (between the regional government and municipalities).** Alterations in the governmental structure imply modifications of financial autonomy indicators:

   - the overall spending of municipalities declines (by 2.1-6.7%);
   - with an overall reduction in expenditures, their structure in municipalities remains almost unchanged; drops take place on average in all areas in a similar way;
   - overall employment in organizations of municipal ownership decreases (by 2.7–6.4%);
   - the share of governmental transfers to municipal budgets steadily decreases (by 11%).

3. **There was no evidence supporting the hypothesis that a shift to the system with a city manager and elected mayor ameliorated public services performance in municipalities.** Some characteristics of indicators (delineated below) conduce to evaluate the quality of municipal economic management:

   - there are no statistically significant changes in indicators of tax and non-tax revenues, as well as earnings from municipal property management;
   - investments in fixed assets of municipal-owned organizations decreases;
   - there are no statistically significant changes in fixed assets investments by local organizations.
   - There are no statistically significant positive dynamics in two key areas: alleviating the poor water supply system and increasing the number of beneficiaries secured accommodation due to social programs.

INTRODUCTION[3]

Research context

In the annual Presidential Address to the Federal Assembly of 2020, Vladimir Putin called for "constitutional recognition of a uniform system of public authority, [and] facilitation of effective interaction between state and municipal bodies"[4]. In March 2020, the State Duma enacted bill No. 885214-7, "On improving the regulation of certain issues of the organization and functioning of public authorities", which amended the Constitution of the Russian Federation[5]. The amendments were confirmed by the results of the "All-Russian vote" on July 1, 2020[6]. A key amendment concerning municipal governance was introduced in paragraph 3 of article 132: **"Local self-government bodies and state authorities form part of a uniform system of the Russian Federation and interact to meet the needs of the local population effectively."** Experts interpret the term "uniform system of public authority" as a logical corollary of the policy aimed at weakening the autonomy of local self-government and shifting the balance in managerial decision-making from the local to regional federal authority[7].

Following the European Charter of Local Self-Government[8], which the Russian Federation signed in 1998, the Russian government supported municipalities to discourage dependency from regional and federal authorities and contribute to the development of local self-sufficiency. However, the trend has altered since the 2000s. In 2003[9], Federal Law No. 131-FZ was promulgated[10]. It purported to address **two pressing issues of previous years**:

1) to alleviate perpetuating **conflicts between governors and mayors of large (frequently capital) cities** within one region;

2) to streamline **the complex and heterogeneous system of municipal management**.

The second problem was solved by *adopting* **the new municipal classification and more elaborate definitions for the governing bodies of LSG**. According to the aforementioned classification, the territories were divided into five types of municipalities: municipal districts, urban districts, inner-city regions of cities of federal significance, and urban and rural settlements as constituent parts of municipal districts.

---

3 The authors present their sincere gratitude to A.S. Smirnov, Yu.N. Datsenko, M.A. Zavadskaya, A.N. Maksimova, S.N. Shkel, S.P. Sosnina, P.V. Panov, E. Marquart.

4 Presidential Address to the Federal Assembly. 15.01.2020. URL: *http://kremlin.ru/events/president/news/62582*

5 On improving the regulation of certain issues of the organization and functioning of public authorities. URL: *https://sozd.duma.gov.ru/bill/885214-7*

6 URL: *http://www.cikrf.ru/analog/constitution-voting/*

7 See "What constitutional amendments change for the future of local self-government?" // Vedomosti. 2020. 24. April. URL: *https://www.vedomosti.ru/opinion/articles/2020/01/24/821369-popravki-v-konstitutsiyu*

8 European Charter of Local Self-Government. URL: *https://rm.coe.int/168007a088*

9 The law came into effect completely on 01.01.2009.

10 Federal Law 06.10.2003 No. 131-FZ, "On the General Principles of Organization of Local Self-Government in Russia". URL: *http://base.garant.ru/186367/#ixzz6GzDhtjMJ*

The introduction of the city manager model (and later of the appointed mayor) into the municipality's management purported to solve the first problem. As a consequence, it reinforced the ability of governors to influence local self-government. If earlier the population elected heads of municipalities, now the municipal executives could be elected from among candidates promoted by a commission formed with the involvement of regional level's federal authorities. **Thus, the shift from direct elections of municipal executives to appointed city managers was supposed to confine municipal governments to persuade municipal administration to collaborate with regional authorities and ultimately integrate LSGs into the uniformed system of Russian public administration[11].**

The Russian political elite has repeatedly underscored *management efficiency* as an essential consequence of the model's modification.[12] Several regional laws[13] enacted *during the reform* referred to **enhancing municipal efficiency due to the government model change**. It was assumed that the appointment of heads of municipalities by competition (and not through electoral procedures) would ensure *increasing coherence* and complementarity among municipal and regional authorities to reinforce their mutual efficiency since appointed mayors were deemed *better qualified* for complex management tasks.

This report evaluates the consequences of municipal reforms launched by Federal Law No. 131-FZ and other regulatory legal acts adopted in its development and strives to investigate if **the electoral model change (from elected mayors to city managers and appointed mayors) precipitated a decrease in municipal autonomy while simultaneously increasing the efficiency of management of municipalities**.

Research design

The form of election of heads of municipalities affects municipal management efficiency through the following mechanism:

- municipal executive model change (from direct elections to appointed officials) provided **modified impetus and *impact to action*** for heads of municipalities by employing a new *accountability framework*;
- the adjusted system of stimulus engendered changes in **socio-economic policies** municipal executives tend to pursue;
- the policy modifications impact on dynamics of some **socio-economic and management indicators** within a given municipality.

The reform initially implied a faster growth of socio-economic and management rates. In order to assess the tangible result of the policy pursued, it is necessary

11 Gel'man V.Y., Ryzhenkov S.I. Local regimes, urban governance and «power vertical» in contemporary Russia // Politicheskaya expertiza: POLITEKS (Political expertise). 2010. T. 6. № 4. pp. 130—151 (in Russian).

12 See: Presidential Address to the Federal Assembly. 12.12.2013. URL: *http://kremlin.ru/events/president/news/19825*; Local reform needs to be continued // Kommersant. 2014. 27 November. URL: *https://www.kommersant.ru/doc/2619682*

13 See: Explanatory note to the draft of the Sverdlovsk Region law "On Amendments to Article 5 of the Law of the Sverdlovsk Region" On the Election of Local Self-Government Bodies of Municipal Formations Located on the Territory of the Sverdlovsk Region". URL: *http://zsso.ru/upload/site1/f05iAP9G2C.pdf*

to trace **the causal relationship between the change in the municipal management model and subsequent fluctuations of municipal socio-economic and management rates**.

The Difference-in-Differences method was employed as the primary method. This method can detect the direction of the cause-and-effect (causal) relationship based on the differences between the control and experimental groups with a significant number of unobservable factors. The control group contains those municipalities where the change in the management model did not take place (where the model of an elected mayor remained); the experimental group consists of municipalities that changed the model of an elected mayor to that of a city manager or an appointed mayor between 2009[14] and 2018[15].

Three types of indicators were studied in the application of the method for two groups:

- dynamics and structure of municipal budget expenditures ;
- the level of employment and wages in sectors and organizations associated with the municipal level of government;
- indicators of the overall efficiency of municipal economic and enterprise management.

The research design described above made it possible to establish (1) presence of a direct connection between the change in the management model of municipalities and municipal socio-economic and management indicators; (2) characteristics of the identified connection in terms of municipal dependency of the regional government; (3) efficiency of municipal administration under altering conditions.

Data

Difference-in-Differences estimation and sample construction required two types of data:

- the dynamics of social, economics and administrative indicators in Russian municipalities in the period from 2006 to 2018;
- the dynamics of administrative structure (in particular, changes in the selection model of the head of MD's administration) in Russian municipalities from 2005 to 2018.

The most complete description of the characteristics of Russian municipalities is contained in the Municipal Indicators Database (BDMO), gathered by Rosstat. BDMO contains information about more than 500 indicators for the period from 2006 till now. However, the representation format of the data on the website makes it unsuitable for the analysis. Thus, **the parsing method** was

14 The lower boundary for model switch (2009) is chosen because of data availability concerns.

15 *Note.* For detailed description of the research design see section 2.2.

used to assemble data for the study needs. The data was pre-processed: data entry errors were corrected (for example, wrong position of the decimal sign), the names of the municipalities were standardized, missing values in persistent variables or variables that have clear trend were filled by the linear interpolation. The aforementioned procedures allowed formation of the most complete times series for all Russian municipalities[16].

Another piece of data necessary for the research is **information about models of governance used in Russian municipalities** (in particular, the methods of head of administration selection) in 2005-2018. **The charters of municipal divisions** from the web portal "Regulatory Legal Acts in the Russian Federation"[17] were used to obtain the information. The Research Center for Legal Information under the Ministry of Justice of the Russian Federation provided texts of charters. The total number of textual documents exceeded 370 000. The **automated algorithm of regular words and expression recognition** was developed to retrieve data from the texts. The random sample of 100 charters was used to formulate regular expressions that allowed one to distinguish one model of governance from another. Then, the automated search of the formulated regular expressions in the texts determined models for 93% of the municipalities from 2005 to 2018. The information for the remaining 7% of municipalities was hand-coded.

The application of the algorithm of regular expression search resulted in yearly data on models of governance used in MD for all municipal and urban districts in 2006–2018[18]. For the research purposes the variable describing the model of governance in MD at the beginning of the calendar year was created. This variable gives an opportunity to determine whether the switch from one model to another has occurred or not, and if yes when it has occurred.

Structure of the report

The chapter "Municipal level of government in Russia: management models and key characteristics" reviews contemporary models of self-government, describes those that existed in the Russian Federation from 2006 to 2018 and compares some essential for the study of economic and management characteristics of today's local self-government bodies.

The chapter "Assessment of the impact of models of LSG organization on the municipal socio-economic indicators" describes a study's theoretical background, substantiates the relevancy of the method and the municipal socio-economic indicators recruited for the analysis. This chapter also presents the main findings of the evaluation.

16 «Municipal Indicators Database». Source: Rosstat; processing: Инфраструктура научно-исследовательских данных, "CAG", 2020. (URL: *https://data-in.ru/data-catalog/datasets/115/*)

17 Web portal "Regulatory Legal Acts in the Russian Federation". URL: *http://pravo.minjust.ru/*

18 Because of the study purposes, the final sample consists of municipal and urban districts that held direct elections of mayors or heads of administrations in 2008.

1. THE MUNICIPAL LEVEL OF GOVERNMENT IN RUSSIA: MANAGEMENT MODELS AND CRITICAL CHARACTERISTICS

1.1. Contemporary organizational models of local self-government

The study's basic assumption stipulates that the relationship between the change in the management model in municipalities and the socio-economic indicators of this municipality depends **on the model of political accountability and a set of managerial incentives among the key actors of local government**. Therefore, to clarify how this or that accountability model works, depending on the institutional structure of LSG, it is necessary to describe the typical structure and models of governance of a municipal formation that are widespread today.

The typical structure of LSG bodies usually consists of the following elements:

- ***a representative body* of the local *government* of a municipal settlement**: an institution of the legislative power of municipalities, for example, a council of deputies, a local duma;
- **a chairman of a representative body of power (speaker)**: a person who organizes activities of a representative body; most often (s)he is elected by a representative body (deputies) from among its members;
- **an administration of a municipal formation**: an executive and administrative body of the MD, an institution of executive power;
- **a head of administration**: a person who organizes activities of a municipal administration; namely (s)he is a chief of the executive branch of the MD;
- **a head of the municipality**: the highest official of the municipality mandated to resolve the *local-scale issues*.

