Devolution, Local Efficiency, and Resource Allocation: Evidence from Russian Cities*

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Abstract

Although there exists a number of studies about decentralization, it has rarely been examined in non-democracies. Local officials in non-democratic regimes are accountable upwards, to the center, and downwards, to the local population. This paper compares elected and appointed mayors in contemporary Russia. It leverages the federal regulation to phase-out local elections, which allows to apply difference-in-differences methodology. The empirical analysis is based on a new budget dataset for 463 Russian cities and over 9 millions city-level public procurement purchases. The paper focuses on three outcomes: taxation, efficiency in procurement and distribution of procurement contracts to local vs. non-local firms. Information about a future change from selection by election to the selection by appointment makes mayors spend more, tax more, be less efficient and divert more municipal contracts to non-local suppliers. These results are amplified in cases with elected governors, who are more likely to monitor mayors' behavior. Selection rule explains the heterogeneity of fiscal outcomes through differences in the local officials' incentives. Subnational elections in non-democracies incentivize local politicians to be more efficient, but mostly to preserve their positions in the office.

Key Words: recentralization, local elections, appointment, accountability, favoritism, local efficiency, public procurement, Russia

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1 Introduction

Decentralization and its causes and consequences are widely studied in the comparative politics literature.[1] However despite a developed literature about competitive authoritarianism (Levitsky and Way, 2010) and how elections can enhance the local population's understanding of the autocratic government's policies (Manion, 2006) or improve officials' selection and promote better policies at the local level (Grossman, 2014; Martinez-Bravo et al., 2017), decentralization in non-democracies is quite understudied and mainly explores the effects on economic performance (Beazer, 2015) and public goods provision (Malesky, Nguyen and Tran, 2014; Beazer and Reuter, 2019*b*).

Recent theoretical work suggests that local officials can be held accountable when their careers depend on the local residents and when public services can only be observed by the local population (Myerson, 2020). But what happens if these local officials are appointed from the top in a highly centralized political system? Does it make them less responsive to the local population and more responsive to higher level politicians? And how do these choices by local officials impact local development, public goods provision, and fiscal outcomes? I examine these larger theoretical questions in the context of contemporary Russia. While there is a sizable literature about elections and the selection rule[2], it has generally been focused on career patterns (Buckley, Garifullina, Reuter and Shubenkova, 2014), and consequences of rent-seeking for vote mobilization (Beazer and Reuter, 2019*a*) and public goods provision(Szakonyi, 2018, forthcoming; Beazer and Reuter, 2019*b*). This paper, on the other hand, makes two main contributions. First, unlike the existing literature that explores aggregated levels of resource distribution and public goods provision, it focuses on a broader set of choices that local officials can make. Second, it theorizes accountability paths of local officials, which help to examine the effects of decentralization on a new set of outcomes about

[1] See a large literature about decentralization in democracies (Manor, 1999; Bardhan and Mookherjee, 2000; Fisman and Gatti, 2002; Besley and Coate, 2003; Bardhan and Mookherjee, 2006; Faguet, 2012).

[2] Differences between elected and appointed officials can impact efficiency, accountability, and legitimacy patterns (Levin and Tadelis, 2010; Enikolopov, 2014; Kirkland, 2017; Hessami, 2018).

local efficiency and fiscal behavior.

The paper conceptualizes subnational authoritarianism as a principal-agent model with multiple principals. In a non-democratic environment elected local officials (mayors or local executives) act as the agents of two principals: higher-level politicians and the local population. This creates an *accountability trade-off* for the agents who are caught between the demands of their two principals: higher-level officials and the local population. Both high-level and local-level politicians are office-seeking. The selection rule - by election or by appointment, thus, shapes which principal the agent is primarily responsible to. Elected officials are incentivized to maintain their local popularity, whereas appointed officials wish to maintain their popularity among the higher-level politicians who appoint them. However, there exists channels of informal accountability, since higher-level politicians have ways of sanctioning elected officials, and the local population can sanction appointed officials through social means. The theory discusses a further possible complication, when the higher-tier politicians are themselves elected and accountable to multiple principals. For instance, how will the incentives of local politicians differ if they are appointed by higher-level politicians who are elected themselves? The paper emphasizes that monitoring is key for higher-level politicians to impact local officials' behavior.

This paper explores the impacts of decentralization and selection rule changes on the local fiscal outcomes in contemporary Russia. This helps to understand the incentives of local politicians, and to explain heterogeneity in local fiscal and efficiency outcomes. Furthermore, the current literature views local officials as independent actors, ignoring the multi-tier structure of the Russian state. This study describes a theoretical dilemma that local officials face in a multi-tier government: should they choose to be responsive to the local population or to higher-level politicians? I use new data on 463 Russian cities for the period from 2011 to 2018, and explore how changes in the selection rule of both mayors and governors can explain variation in revenue and spending, the efficiency of spending through pricing in the public procurement contracts, and the distribution of the procurement contracts between

different types of firms.

Studies of the effects of decentralization in autocracies have been handicapped by endogeneity problems. Sometimes it is hard to disentangle whether the effects are driven by decentralization and the presence of subnational elections or by the heterogeneity in subnational economic development or subnational political regimes. To avoid such endogeneity concerns, I exploit a Russian federal regulation imposed in 2014 that allowed regional authorities to change the selection rule of city mayors from elections to appointments, and use difference-in-differences design to estimate the effects. The empirical analysis relies on the novel data about city-level selection rule changes and originally collected city-level budget and public procurement data. I collected a dataset of city-year selection rule by tracking the city charters' changes. Budget and public procurement dataset were originally obtained and cleaned using computational algorithms. The final dataset covers all the Russian municipalities that preserved a city status *("gorodskoy okrug")* from 2011 to 2018.