The model of municipal governance is *defined* formally *by* the relationship between the above-mentioned actors of local self-government and the established methods of obtaining power (direct elections, election from among deputies, or appointment).

The present-day version of Federal Law No. 131-FZ epitomizes **five models of municipal management**. However, **only four of them** have become widespread. The differences between these four models can be described using two test questions (criteria).

- Is there a direct election of a municipal head?
- Who holds the position of the head of the MD: head of administration or chairman of a representative body of power (speaker)?

Answers to these two questions also allow us to determine the predominant model of political accountability within the framework of this model of municipal management (that is, to answer the question to whom the head of the MD and the head of the MD administration are primarily accountable). The classification of models based on these two questions and some additional ones is delineated in Table 1.

Table 1. Basic types of governance models in MD

Model	Are there elections held?	Who holds the office of the head of MD / head of administration?	What is the selection procedure?	To whom are they accountable	The level of autonomy of MD
Model «elected mayor» (introduced before Federal Law No. 131-FZ).	Yes	The head of MD is the head of administration	Election	High level of political accountability of the head of MD to citizens	High
Model «city manager» (introduced by Federal Law No. 131-FZ in 2003).	No	The head of MD is a chairman of a representative body..The head of administration is "appointed city manager"	The head of MD is selected by the representative body..The head of administration is selected by the competition commission	High level of accountability to representative body and regional authorities.. Low level of accountability to citizens	Moderately low
Model «city manager + elected speaker» (introduced by Federal Law No. 131-FZ in 2003).	Yes	The head of MD is a chairman of a representative body..The head of administration is "appointed city manager"	The head of MD is elected..The head of administration is selected by the competition commission	High level of accountability to representative body and regional authorities;.. Low level of accountability to citizens because head of administration possess all resources	Moderately low
Model «appointed mayor» (introduced by amendments to Federal Law No. 131-FZ, made by Federal Law No. 165-FZ in 2014).	No	The head of MD is the head of administration	Selection by the competition commission	High level of accountability to representative body and regional authorities.. Low level of accountability to citizens	Low

All of the above models can be employed in **municipal areas, urban districts, and urban areas**. In **rural settlements**, one person can combine three positions: the head of the municipality, the head of administration, and the speaker of the representative body of power. Such a head can be elected in direct elections, by competition, or *chosen from among* members of a representative body. In addition, in some sparsely populated rural settlements, a gathering of citizens exercises the powers of a representative body.

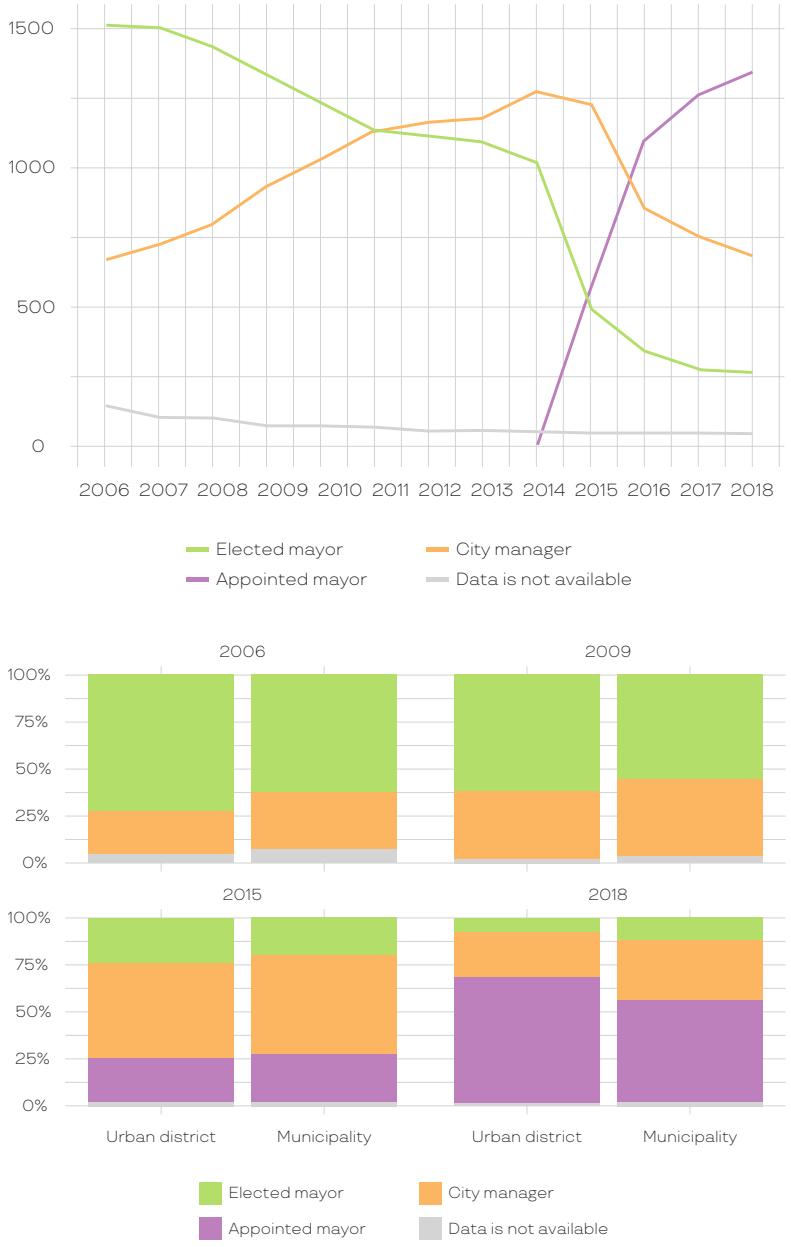
For further analysis, the "city manager + elected speaker" model was included in the same observation group as the "city manager" model, since these models have similar in two characteristics of interest: accountability of the head of administration and measure of the independence of a municipality from regional authorities.

1.2. The prevalence of different management models in Russian municipal settlements: temporal and spatial aspects

1.2.1. Temporal dynamics

The general trend in the dynamics of changes[19] in the management models of Russian municipalities can be traced in Fig. 1: the graph depicts political transformations in all Russian municipalities from 2006 to 2018.

Figure 1. Dynamics of LSG governance models in 2016-2018, number of first-level municipalities.



Source: CAG calculations based on the texts of the charters of municipalities from 2006 to 2018.

19 Hereinafter calculations are made based on data for city districts, city districts with internal division and municipal districts.

Throughout the 2000s, the most common was the model of an elected mayor. Between 2012 and 2016, the city manager model became predominant, and the mayor appointing model began to evolve. The shift to the city manager model that took place in the period from 2006 to 2014 was relatively gradual. At the same time, the transition to the model of an appointed mayor after 2014 occurred more abruptly. As a result, by 2018, the model of the appointed mayor superseded the other models and amounted to more than 50%.

By 2018, management models in municipalities were distributed as follows:

- **"elected mayor"** model is used in 13% of municipalities;
- **"city manager"** model is used in 31% of municipalities;
- **"appointed mayor"** model is used in 56% of municipalities.

Thus, the Federal Law of 23.06.2014 No. 165-FZ[20] (amending Federal Law No. 131-FZ) granted a new monitoring tool to regional and federal authorities. According to the Federal Law, municipalities might **be recommended (prescribed) to espouse a specific management model**. **Some federal subjects of Russia (for example, Arkhangelsk Oblast[21] and Krasnodar Krai[22]) incorporated similar recommendations in regional legislation.** These documents also announced the list of settlements that could not independently opt for a type of management but were obliged to adopt one or another specified model.

1.2.2. Spatial dynamics

The three models of municipal management are not evenly distributed in the Russian Federation. For example, many Far East subjects managed to maintain the system with an elected mayor over the entire period under consideration. On the contrary, in the North Caucasus, the model of an elected mayor has not received widespread acceptance. The so-called **spatial diffusion factor** might be responsible for this regional variation. The spatial diffusion describes the tendency of municipalities to depend on neighbors' behavior and their belonging to a specific federal subject of the Russian Federation.

---

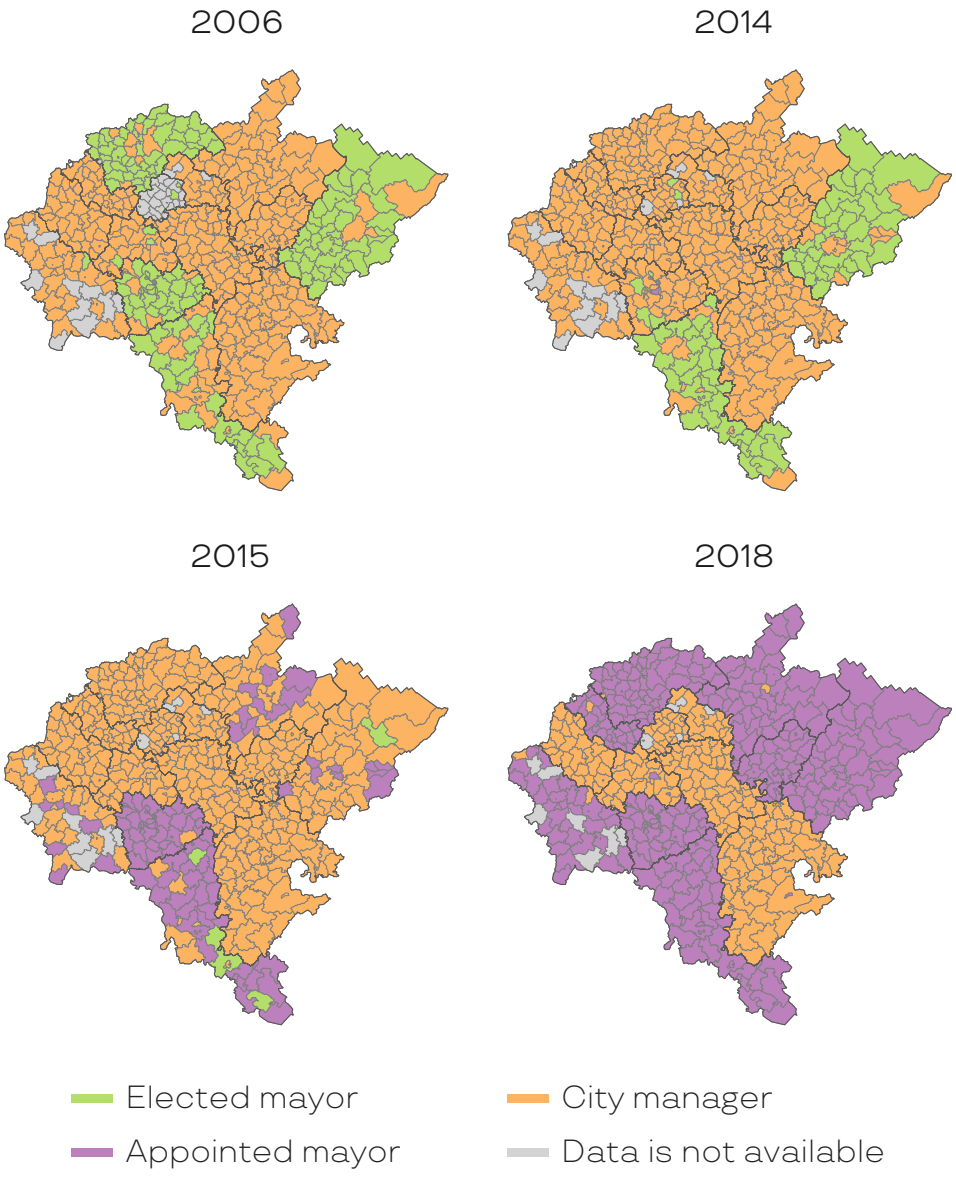
20 Federal law 23.06.2014 № 165-FZ «On Amending the Federal Law "" On General Principles of Organization of Local Self-Government in the Russian Federation" and Certain Legislative Acts of the Russian Federation».
URL: *http://www.consultant.ru/document/cons_doc_LAW_164503/*

21 For example, the law of Arkhangelsk oblast of 23.09.2004 No. 259-extra-OZ, "On the implementation of state powers of the Arkhangelsk region in the field of legal regulation of the organization and implementation of local self-government." Clause 1.1 of Art. 1.2 stipulates that "a head of an urban settlement of Arkhangelsk oblast (hereinafter referred as the urban settlement), except for the case provided for in paragraph 4 of this article, is elected by a representative body of the urban settlement from among candidates proposed by the competition commission based on the outcome of candidates for the position of the head of the urban settlement's selection, and heads the urban settlement's local administration." Further clause 1.2 indicates that a complete list of such urban settlements is contained in Appendix 4.
URL: *http://docs.cntd.ru/document/962010276*

22 The law of 07.06.2004 No. 717-KZ "On local self-government in the Krasnodar Krai" (as amended on July 3, 2020) determines, in paragraph 2 of Art. 29, that "a head of a municipal district, municipal circuit, urban district, an administrative center of the municipal district, is elected, by secret ballot, by the representative body of the corresponding municipal body from among candidates promoted by the competition commission based on competition's results. A decision on the municipal head election is taken at a representative body meeting by a majority vote of the number of established deputies."
URL: *http://docs.cntd.ru/document/461607217*

For example, if a full-fledged transition from one model to another occurs in one region, the juxtaposed region is likely to execute similar changes[23]. The influence of the spatial diffusion factor can be traced to the example of the regions of the Volga Federal District (Fig. 4). The transition from one type of model to another happened evenly from region to region: at first, the most widespread was the model of the elected mayor with a few elements of the model of a city manager, then the model of a city manager embarked on spreading. From 2015, municipalities in several adjacent regions switched to the model of an appointed mayor almost simultaneously.

Figure 2. An example of the transition to various models of municipal administration in the Volga Federal District (2006, 2014, 2015, 2018).



Source: CAG calculations based on the texts of the charters of municipalities from 2006 to 2018.

23 Gel'man V., Lankina T. Authoritarian versus democratic diffusions: explaining institutional choices in Russia's local government // Post-Soviet Affairs. 2008. Vol. 24. Iss. 1. P. 40—62. URL: https://doi.org/10.2747/1060-586X.24.1.40

At the same time, regions with a strong executive power may avoid changing the model of municipal administration, even though neighboring regions and municipalities opt for different models or change them massively. For example, such a situation has developed in the republics of Tatarstan and Bashkortostan. The city manager model prevailed in these regions in the 2000s, although the model of the elected mayor dominated in juxtaposed regions at the same time. The republican municipalities preserved this model by 2018 while their neighbors switched to the model of appointed mayors.

1.3. Some characteristics of the municipal level of government in Russia

1.3.1. Revenues and expenditures of municipal budgets

One of the defining characteristics of local self-government in Russia is substantial underfunding. **The share of expenditures and revenues of municipal budgets from the entire state budget on average in Russia is 12.3% and 11.4%, respectively.** These indicators are significantly lower than in other countries (Table 2). The gap in the average share of LSGs in the state budget looks especially large among countries belonging to states with a high-income level (almost twice). The share of LSGs in state budgets among countries with an upper-middle income level is lower by about one-third.

Table 2. Comparison of the expenditure and income of LSG budgets in Russia and in other countries, % of total government budget (average values in 2016-2018).

Indicator	Russia	All countries	Federal countries	Unitary countries	High-income countries	Countries with income above average
Expenditure	12,3	18,7	13,5	19,5	20,9	17,3
Income	11,4	19,7	14,5	20,6	21,8	18,2

Source: World Observatory on Subnational Government Finance and Investment. (URL: *http://www.oecd.org/cfe/regionaldevelopment/Observatory-on-Subnational-Government-Finance-and-Investment.htm*); Monitoring of local budgets (URL: *https://minfin.gov.ru/ru/perfomance/regions/monitoring_results/Monitoring_local/results/*); Ministry of Finance of Russia, CAG calculations.

In addition, the expenditures and revenues of the budgets of municipalities have been stagnating for a long time (Fig. 2). **Real per capita expenditures and revenues of municipal districts** and urban districts from 2006 to 2018 grew by only 10.8%, while per capita expenditures of the entire consolidated budget of the Russian Federation for the same period increased by 56.1%. This difference means that **since 2006 at the disposal of municipalities, practically no additional funds have appeared compared to the budgets of other levels**.

Figure 2. Median expenditure and income of municipal and urban districts, per capita values in 2018 prices, thousands rubles.

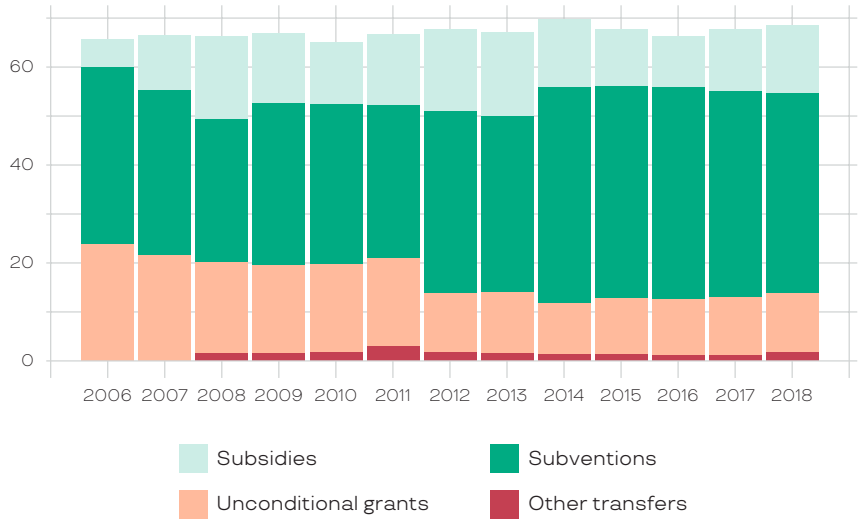
Source: Municipal Indicators Database, Rosstat, CAG calculations

1.3.2. The structure of municipal budget revenues: transfers

Another important feature of Russian local self-government is its relatively low **financial independence**. Municipalities receive most of the budget funds from the regions or the federal budget. On average, in the budgets of Russian municipal districts and urban districts, **the share of interbudgetary transfers in all revenues (that is, the sum of revenues from subsidies, subventions, grants, and other transfers) is almost 70%**, which indicates a high level of dependence on other levels of the budget system.

In addition, the capacity of Russian municipalities to freely dispose of available budgetary resources gradually decreases. This limited capacity is caused by a gradual increase in the share of subsidies and subventions in recent years. By now, an average share of the mentioned type of transfers exceeds 55% of all municipal budget revenues (Fig. 3). The peculiarity of subsidies and subventions, among other transfers, is the curtailed control municipalities enjoy over the provided resources. Transfers are allotted to implement specific responsibilities imputed to municipalities; municipalities cannot use these funds at their discretion. At the same time, the share of transfers that allows municipalities greater control capacities has decreased by 11 percentage points since 2006, from 24% to 13% of all regional revenues.

Figure 3. Structure of interbudgetary transfers as a share of all budget revenues by municipalities and urban districts (median values), %.



Note: the data on "other transfers" is available only from 2008

Source: Municipal Indicators Database, Rosstat, CAG calculations

1.3.3. The position of the heads of municipalities

An essential feature of modern LSG in Russia is the **political vulnerability of municipal heads**. In the early 2000s, attempts to mitigate perpetuating conflicts between the regional and municipal governments by the Minister of Defense diluted his power. During that period, strong mayors of large cities challenged the governors who sought to control municipalities through financial and administrative instruments[24]. Subsequent LSG reforms reduced the likelihood of future conflict by diminishing the political independence of the municipal heads. For example, in 2009, governors had the potential to **influence the resignation of an elected mayor through the representative body of that municipality**. The most famous case is the resignation of Petrozavodsk's head, Galina Shirshina: she had to leave the office after a series of conflicts with the governor[25].

Criminal persecution of municipal heads and members of their teams undermined their power significantly. Between 2008 and 2019, 15% of the heads of the 109 largest Russian cities became subject to criminal investigations[26]. The likelihood of persecution happened to be even higher for the elected mayors. Between 2000 and 2012, 85% of the arrested heads of the 207 largest Russian cities received their posts in the direct elections.[27]

24 Turovsky R.F. Conflicts at the level of the subjects of the Federation: typology, content, settlement prospects // Obshestvenny nauki i sovremennost (Social sciences and contemporaneity). 2003. № 6. P. 78—89. In Russian

25 Petrozavodsk's mayor, Galina Shirshina has been dismissed // Interfax. 2015. 25 December. URL: *https://www.interfax.ru/russia/487120* (in Russian)

26 Where do mayors go? KGI experts analyzed the career paths of the cities' heads over 10 years // Civil Initiatives Committee. 2019. 27 June. URL: *https://komitetgi.ru/analytics/4102/* (in Russian)

27 Buckley N., Garifullina G., Reuter O. J., Shubenkov A. Elections, appointments, and human capital: the case of Russian mayors // Demokratizatsiya. 2014. Vol. 22. No. 1. P. 87—116.

The adoption in 2014 of Federal Law No. 165-FZ[28] extended the application of competitive commission to elect a municipal head and introduced recommendations (prescriptions) on the preferred model municipal government for specific municipalities (see paragraph 1.2). The political pressure municipal heads faced encouraged many of them **to pursue their political career in other spheres**[29]. For example, **some incumbent cities' mayors became candidates for the deputy of the State Duma** in the 2016 Russian legislative election. Such a nomination was deemed to eliminate a potentially politically solid opponent to a governor. The nomination for the State Duma of Krasnodar and Novorossiysk's mayors might have coincided with the abolition of direct election for a municipal head[30]. A similar situation occurred with Vologda's mayor: he became a candidate for the State Duma after the cancellation of a municipal head's direct election[31].

28 Federal law 23.06.2014 № 165-FZ "On Amending the Federal Law 'On General Principles of Organization of Local Self-Government in the Russian Federation' and Certain Legislative Acts of the Russian Federation".
URL: *http://www.consultant.ru/document/cons_doc_LAW_164503/*

29 Reuter O.J., Buckley N., Shubenkova A.Y., Garifullina G. Local elections in authoritarian regimes: An elite-based theory with evidence from Russian mayoral elections // Comparative political studies. 2016. Vol. 49. No. 5. P. 662—697.

30 Veniamin Kondratiev is getting rid of mayors // Kommersant. 2016. 24 March.
URL: *https://www.kommersant.ru/doc/2946121* (in Russian)

31 The mayors saw the future in the State Duma // Kommersant. 2016. 17 February.
URL: *https://www.kommersant.ru/doc/2917945* (in Russian)

2. ASSESSMENT OF THE IMPACT OF LSG ORGANIZATION MODELS ON THE SOCIO-ECONOMIC INDICATORS OF MUNICIPALITIES

2.1. LSG structure and incentives for heads of municipalities: theoretical premises and the Russian context

The method of obtaining power in a system is usually viewed as an institutional framework (rules of the game). These rules form the **structure of incentives and possible behavior models** for political actors in a given system[32]. For example, different models of municipality governance imply different rules of the game that determine incentives and restrictions on the actions of municipal authorities—the set of actions over time impact the economic, social, and management performance of the municipality.

A vital element of the game's rules at the municipal level of power is the model of **political accountability**[33] of the municipality head: it depends on whether she will get power and keep her post. The political accountability of the municipality head is determined by one of the models of municipality management established corollary to the legislation (for more details, see paragraph 1.1).

In the **"elected mayor"** model, a municipality head gains power through **direct elections** in which the population of a specific municipality participates. In the "appointed mayor" model, a municipality head receives power by a **competition commission** formed by a representative municipality authority and a governor of a consequent subject of the federation.

In the models **"city manager" and "city manager + elected speaker,"** power is distributed entirely between two figures: a municipal administration's head and a municipality head. However, in both cases, a head municipality administration has the repository of the powers, such as managing a municipal budget or executing a personnel policy of an administration. In both models, **heads of municipal administration are appointed by the competition commission**. **Thus, a significant difference in political accountability exists only between the "elected mayor" model and other models with different forms of appointment of heads of municipality administrations.** In this regard, further analysis is devoted to empirical verification of the effects that arise precisely when changing the model of municipality administrations from the "elected mayor" model to the appointment model.

This study examines **two particular impacts** the alteration of the municipality management model was supposed to achieve in two phases. The first stage

32 North D.C. Institutions, institutional change and economic performance. New York, 1990.

33 Ross C. Local politics and democratization in Russia. Routledge, 2008.

started in 2003 when Federal Law No. 131-FZ was passed; the second one followed after the Federal Law dated 06/23/2014 No. 165-FZ[34] adopted amendments to Federal Law No. 131-FZ and other regulatory legal acts.

Effect 1. Establishing a unified state power system at the local level by limiting the autonomy of municipalities.

The tendency of governors and mayors of large cities to vie for political influence thwarted the three-dimensional state power system (federal — regional — municipal levels)[35]. Prior to the reform, the model of an elected mayor provided municipalities with more political autonomy and feasible opportunities to prioritize city needs over regional interests. Introducing city managers and then appointed mayors was supposed to undermine this relative freedom since **the city managers were assumed to run cities less autonomously: preferring regional interests over municipal ones and collaborating with authorities of subjects of the federation**.

Several theoretical premises advocate the inevitability of the model shift. The change of municipality administration affected the political status of municipality heads. While an elected mayor is a politician, **an appointed mayor is an official**[36]. While the former, interested in re-election, tends to distribute social benefits more, the latter, accountable to the higher state authorities, strives to increase performance indicators by which the high-profile state officials assess her work. Given the tendency to solidify and hierarchize executive power in Russia[37] and the presence of a domineering political party[38] controlling deputies of the local council by the internal party mechanisms, the appointed mayors and city managers are primarily accountable to the subject of the federation government.

Effect 2. An increase in the efficiency of municipality management is due to the greater professionalization of heads of municipalities.

The change from the "elected mayor" model to the "city manager" model and then the "appointed mayor" was accompanied by **expectations of greater efficiency of the appointed mayors in terms of managing the economy and socio-economic development of the municipality**. Similar expectations were expressed both at the federal[39] and regional levels. The justifications for adopting the relevant

---

34 Federal law 23.06.2014 № 165-FZ «On Amending the Federal Law "" On General Principles of Organization of Local Self-Government in the Russian Federation" and Certain Legislative Acts of the Russian Federation». URL: *http://www.consultant.ru/document/cons_doc_LAW_164503/*

35 Gel'man V.Y., Ryzhenkov S.I. Local regimes, urban governance and «power vertical» in contemporary Russia // Politicheskaya expertiza: POLITEKS (Political expertise). 2010. T. 6. № 4. pp. 130—151 (in Russian).

36 Alesina A., Tabellini G. Bureaucrats or politicians? Part I: A single policy task // American Economic Review. 2007. Vol. 97. No. 1. P. 169—179. Alesina A., Tabellini G. Bureaucrats or politicians? Part II: Multiple policy tasks // Journal of Public Economics. 2008. Vol. 92. Iss. 3-4. P. 426—447.

37 See: Presidential Address to the Federal Assembly. 08.06.2000. URL: *http://kremlin.ru/events/president/transcripts/21480*

38 Golosov G.V. Co-optation in the process of dominant party system building: The case of Russia // East European Politics. 2014. T. 30. No. 2. P. 271—285.

39 See: Presidential Address to the Federal Assembly. 12.12.2013. URL: *http://kremlin.ru/events/president/news/19825*; Local reform needs to be continued // Kommersant. 2014. 27 November. URL: *https://www.kommersant.ru/doc/2619682*

laws[40] of the subject of federation sometimes included direct references to the increase in the efficiency of the LSG bodies.

There were theoretical prerequisites for such expectations. Introducing the city manager model, Russia *hoped to emulate its success* in the United States, where the institute city managers fostered **a community of non-partisan managers[41] professionally engaged in urban development and propelling the most advanced urban management practices**. Russia was supposed to develop a similar professional community; furthermore, the law permitted a competitive procedure to determine a city manager, granting municipalities the right to enact special professional requirements to managers. For example, *the criteria for the nomination of candidates* for a municipality head of the several large cities obliged the candidates to submit **a medium-term program of municipality socio-economic development**[42], besides sufficing requirements for education, work experience, and knowledge of legislation. This program (among other submitted documents) was an essential element of the candidate's portfolio, based on which the competition committee selected the future city manager.

2.2. Socio-economic indicators of municipalities used to assess the achievement of effects.

This study aims to find a significant (causal) relationship between the municipality management's change and the expected (planned) effects that should have followed the model's change. For this, one compiles a list of indicators to examine the achievement or non-achievement of effects delineated in paragraph 2.1.1.

To evaluate effect 1's achievement, one needs to pursue alterations in the power balance between municipalities and regional authorities. Given the changed model of political accountability that municipalities had to obey, city managers and appointed mayors had to prioritize regional interests and pay close attention to the governor's recommendations. The desideratum of municipal autonomy is a measure of control a municipality possesses over budget expenditures.

The findings of *overseas researches*, studying the influence of a model of a municipality head election on municipal budget expenditures, indicate multidirectional results. On the one hand, according to the studies of US[43] and German[44] municipalities, elected mayors tend to spend less than appointed mayors. On the other hand, the research

---

40 See: Explanatory note to the draft of the Sverdlovsk Region law "On Amendments to Article 5 of the Law of the Sverdlovsk Region" On the Election of Local Self-Government Bodies of Municipal Formations Located on the Territory of the Sverdlovsk Region". URL: *http://zsso.ru/upload/site1/f05iAP9G2C.pdf*

41 ICMA. URL: *https://icma.org/who-we-are*

42 See: Ulyanovsk City Duma. Decisions in 2018. URL: *http://ugd.ru/docs/solutions/2797/22986/9/*; Decision of the Barnaul City Duma of 02.06. 2017 No. 820 "On approval of the Procedure for holding a competition for the selection of candidates for the position of the head of the city of Barnaul" (as amended on April 28, 2020). URL: *http://docs.cntd.ru/document/450232714*

43 Coate S., Knight B. Government form and public spending: Theory and evidence from US municipalities // American Economic Journal: Economic Policy. 2011. Vol. 3. No. 3. P. 82—112.

44 Blume L., Döring T., Voigt S. Fiscal effects of reforming local constitutions: Recent German experiences // Urban Studies. 2011. Vol. 48. No. 10. P. 2123—2140.

on the structure and level of city budgets in Germany showed an opposite effect[45]: spending decreases if a city adopts the model of appointed mayor. American cities with the city manager model also reduced spending on infrastructure and security[46]. These differences demonstrate that the dynamics of budget expenditures may **depend on the tasks set for the appointed mayor**.

In Russian conditions, city managers and appointed mayors are tasked with allocating resources by the regional authorities. The period from 2008 to 2018 considered in the study was characterized to a greater extent by low economic growth rates in Russia with a simultaneous increase in the debt burden of regional budgets. At the same time, the federal authorities, represented by the Russian Ministry of Finance, often demanded a reduction in the expenditure side of budgets and balance deficits[47]. The governors could relay this requirement to the municipal level, considering the high share of transfers in municipality budgets. One might suggest that the mayors who received power according to the model "city manager and appointed mayor" were intended **to reduce the municipal budget expenditures as a whole (1)**.

Optimization of municipal budget expenditures could occur unevenly in all directions (expense items). **The municipality budgets' expenditure patterns** may change depending on the preferences of the regional government. Since a regional parliament and head of subject of the Federation (since 2012) are directly elected by a population, the reduction in municipal spending on *socially sensitive sectors*, such as education, housing, and communal services, social expenditures, might not have occurred or occurred to a lesser extent than for other costs. The municipal budget's less socially sensitive expenditures include **costs of maintaining employees of LSG bodies (2.1) and maintaining employment in organizations of the municipal form of ownership (2.2)**.

The share of tax and non-tax revenues in the overall structure of revenue patterns might be indicative of decreasing budget autonomy of municipalities. The reformed management model provides city managers and appointed mayors with minimal opportunities to "bargain" with the regional government to allocate municipal budget transfers. Regional authorities can require municipality heads to optimize budgets and reduce the inward municipal transfers. These actions are likely **to increase the share of tax and non-tax revenues**. At the same time, professionalization (effect 2, see the next point for more details) may imply better management and higher indicators of the municipalities' income. For an unambiguous answer about the direction of the effect, one should consider **the proportion and the dynamics of budget constituencies in per capita terms** (3).

To assess the achievement of effect 2, one needs to study the municipality indicators, which would reflect the managerial qualities of the municipality head.

---

45 Egger P., Koethenbuerger M., Smart M. Disproportionate influence? Special-interest politics under proportional and majoritarian electoral systems. URL: *http://econ.queensu.ca/QPEW/2007/smart-mayors.pdf*

46 Saha S. City-level analysis of the effect of political regimes on public good provision // Public choice. 2011. Vol. 147. P. 155—171.

47 See: A billion from above: the Federal Ministry of Finance demands budget cuts for the Saratov region. 2012. 25 April. URL: *https://www.kommersant.ru/doc/1923330*; The Ministry of Finance of the Russian Federation demands to reduce the state debt of the Novosibirsk region by 2% // InfoPro54.ru. 2016. 7 June. URL: *https://infopro54.ru/news/minfin-rf-trebuet-snizit-gosdolg-novosibirskoj-oblasti-na-2/*; The Ministry of Finance of the Russian Federation banned Khakassia from introducing social support measures for "children of war" // Interfax Russia. 2019. 3 April. URL: *http://www.interfax-russia.ru/Siberia/main.asp?id=1019704*

It should be noted that within the framework of this study, the primary source of information on the socio-economic state of municipalities was the Rosstat Municipal Indicators Database (BDMO). As mentioned in the report's introduction, the quality and completeness of data in the BDMO are low, especially in terms of indicators not related to the budgets of municipalities. The greater completeness of data that could characterize the quality of management of a municipality by its head are indicators that describe the state of the municipality's economy and the quality of its infrastructure. In this study, **the efficiency of municipality management is defined primarily as the quality of municipality economic management**.

An increase in municipal revenues might advocate the growth of professional managerial competencies of city managers and appointed mayors compared to elected mayors. The mentioned increment is mainly evident in incomes municipality heads can influence. These indicators include **income from the management of municipal property (4.1) and accounts payable of organizations of municipal ownership (4.2)**. The municipality head can manage properties in two ways: either directly or by managers appointed by her. The management toolkit is quite comprehensive[48]: from leasing property to the receipt of profits of state and municipal enterprises remaining after taxes.

The structure of a development program, candidates for a municipality head or city manager are to present to a competition committee, requiring candidates to elaborate on attracting investments. Actors-in-office are supposed to implement their earlier designed strategies. Accordingly, **a measure of investment in fixed assets of the municipal form of ownership (5.1) and investment in fixed assets of all organizations in a municipality (5.2) might serve as indicators of a mayor's economic management efficiency**. The first indicator indirectly characterizes an *investment appeal* of municipally ruled organizations. The second indicator reflects the municipality's general economic environment and its investment climate.

An essential authority of the municipality administration's head is to solve local problems with the infrastructure. City managers and appointed mayors, as more skilled managers, can be expected to be more effective in dealing with these problems. Given the limitations on the quality of the initial data, one considers two indicators: the first evaluates **the quality of communal infrastructure in municipalities (6.1), the second stands for waiting lists for obtaining accommodation (6.2)**[49].

The last column of Table 3 indicates an expected influence of the model's change, provided that the indicated effects 1 and 2 are achieved (+/– mean an increase/decrease, respectively).

48 Article 42. Budget Code of Russian Federation.
URL: *http://base.garant.ru/12112604/43c951d8803e4d3c0a4d98e76e8fcc55/*

49 Beazer Q., Reuter O. J. Do Authoritarian Elections Help the Poor? Evidence from Russian Cities. Available at SSRN: *https://ssrn.com/abstract=3404485*

Table 3. Expected effects and indicators characterizing them used for the assessment.

Effect	Area	Indicator	Expected change
Effect 1. Establishing a unified state power system at the local level by limiting the autonomy of municipalities.	1. Total expenditure and spending structure of the municipal budget	1.1. Total expenditure of the municipal budget	–
		1.2. Expenditure of the municipal budget by category (including spendings on municipal employees)	
	2. Municipal employment	2.1. The number of people employed in organizations of municipal ownership	–
		2.2. The number of people employed in organizations of municipal ownership by occupation; average wage of municipal employees	–
	3. Income structure	3. Total tax and non-tax income in overall income of the municipal budget, income grants	?
Effect 2. An increase in the efficiency of municipality management is due to the greater professionalization of heads of municipalities.	4. Property management	4.1. Income from management of municipal and governmental property	+
		4.2. Accounts payable of organizations of municipal ownership	–
	5. Investment	5.1. Total capital investment in organizations of municipal ownership	+
		5.2. Total capital investment made by the organizations on the territory of municipal division	+
	6. Infrastructure and social security	6.1. Share of depleted water supply network	+
		6.2. Ratio of families that received housing to all families with housing needs at the end of preceding year	

The indicators described above characterize the effects expected from a change in the management model. To verify if these effects are achieved, one needs a statistical test checking the presence of a causal (cause-and-effect) relationship between the change in the management model and the dynamics of these indicators. Revealing such a causal connection will lead to answering the following questions.

1) Does the change of the municipal administration model from "elected mayor" to "city manager" and "appointed mayor" really affect specific socio-economic indicators of the municipality?

2) Did the change in the management model lead to the following effects:

- decrease in the independence of municipalities from the regional level of government;
- improving the efficiency of economic management of the municipality?

2.3. Assessment design: using the Difference-in-Differences method

2.3.1. Description of the Difference-in-Differences method

Several statistical methods are employed to identify the causal relationship between specific actions of the state (implementation of changes) and the effects of these actions. Within the framework of this study, the chosen method should proceed from the following limitations:

- lack of specially collected data (experimental) during implementation; when the model of municipal administration was changed, there was no exceptional control or pilot group of municipalities, based on the results of which it would be possible to assess the effect of the reform;
- the choice by a municipality of its management model is not an accidental event but may depend on the characteristics of MDs; for example, a more subsidized municipality is more dependent on the regional government, which, because of this, has more opportunities to influence changes in the management model of municipalities.

Due to these limitations, **the Difference-in-Differences (DiD) method** was chosen for this study, allowing one to assess the direction of causal dependence on non-experimental data when unobservable factors create differences between those who fell into the control and experimental groups. DiD relies on the following assumption: Even if observation units in the control and experimental groups initially varied in their characteristics, and the change in the indicator of interest occurs in the same direction, one still can estimate the ATT (average treatment effect on treated) parameter. **It shows how, on average, the policy has changed the indicator's value in the exposed group relative to the control group that was not exposed.**

2.3.2. Construction of the experimental and control groups

In this study, the effect being evaluated is **the transition from the model of an elected mayor to models of a city manager or an appointed mayor**. Consequently, the municipalities that changed the management model constitute the experimental group and the municipalities that retained direct elections form the control group.

Since the change in the management model of municipalities in Russia occurs not at once but undergoes over several cycles (for more details, see paragraph 1.2.1), the control group in specific years may also include municipalities that did not change the model immediately at the time of the reform, but later.

Let us illustrate this with a schematic example. There are three municipalities: A (retained the "elected mayor" model), B (switched to the "city manager" model in 2009), C (switched to the "city manager" model in 2015). A always refers to the

control group. Moreover, after B altered its model in 2009, we can compare it with municipality A and municipality C, still holding elections until 2015. Moreover, only after 2015, the comparison of B and C will occur only with A.

Table 4. Construction of experimental and control groups for assessment.

Year	Control group	Experimental group
2009	MD w/o change + MD w/ change after 2009	MD w/ change in 2009
2015	MD w/o change + MD w/ change after 2015	MD w/ change in 2009—2015.
2018	MD w/o change	MD w/ change in 2009—2018

The first of two necessary assumptions to apply the DiD method requires comparing metrics of observations: *pre- and post-impact*. In this regard, municipalities already having a city manager model by sampling were excluded from the analysis. The second basic assumption requires maintaining the irreversibility of the impact. In the current research, it means that municipalities oscillating between two models at the time of interest were also eliminated. Since comparing periods assumes trend-evaluation of each region, municipalities where the number of observable periods was less than half of the entire time interval considered in this study were also excluded from the sample.

The final sample of the study consists of municipal districts and urban districts between 2008 and 2018. The number of municipalities in the sample varies between different models due to the above limitations and data availability.

A more detailed description of the relevance of using the DiD method in the framework of this study on the given sample is reflected in Appendix 1.

2.3.3. Description of the model and indicators used

Multiple linear regression is commonly used to estimate DiD with two periods. The regression model adopted in the research as a baseline model is used when the sample contains, firstly, several periods (2008-2018), and secondly, the impact (model change) occurred in different years; that is, we cannot designate a single period which separates periods before and after exposure for all municipal divisions. For such cases, a two-way fixed effects regression model of the following form is used[50]:

$$y_{it} = \tau_t + \pi_i + \phi D_{it} + \theta X + \varepsilon_{it},$$

where y_{it} is an indicator of interest that can be affected by the change of the model in year t in municipal division i;

50 Our research design is similar to designs used in studies with the same type of data. See: Hessami Z. Accountability and incentives of appointed and elected public officials // Review of Economics and Statistics. 2018. Vol. 100. Iss. 1. P. 51—64; Beazer Q., Reuter O. J. Do Authoritarian Elections Help the Poor? Evidence from Russian Cities. Available at SSRN: *https://ssrn.com/abstract=3404485*

τ_t — set of fixed effects in year ***t***;

π_i — set of fixed effects in municipal division ***i***;

X — matrix of control variables;

ε_{it} — random component;

D_{it} — dummy-variable, equal to 1, if municipal division ***i*** in year ***t*** had either «city manager» or «appointed mayor» model, and equal to 0, if MD used «elected mayor» model;

ϕ — estimate of the ATT (parameter of interest), representing the average effect of the model change.

Indicators (y_{it}) are listed in table 3 of section 2.2. All money-valued variables are included into regression in the form of a natural logarithm of real per capita values adjusted for the purchasing power in the region.

Treatment variable (D_{it}) is a change of governance model of MD determined from the charter.

We also include a set of **control variables**. All models include the logarithm of the population. One uses the variable "Share of profitable organizations" to measure the overall state of the municipal economy. The logarithm of the average wage is also included. Wage is not directly affected by the administration of MD and, at the same time, it is an adequate measure of the level of economic development. Another variable that measures the quality of infrastructure is a per capita total cost of fixed assets at the end of the year in municipal non-profit organizations. Models with structure of municipal budget spending also include such variables as "share of depleted water supply network" and "number of schools", i.e., variables that directly influence the level of expenditure in a particular category.

Complete names of the variables and descriptive statistics are in Appendix 2.

2.4 Evaluation results

The proposed design of the assessment makes it possible to verify the achievement of each component of the two-fold management reform: the confinement imposed on the municipal governments' autonomy from regional authorities and the improvement of municipality management efficiency.

The assessment results are given as regression tables calculated according to the base model (tables 5 and 6). **The coefficients illustrating the key results are in the line "model change."** Most of the dependent variables are measured in logarithms. Thus, **coefficients** can be interpreted as a percentage change in the outcome variable caused by the change of the governance model in municipal division (switch from "elected mayor" to either "city manager" or "appointed mayor"). In addition, to demonstrate that the results obtained are

indeed a consequence of the abandonment of the mayoral election procedure, **several robustness tests** were carried out using various specifications of the base model. A detailed description of the robustness testing strategy is given in **Appendix 3**.

Table 5 contains the results assessing the impact of changing the model on the indicators associated with **effect 1**. The left side of Table 5 examines the expenditures of the MDs budgets. A negative value of the coefficients means that the impact is negative; that is, **with the transition from the "elected mayor" model to the appointment models, the total expenditures of the municipality decreases**. **This result is robust and statistically significant.** The drop rate is 6.7% in the base model and from 2.1 to 4.9% in other specifications built for stability testing.

At the same time, the coefficients illustrating the impact of refusal from direct mayoral elections on the pattern of specific budget expenditures do not show such unambiguous results. There is a statistically significant drop in all the expenditure items under consideration (education, housing, and communal services, the social sphere, the maintenance of workers), not only in socially less sensitive ones. In the specifications of models tested for robustness, the reduction is also preserved for all items; however, only the reduction in housing and communal services costs remains statistically significant. The drop in this direction of costs is from 18 to 30%, depending on the specification.

Table 5 presents **the results of assessing the impact of the model's change on the level of employment in the municipal sector** of the economy. Similar to the municipal budget expenditures, during the transition from the election of a mayor to various models of appointment, there is a general decrease in employment in organizations of municipal ownership. The drop rate in the base model is 3.7%. At the same time, the assessment of the structure of reduced employment (employment among employees of state and municipal administration and employment of other categories of workers, indicators of salaries of municipal workers) again does not give statistically significant results: the reduction is recorded in all spheres, but the specific percentage of the decline is unstable.

Table 5. Evaluation of the impact of model change on expenditure of municipal budgets, level of employment and income structure (baseline model specification).

	Total expenditure	Educational expenditure	Housing and communal services expenditure	Social expenditure	Employee expenditure	All employees	Employees in governance	Employees not in governance	Wage of municipal employees	Share of tax and non-tax income	Tax and non-tax income	Income grants
Model change	−0,067*** (0,02)	−0,037** (0,017)	−0,325*** (0,096)	−0,106* (0,057)	−0,058 * (0,030)	−0,038** (0,015)	−0,028 (0,018)	−0,033** (0,016)	−0,009 (0,011)	2,271*** (0,794)	0,035 (0,035)	−0,106*** (0,024)
Population, ln	−0,471*** (0,07)	−0,352*** (0,082)	−0,65* (0,391)	−0,594* (0,345)	−0,477 *** (0,113)	−0,458*** (0,101)	−0,446*** (0,101)	−0,447*** (0,119)	−0,026 (0,039)	−23,294*** (3,905)	−1,041*** (0,137)	0,039 (0,113)
Fixed assets per capita, ln	0,04*** (0,011)	0,015 (0,01)	0,078* (0,046)	−0,011 (0,043)	0,008 (0,015)	0,047*** (0,007)	0,036*** (0,009)	0,050*** (0,008)	0,015*** (0,005)	−0,62 (0,51)	0,016 (0,016)	0,036*** (0,013)
Average wage, ln	0,202*** (0,062)	0,154*** (0,049)	0,632** (0,306)	−0,117 (0,194)	0,316 *** (0,109)	−0,17*** (0,061)	−0,031 (0,055)	−0,208*** (0,067)	0,347*** (0,045)	10,394*** (2,34)	0,561*** (0,097)	0,034 (0,078)
Share of profitable organizations	0,03** (0,013)	0,039*** (0,012)	−0,055 (0,08)	0,065 (0,041)	0,026 (0,016)	−0,013 (0,01)	0,01 (0,012)	−0,017* (0,01)	0,006 (0,004)	−0,264 (0,638)	0,022 (0,024)	0,038** (0,018)
Number of schools	0,094** (0,038)	0,076** (0,035)	–	0,149 (0,198)	–	0,106*** (0,037)	–	0,108*** (0,037)	0,006 (0,015)	–	–	–
Number of pupils	0,001*** (0)	0,002*** (0)	0,006* (0,003)	0,005** (0,002)	–	0,001 (0,001)	–	0,001** (0)	0 (0)	–	–	–
New houses, ln	0,026*** (0,005)	–	0,087*** (0,024)	–	–	–	–	–	–	–	–	–
Length of roads owned by MD	−0,005 (0,004)	–	−0,025 (0,022)	–	–	–	–	–	–	–	–	–
Families with housing needs	0,027** (0,013)	–	–	0,079 (0,05)	–	–	–	–	–	–	–	–
R^2	0,084	0,043	0,02	0,022	0,032	0,068	0,038	0,063	0,199	0,05	0,076	0,022
# of observations	12 802	13 284	12 570	12 626	11 544	14 012	13 987	13 931	13 915	13 028	12 795	12 763

***p < 0,1; **p < 0,05; ***p < 0,01.**

Note: Standard errors clustered at a regional level are in parentheses.

Thus, the results of the assessment demonstrate that when the "elected mayor" model is **substituted for "city manager" and "appointed mayor" models, there is a statistically significant reduction in the total expenditures of the municipal budget and the overall level of employment in the municipal sector of the economy**. These observations confirm that **effect 1, associated with a decrease in the municipal level of power autonomy and the corresponding aggrandization *of the executive authorities*, was achieved to a greater extent**. Following the federal government's recommendation, governors *had the opportunity to compel* city managers and appointed mayors to optimize the budget. Given the management model's change, city managers and appointed mayors had to pursue a policy of budget optimization.

The comparison of expenditures and revenues structure (right panel of Table 5) elicits an extra argument advocating the achievement of effect 1. The results argue that a model's shift leads, on average, to an increase in the share of tax and non-tax revenues of a municipal budget by 2.2 percentage points. However, this result cannot be deemed as a growing financial autonomy. An analysis of per capita values shows that this effect is achieved by reducing all transfers by 10% (gratuitous receipts), not due to improvements in the municipality's financial indicators. **The model's change does not precipitate a decrease in municipal revenues but entails a reduction in transfers and the total expenditures of the municipal budget.**

On the one hand, the economic situation and the quality of economic management remain almost unaltered, and municipal heads do not intend to curtail budget expenditures. On the other hand, the decreasing transfers inevitably imply a spur to reduce municipal budget expenditures and revenues. Regional authorities interested in optimizing municipalities' expenses can earmark less money for city managers and appointed mayors as less autonomous heads of municipalities. At the same time, the elected mayor, with the population's support, is a more assertive negotiator when discussing transfers.

Initially, there were no records of expected cost cuts or job optimization in the least socially sensitive areas. Nevertheless, the general downward trend persisted. These observations argue for the absence of a unified government recommendation on how municipalities should execute budget cuts. City managers and appointed mayors can manage costs and employment' detriment depending on previous budget policy. Nevertheless, the general goal of optimization is more critical than individual tasks to support certain professional strata; therefore, if direct elections are abandoned, employment is likely to decrease in many possible areas, including so-called socially sensitive ones. **Thus, ignoring the structure of expenditures and employment while reducing municipal budget spending, which city managers and appointed mayors carry out after the change of the model, also indirectly confirms the decrease in the autonomy of the municipal government.**

One of the advantages of fiscal decentralization is that lower-level managers better understand the needs of the local population, what problems need to be solved, and what needs are needed to spend the available resources[51]. In a situation where the autonomy of lower-level managers is leveled, and the tasks of budget execution descend from the top, **they are compelled to optimize costs not so much based on the municipality's needs but based on their**

51 Oates W.E. An essay on fiscal federalism. Journal of economic literature. 1999. Vol. 37(3). P. 1120—1149.

capabilities. Analyzing the possible consequences of the 2003 municipal reform, the researchers initially assumed that the existing problems of local budgets in Russian municipalities would not only not be resolved by city managers but could also worsen[52]. Indeed, the problem of significant underfunding of Russian municipalities from the reform's inception in 2008 to 2018 had not been resolved (see paragraph 1.3).

Table 6 contains the **results of assessing the impact of the change in the model on specific indicators of municipal economy management**: the structure of budget revenues of the Moscow region, the level of investment, and infrastructure issues. In contrast to the values discussed above, in Table 6, the line "change of model" contains negative and positive values of the coefficients. At the same time, the statistical significance of these coefficients in the basic specification is almost always absent. A reasonably stable result is only a decrease in investments in fixed assets of organizations of municipal ownership (by 12.8%). In all other cases, no significant positive effect is observed.

Table 6. Evaluation of the impact of model change on the indicators of economic management of the municipality.

	Total investment	Investments in organizations of municipal ownership	Income from property management	Accounts payable rate	Share of families that received housing	Share of depleted water supply network
Model change	–0,044 (0,038)	–0,128*** (0,041)	0,004 (0,032)	0,013 (0,029)	–0.000 (0,008)	0,004 (0,008)
Fixed assets per capita, ln	0,003 (0,033)	0,135*** (0,028)	0,01 (0,021)	–0,037 (0,026)	0,013*** (0,004)	–0,005 (0,006)
Average wage, ln	1,15*** (0,159)	0,417*** (0,136)	0,438*** (0,097)	0,438*** (0,097)	–0,003 (0,022)	–0,023 (0,023)
Share of profitable organizations	0,175*** (0,058)	0,11*** (0,04)	–0,013 (0,033)	–0,467*** (0,079)	0,005 (0,009)	0,003 (0,008)
Population, ln	–0,465 (0,29)	–0,052 (0,28)	–1,07*** (0,185)	–0,965*** (0,229)	0,153*** (0,042)	0,127*** (0,044)
Number of pupils	–	–	–	–	0 (0)	–
Families with housing needs	–	–	–	–	–0,122*** (0,008)	–
New houses, ln	–	–	–	–	–	–0,003 (0,002)
Area by MD	–	–	–	–	–	0,003 (0,007)
R^2	0,023	0,015	0,03	0,04	0,116	0,03
# of observations	13 995	13 246	12 796	5128	12 991	13 733

***p < 0,1; **p < 0,05; ***p < 0,01.**

Note: Standard errors clustered at a regional level are in parentheses.

Source: CAG calculations.

Thus, these observations show **no evidence of the achievement of effect 2, associated with an increase in the quality of MO control after the model**

52 Ross C. Municipal Reform in the Russian Federation and Putin's "Electoral Vertical" // Demokratizatsiya. 2007. Vol. 15. Iss. 2. P. 191–209. URL: https://doi.org/10.3200/DEMO.15.2.191-209

change. There is no evidence that the shift from direct mayoral elections to "city manager" and "appointing mayor" models has resulted in a significant increase in the professionalization of new city managers as expected. The part of municipal incomes, which depends instead on the quality of management, has not increased. The growth of indicators of own income (associated primarily with tax collection — Table 5) and income from property management are not statistically significant. There is no improvement in financial management — the level of accounts payable, including delays in wages, contributions to government funds, did not decrease in municipalities that switched to the services of managers.

The indicators of infrastructure development and social support that we have included do not imply that city managers and appointed mayors are better at dealing with social issues. Other similar indicators (sewer and heating networks needing replacement) were also considered and showed similar statistically insignificant results.

On the contrary, due to the change in the model, investments in fixed assets of organizations of municipal ownership have significantly decreased. Such investments can be carried out both at the expense of the municipal budget itself and through the attraction of funds from private companies. Probably, both mechanisms can work in this case. The decrease in municipal investments follows the general trend to reduce its costs. Nevertheless, there is reason to believe that the second mechanism also works — the elected mayor has incentives to negotiate with the municipal and city elites to involve them in infrastructure projects. The city manager and the appointed mayor are primarily focused on regional authorities, and therefore communication and involvement of economic agents is not a priority for them.

In this study, efficiency was primarily understood as the quality of management of the municipality and not as a level resource usage. This strategy was opted since expenditure can treated as efficient only when it is compared to the quality of provided services[53]. The research shows that transition from the model of an elected mayor to another entailed decrease in costs. However, this cost reduction does not signal growing spending efficiency since a perpetual decrease in transfers, and not amelioration of their use, is more likely to cut spending.

53 Saha S. City-level analysis of the effect of political regimes on public good provision // Public choice. 2011. Vol. 147. P. 155—171; Booms B.H. City governmental form and public expenditure levels // National Tax Journal. 1966. Vol. 19. P. 187—199.

CONCLUSIONS

1. **A change of municipality management's form, in particular, the transition from the "elected mayor" model to the "city manager" and "appointed mayor" models, affects the socio-economic indicators of the municipality.**

   Such an effect stems from changes in the political accountability of a municipal head. The transition from direct elections of a municipal head to various types of appointment models impacts the political incentives of the municipal heads by coaxing them to seek support from regional authorities and as a corollary pursue their needs and interests. The DiD method revealed that such a change in political incentives interfered in municipal budget expenditures, a level of employment, and wages in sectors associated with a municipal government and in some municipality's economic, enterprise, and economic management indicators.

2. **The transition from the mayor's direct elections to the appointment models precipitated an increase in municipalities' dependence on the regional government and reinforced and solidified executive authorities of all administrative levels (between the region and municipalities).**

   The achievement of this effect was recorded on the indicators of budget expenditures and employment in the municipalities. The study shows that refusal to elect mayors directly might elicit the following consequences:

   1) the total number of municipal expenses decreases. The measure of the fall ranges from 2.1% to 6.7% (depending on the applied specification of the calculation model);

   2) the structure of municipal expenditures remains almost unchanged. A statistically significant drop is observable for all analyzed items of expenditure: education, housing, public utilities and amenities, social policy, and maintenance of employees. A relatively more significant drop in costs can be seen only for items related to housing and public utilities, and landscaping, but this trend is not stable in all model specifications;

   3) general employment in organizations of the municipal form of ownership reduces. The measure of the fall ranges from 2.7 to 6.4% (depending on the applied specification of the calculation model);

   4) it is impossible to single out the sectors and spheres that have undergone the greatest reductions. A statistically significant drop can be seen across all analyzed sectors: education workers, employees of the municipal level of government, all other employees of the municipal sector, excluding employees of the municipal government. The spending on salaries for municipal workers also decreases accordingly;

   5) the share of transfers transferred to the municipal budget (in the basic model) decreases by 11%. At the same time, indicators of tax and non-tax revenues remain at the same level. This means that the main incentive to reduce the total expenditures of the MO is precisely the reduction in

the transfers allotted to the MDs under the control of the city manager or the appointed mayor.

3. There was no evidence advocating more outstanding effectiveness of municipal administration under the models of a city manager and an elected mayor, compared to ones formed by an elected mayor.

One of the initially expected effects of the reform of municipal self-government launched by Federal Law No. 131-FZ and other regulatory legal acts is an increase in the quality of management of a municipal entity. It was assumed that the transition from direct elections of municipal heads to their election according to the model of a city manager or an appointed mayor would improve the quality of municipal management due to the greater preparedness of the appointed mayors to solve complex management tasks. However, as the results of this study show, there are no statistically significant positive dynamics in the indicators that can characterize the efficiency of economic management of the municipality. The study did not find evidence that the appointed municipality heads are more effective managers than the elected ones.

The transition from the direct election model to the appointment model is accompanied by the following characteristics of indicators, which can be used to assess the quality of management of the MO economy.

1) There are no statistically significant changes in the indicators characterizing the income of the municipality, which are under the direct control of the head of the MO or the local administration: income from the management of municipal property and accounts payable of organizations of the municipal form of ownership. In addition, there is no growth in the indicators of tax and non-tax revenues to the budget of the MO. Thus, there is no reason to assert that changing the model can increase tax collection or benefit the quality of economic management.

2) There are no statistically significant changes in investments in fixed assets carried out by organizations located in the municipality's territory.

3) The investment in fixed assets of organizations of municipal ownership diminishes. The investment of these kinds is carried out primarily by two sources: the municipal budget and private companies' funding. Cases of reduction in investments due to a decrease in the spending of the municipal budget itself are probably a consequence of the general decrease in municipal expenses. The aggravation of investment reduction due to a drop in revenues from private companies is likely a consequence of the municipal economic management quality deterioration.

4) There are no statistically significant changes in indicators characterizing the quality of infrastructure and the solution of acute social problems. In particular, with the rejection of direct elections of the mayor, there was no decrease in the share of the water supply network in need of replacement or an increase in the share of families that successfully received housing under social programs.

REFERENCES

1. Alesina A., Tabellini G. Bureaucrats or politicians? Part I: A single policy task. American Economic Review, 2007, vol. 97, no. 1, pp. 169–179.

2. Alesina A., Tabellini G. Bureaucrats or politicians? Part II: Multiple policy tasks. Journal of Public Economics, 2008, vol. 92, iss. 3-4, pp. 426–447.

3. Angrist J.D., Pischke J.S. Mostly harmless econometrics: An empiricist's companion. Princeton university press, 2009. 392 p.

4. Autor D.H. Outsourcing at will: The contribution of unjust dismissal doctrine to the growth of employment outsourcing. Journal of Labor Economics, 2003, vol. 21, no. 1, pp. 1–42.

5. Beazer Q., Reuter O.J. Do Authoritarian Elections Help the Poor? Evidence from Russian Cities. Available at SSRN: https://ssrn.com/abstract=3404485

6. Blume L., Döring T., Voigt S. Fiscal effects of reforming local constitutions: Recent German experiences. Urban Studies, 2011, vol. 48, no. 10, pp. 2123–2140.

7. Booms B.H. City governmental form and public expenditure levels. National Tax Journal, 1966, vol. 19, pp 187–199.

8. Buckley N., Garifullina G., Reuter O. J., Shubenkov A. Elections, appointments, and human capital: the case of Russian mayors. Demokratizatsiya, 2014, vol. 22, no. 1, pp. 87–116.

9. Coate S., Knight B. Government form and public spending: Theory and evidence from US municipalities. American Economic Journal: Economic Policy, 2011, vol. 3, no. 3, pp. 82–112.

10. Egger P., Koethenbuerger M., Smart M. Disproportionate influence? Special-interest politics under proportional and majoritarian electoral systems. URL: http://econ.queensu.ca/QPEW/2007/smart-mayors.pdf

11. Gel'man V., Lankina T. Authoritarian versus democratic diffusions: explaining institutional choices in Russia's local government. Post-Soviet Affairs, 2008, vol. 24, iss. 1, pp. 40–62. URL: https://doi.org/10.2747/1060-586X.24.1.40

12. Gel'man V.Y., Ryzhenkov S.I. [Local regimes, urban governance and «power vertical» in contemporary Russia]. Politicheskaya expertiza: POLITEKS = Political expertise, 2010, vol. 6, no. 4, pp. 130–151. (In Russ.)

13. Golosov G.V. Co-optation in the process of dominant party system building: The case of Russia. East European Politics, 2014, vol. 30, no. 2, pp. 271–285.

14. Hessami Z. Accountability and incentives of appointed and elected public officials. Review of Economics and Statistics, 2018, vol. 100, iss. 1, pp. 51–64.

15. North D.C. Institutions, institutional change and economic performance. New York, 1990.

16. Oates W.E. An essay on fiscal federalism. Journal of economic literature, 1999, vol. 37(3), pp. 1120–1149.

17. Reuter O.J., Buckley N., Shubenkova A.Y., Garifullina G. Local elections in authoritarian regimes: An elite-based theory with evidence from Russian mayoral elections. Comparative political studies, 2016, vol. 49, no. 5, pp. 662–697.

18. Ross C. Local politics and democratization in Russia. Routledge, 2008.

19. Ross C. Municipal Reform in the Russian Federation and Putin's "Electoral Vertical". Demokratizatsiya, 2007, vol. 15, iss. 2, pp. 191–208. URL: https://doi.org/10.3200/DEMO.15.2.191-208

20. Saha S. City-level analysis of the effect of political regimes on public good provision. Public choice, 2011, vol. 147, pp. 155–171.

21. Turovsky R.F. [Conflicts at the level of the subjects of the Federation: typology, content, settlement prospects]. Obshestvenny nauki i sovremennost = Social sciences and contemporaneity, 2003, no. 6, pp. 78–89. (In Russ.)

APPENDIX 1. THE RELEVANCE OF DiD FOR THE PURPOSE OF THE RESEARCH

1. **Parallel trends assumption** is a crucial assumption for the relevance of DiD method. Simple visualization of trends in experimental and control groups is often used to confirm this assumption. In the case of several periods and several trends, such visualization is limited since the composition of the control group is changing (for example, MD that changed the mode in 2014 are part of the control group for those MD that changed the model in 2013 or earlier). Besides, it is impossible to visualize the threshold value that precedes the expected change in the trend.

One way to test the assumption in such a case is to include dummy variables for treatment before and after a model change[54]. We include two dummies equal to 1 when there are 1 or 2 years before the model change. Thus, the baseline specification is modified in the following way:

$$y_{it} = \tau_t + \pi_i + \sum_{j=-2}^{-1} \beta_j M_{it}(1 \mid t = j + k) + \phi D_{it} + \theta X + \varepsilon_{it},$$

where ***k*** is the year when MD experiences a model switch.

To confirm the parallel trends assumption one tests the hypothesis on equality of two coefficients of added dummies to 0:

$$H_0: \beta_{-2} = \beta_{-1} = 0.$$

Corresponding results of hypothesis testing are in Table 7.

Table 7. Parallel trends assumption evaluation results.

Model	Wald-statistic	Model	Wald-statistic	Model	Wald-statistic
Total expenditure	1,01 (0,36)	Employees in governance	0,89 (0,41)	Total investment	0,03 (0,97)
Educational expenditure	0,6 (0,55)	Employees not in governance	1,47 (0,23)	Investment in organizations of municipal ownership	0,98 (0,38)
Housing and communal services expenditure	1,57 (0,21)	Wage of municipal employees	1,4 (0,25)	Income from property management	0,23 (0,79)
Social expenditure	0,99 (0,37)	Share of tax and non-tax income	0,2 (0,82)	Accounts payable rate	0,98 (0,37)
Employee expenditure	1,75 (0,17)	Tax and non-tax income	0,89 (0,41)	Share of families that received housing	0,36 (0,7)
All employees	1,15 (0,32)	Income grants	0,27 (0,76)	Share of depleted water supply network	0,44 (0,64)

Note: Test p-values are in the parentheses.

Source: CAG calculations.

In all cases, the values of the statistics are low, meaning that the unrestricted model (with other dummies) is not better than the restricted model (baseline

[54] Angrist J.D., Pischke J.S. Mostly harmless econometrics: An empiricist's companion. Princeton university press, 2008. Vol. 2. Autor D.H. Outsourcing at will: The contribution of unjust dismissal doctrine to the growth of employment outsourcing // Journal of Labor Economics. 2003. Vol. 21. No. 1. P. 1–42.

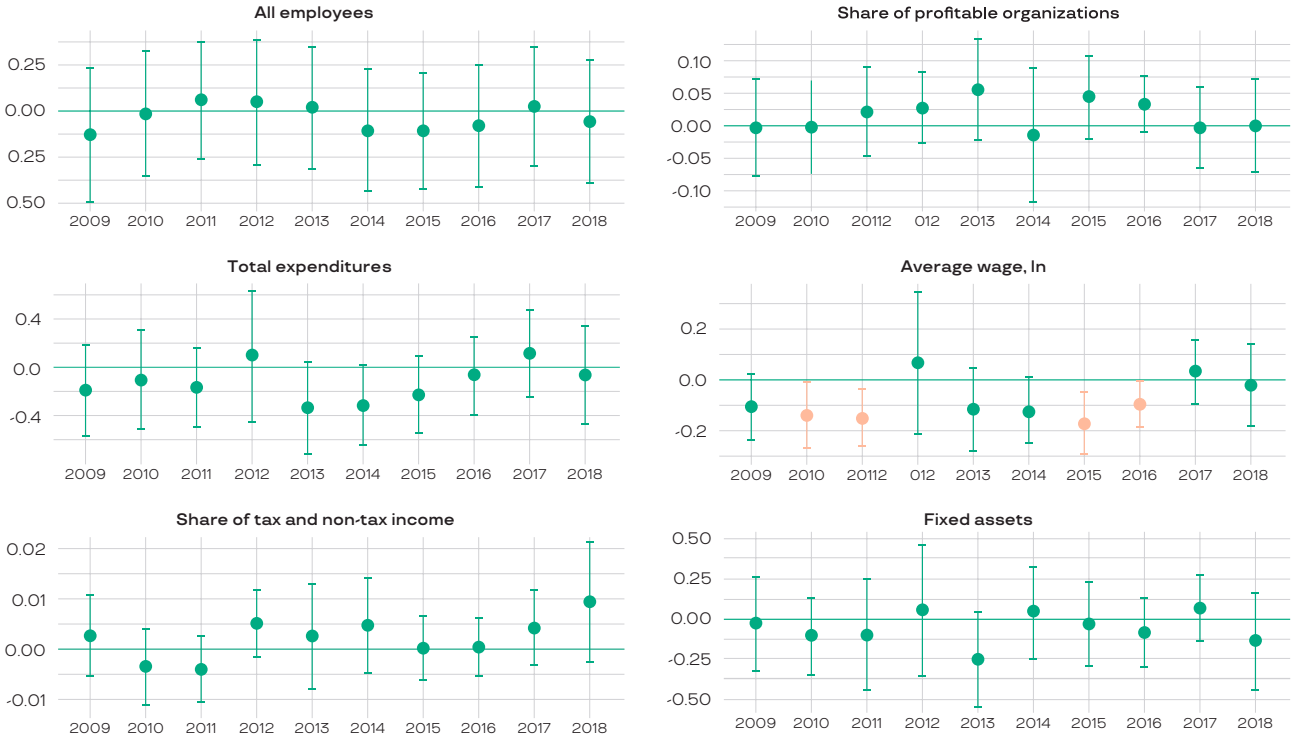
model). It implies that for all models, dummies preceding the model change are not significant. Such a result confirms that the parallel trends assumption holds.

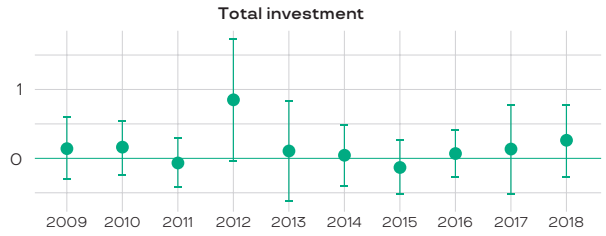
2. **The assumption is that the distribution of the treatment is exogenous for outcomes at the beginning of the observational period. This assumption is also often formulated as a condition that the timing of receiving treatment must not depend on the outcomes at the beginning.** It does not mean that there should not exist any differences between control and experimental groups. There should be no bias towards the relationship between receiving treatment in later years and some characteristics of the municipalities.

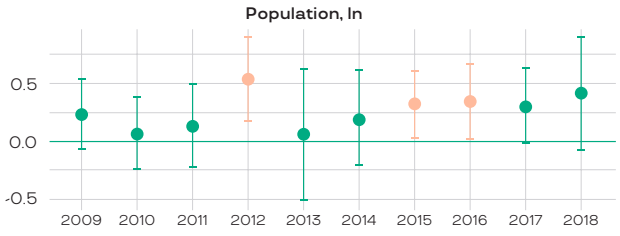
To assess the validity of the assumption, one uses regressions of municipal characteristics in 2008 on a set of dummy variables of a cohort, i.e., the group of municipalities that switched to the appointment model in a particular year. The base category is municipalities that held elections in 2018.

Figure 10 depicts estimates of the coefficients from regressions. The coefficients of cohorts are not significant for all key variables used to evaluate the effect. Although systematic differences are observed for the variable "Logarithm of the average wage," they are uniform across all periods (confidence intervals intersect), i.e., one cannot say that this factor is linked to the year when MD received the treatment. **Thus, the assumption about exogeneity of treatment in time within the model used in the research holds.**

Figure 10. Estimates of the coefficients from the regression of characteristics of the MD in 2008 on a set of dummy indicators of the MD cohort that switched to the "city manager" or "appointed mayor" model in a particular year.







Source: CAG calculations.

3. **Stable Unit Treatment Value Assumption (SUTVA).** The assumption implies that outcome variables in some units of the analysis (municipalities) do not depend on treatment in other units, i.e., there are no spillover effects.

In the context of the study, such an assumption is probably valid if one considers the direct impact of model change in one region on spending, income, or investment in another. At the same time, the change of the model is highly correlated in the adjacent municipalities. Such correlation appears because of two processes. First is the process of spatial diffusion (section 1.2.2); second, collective switches appeared after 2014 (section 1.2.1). Regional factors are partially solved by including the regional trends in one of the model specifications (Appendix 3).

The problem of correlation between indicators and treatment does not affect the estimates of the coefficients but can distort the estimates of the standard errors. To avoid this problem, one employs clustered standard errors. Grouping the treatment is a prerequisite for clusterization on the level of grouping, not at the level of units of the analysis. Therefore, we cluster standard errors at the level of the region.

APPENDIX 2. THE LIST OF VARIABLES AND DESCRIPTIVE STATISTICS

Table 8. Description of the variables used in the analysis

Variable	Variable description
Model change	Dummy-variable: 1 — if model with appointed mayor, 0 — if elected.
Population	Population of municipal division
Fixed assets per capita	Fixed assets at the end of the year in municipal non-profit organizations (per capita)
Share of tax and non-tax income	Ratio of income excluding all types of grants to all budget revenues of the municipal division
Share of profitable organizations	Ratio of profitable organization to total number of organizations
Average wage	Average monthly gross wages of employees of large and medium-sized enterprises and non-profit organizations
Share of depleted water supply network	Ratio of outdoor running water network length requiring replacement to total network length
Families with housing needs	A number of families that are registered as requiring housing
Number of schools	Number of educational facilities at the beginning of the year per 1000 citizens
Number of pupils	Number of educational pupils at the beginning of the year per 1000 citizens
New houses	Number of houses build on the territory of the municipal division
Total expenditure	Total expenditure of the municipal budget (per capita)
Educational expenditure	Total expenditure of the municipal budget on education (per capita)
Housing and communal services expenditure	Total expenditure of the municipal budget on housing and communal services (per capita)
Employee expenditure	Total expenditure of the municipal budget on employees (per capita)
Social expenditure	Total expenditure of the municipal budget on social policy (per capita)
All employees	The number of people employed in organizations of municipal ownership
Employees in governance	The number of people employed in organizations of municipal ownership occupied in «Governance and military security»

Variable	Variable description
Employees not in governance	The number of people employed in organizations of municipal ownership occupied all sectors excluding «Governance and military security»
Wage of municipal employees	Average wage of municipal employees
Total investment, ln	Total capital investment made by the organizations on the territory of municipal division (per capita)
Investments in organizations of municipal ownership, ln	Total capital investment in organizations of municipal ownership (per capita)
Income grants	Income from all types of interbudgetary grants (per capita)
Tax and non-tax income	Total tax and non-tax income of the municipal budget (per capita)
Income from property management	Income from management of municipal and governmental property (per capita)
Share of families that received housing	Ratio of families that received housing to all families with housing needs at the end of preceding year
Accounts payable rate, ln	Accounts payable of organizations of municipal ownership (per capita)
Length of roads owned by MD	Length of roads in the ownership of the municipal division

Table 9. Descriptive statistics.

Variable	N	Mean	SD	Min	Max
Model change	15,93	0,45	0,5	0	1
Population, ln	15,627	10,24	1,02	6,39	14,3
Fixed assets per capita, ln	14,744	4,31	0,61	2,44	6,11
Share of profitable organizations	13,501	0,66	0,22	0	1
Average wage, ln	14,878	10,59	0,29	9,99	11,47
Number of schools (per 1000 citizens)	15,334	0,61	0,41	0,02	4,66
Number of pupils (per 1000 citizens)	14,948	106,55	20,69	63,47	187,48
New houses, ln	14,267	8,66	1,54	4,63	13,05
Length of roads owned by MD, ln	12,249	5,12	1,15	1,39	6,94
Families with housing needs	14,251	6,03	1,15	3,22	9,61
Total expenditure, ln	14,256	3,86	0,47	2,97	5,54
Educational expenditure, ln	14,111	3,21	0,44	1,54	4,72
Housing and communal services expenditure, ln	13,532	0,75	1,57	–4,75	4,18

Variable	N	Mean	SD	Min	Max
Employee expenditure, ln	12,643	0,96	0,59	–0,27	2,99
Social expenditure, ln	14,115	1,07	1,04	–1,83	3,21
All employees, ln	14,759	4,15	0,35	3,1	5,18
Employees in governance, ln	14,719	2,05	0,49	0,97	3,3
Employees not in governance, ln	14,695	4,03	0,36	2,75	5,06
Wage of municipal employees, ln	14,669	10,37	0,24	9,89	11,14
Share of tax and non-tax income	13,607	0,28	0,14	0,05	0,72
Income grants, ln	13,640	3,54	0,56	2,32	5,39
Tax and non-tax income, ln	13,607	2,46	0,58	0,93	4,26
Total investment, ln	14,596	3,37	1,25	0,7	7,5
Investments in organizations of municipal ownership, ln	14,02	1,45	0,76	0,08	3,77
Income from property management, ln	13,548	–0,31	0,99	–3,18	2,7
Accounts payable rate, ln	7,559	1,23	0,84	0,003	3,63
Share of families that received housing	14,108	0,12	0,16	0	2,83
Share of depleted water supply network	14,357	0,43	0,23	0	1

APPENDIX 3. ROBUSTNESS CHECK

1. Distortion of the results is possible because several other events have happened during the period from 2008 to 2018. Such events could be the alternative drivers of the results. In 2014 regions obtained the right to determine selection model for the municipalities. It led to a massive change of the municipal charters with compliance with regional laws. At the same time, the heads selected within a previous model continued to work in many municipalities. It does not contradict the argument of the study that links incentives of the head of MD to institutional form. However, the results can be biased since we use judicial change of the model in the charter as an indicator of model switch. Besides, the overall Russian economy after 2014 was either in recession (2015) or stagnation. This fact could influence the expenditure of municipalities. Time fixed effects should account for that, but one has to consider possibility that results are driven by economic downturns. All **models are re-estimated on the trimmed sample from 2008 to 2014** to resolve concerns about events that could have potential effect on the results.

2. Imputation of the missing data can have potential impact on the results, and, consequently, the overall robustness of the model. Thus, **all models are re-estimated on the raw data without data imputation**. This procedure leads to average shrinkage of the sample by the factor of 1.5.

3. The key prerequisite for DiD estimation is the parallel trends assumption. Failure of the assumption makes causal interpretation of the results impossible. Appendix 1 contains proofs that the assumption holds within the framework of the research. However, we use additional DiD specification used when there are several available periods. In particular, **the models are re-estimated with inclusion of parametric regional trends**. It allows accounting for the pre-existing dynamics in the indicators. Regions were chosen for the modelling of trends to account for common background and correlation within regions.

Results can be found in Table 10. In general, the estimates are robust to changes in the specification. For variables which are statistically significantly affected by the change of the model, in most of the specifications the direction of the effects remains the same and keeps statistical significance (with the exception of models where expenditure is divided into categories). Inclusion of the regional trends decreases the estimates of the effect size but does not affect significance.

Table 10. Robustness check results.

Indicator	2014	W/o imputation	Regional trends	Indicator	2014	W/o imputation	Regional trends
Total expenditure	−0,049** (0,019)	−0,04** (0,02)	−0,021* (0,012)	Total investment	−0,058 (0,048)	−0,043 (0,036)	0,017 (0,037)
Educational expenditure	−0,013 (0,021)	−0,028* (0,016)	−0,005 (0,010)	Investments in organizations of municipal ownership	−0,144*** (0,055)	−0,111*** (0,039)	−0,061** (0,031)

Indicator	2014	W/o imputation	Regional trends	Indicator	2014	W/o imputation	Regional trends
Housing and communal services expenditure	−0,356*** (0,108)	−0,313** (0,121)	−0,154* (0,086)	Income from property management	−0,024 (0,035)	0,025 (0,033)	−0,001 (0,027)
Social expenditure	−0,056 (0,050)	−0,099 (0,062)	0,013 (0,042)	Accounts payable rate	0,033 (0,042)	0,008 (0,029)	−0,004 (0,023)
Employee expenditure	−0,063 (0,036)	−0,055** (0,027)	−0,023 (0,02)	Share of families that received housing	0,003 (0,008)	0,001 (0,007)	0,003 (0,004)
All employees	−0,061** (0,026)	−0,031** (0,014)	−0,027** (0,012)	Share of depleted water supply network	0,006 (0,009)	0,011 (0,01)	−0.000 (0,007)
Employees in governance	−0,017 (0,02)	−0,036* (0,018)	−0,003 (0,009)				
Employees not in governance	−0,065** (0,027)	−0,032** (0,016)	−0,028** (0,013)				
Wage of municipal employees	−0,021 (0,013)	−0,005 (0,009)	0,002 (0,006)				
Share of tax and non-tax income	2,841** (1,387)	2,045** (0,847)	1,268** (0,63)				
Tax and non-tax income	0,083 (0,055)	0,034 (0,035)	0,041 (0,027)				
Income grants	−0,087*** (0,031)	−0,09*** (0,023)	−0,042*** (0,015)				

***p < 0,1; **p < 0,05; ***p < 0,01.**

Note: All models include specifics sets of control variables. Standard errors clustered at a regional level are in parentheses. The table contains coefficients of the variable "Model change" from the corresponding models in tables 5-7 in section 2.4.

center
for advanced
governance