This paper uses basic budget data of revenues and resource allocation - local taxation and local spending. However, it also supplements this aggregated data with information from a database of approximately nine millions of public procurement purchases[3] that helps to proxy efficiency and distribution of such spending. To measure the efficiency of spending, I compare the price paid for similar items across cities. To measure the distribution of spending, I use the location of suppliers. The combination of budget data and detailed information on public procurement allows me to characterize local political economy in three dimensions: how much resources is spend and whether these resources mostly come from taxation, the level of rents that are diverted (measured by the efficiency in contracts), and the distribution of rents (measured by the distribution of contracts to various suppliers).

The difference-in-differences analysis indicates that before the imposed federal regulation elected mayors spend less and tax less, tend to spend locally by choosing local suppliers, and exert effort to hold down the cost of public contracts. However, after the regulation

[3]The existing literature relies on public procurement data as an indicator of both efficiency (Best, Hjort and Szakonyi, 2018) and clientelism (Szakonyi, forthcoming).

about the change from selection by election to selection by appointment, mayors started to tax more, spend more and less efficiently and divert more contracts to non-local regional firms. This result is especially strong in cases of elected governors, who are more likely to monitor mayors' behavior. I examine two potential mechanisms for this change: selection mechanism and incentives mechanism. I show that the results are not a product of differences in personal traits of elected and appointed mayors, but rather of differences in responding to the changed incentives.

These findings not only indicate the importance of local elections in non-democracies, but they also demonstrate how the institutional changes above the local administration level can change preferences and accountability paths of local officials.

2 Theory

In a multi-tier political system, there can exist several layers of principal-agent relationships. This paper focuses on the behavior of three actors: higher-level officials (the center or regional politicians), local politicians (for instance, local executives in my primary case), and local population. Both higher-level politicians and mayors are assumed to be office-seeking and not policy-seeking. They value office more than other alternative career paths because of the rents that they can extract by being in office. Thus, they have strong incentives to remain in office.[4] Citizens, on the other hand, seek to maximize effective resource allocation and public goods provision.

There are two ways in which local politicians can be selected to power: elected by the local population or appointed by higher-level politicians.[5] [6] Depending on the selection

[4]There exist evidence that politicians who do not perform well or maintain bad economic outcomes are systematically punished through being demoted, fired or even prosecuted. For example, see Buckley et al. (2020).

[5]For simplicity, here I assume that they are appointed just by the higher-level administration. Although, for instance, in Russia they are appointed by a special committee that consists of both governor's and local legislature's representatives.

[6]There is a substantial literature about differences between elected and appointed officials, which contains contradictory results about what form of entering the office provides better policy outcomes (Linz and

rule a mayor can be accountable upwards — to the higher-level officials or downwards — to the local population. These are the direct channels of accountability. Literature claims that officials are accountable to those who oversee their behavior and define their career prospects (Bardhan and Mookherjee, 2006; Myerson, 2020). Therefore, mayors are *formally accountable* to those who select them to power. Elected officials maintain electoral accountability to the local population, whereas appointed officials are accountable upwards to higher-level politicians who make decisions about their appointment.

However, there can exist a certain level of *informal accountability*. Elected mayors in non-democratic regimes must also respond to the preferences of higher-level politicians to obtain political endorsement and informal support for future elections. Appointed mayors, on the other hand, will have incentives to maintain efficiency in spending and in provision of public goods to avoid protests and to be considered good administrators by the local population (Tsai, 2007).

The combination of formal and informal accountability creates an *accountability trade-off* for local politicians.

(De-)centralization and Accountability

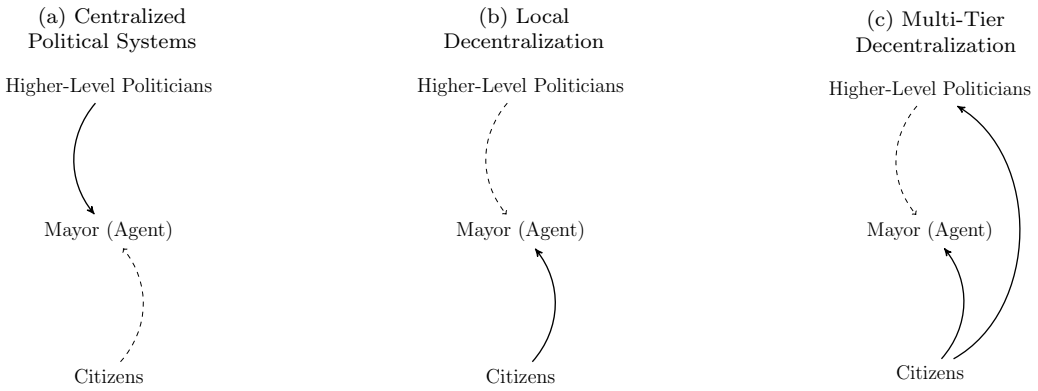
Subnational elections serve as one of the key features of a decentralized political system. In a democratic political system the fear of losing elections provides the incentives for local officials to be accountable to the local voters (Ferejohn, 1986; Austen-Smith and Banks, 1989; Banks and Sundaram, 1993; Gailmard, 2012).

In a centralized political system with no elections at the local level (Figure 1a), local actors are formally dependent on higher-level politicians, since local appointees' chances to be reappointed and stay in office depend on the preference of upper-level political actors. In a way, this idea is driven from principal-agent relationships between politicians and

Valenzuela, 1994; Evans, 1995; Evans and Rauch, 1999; Zhang et al., 2004; Besley, 2005; Luo et al., 2007; Levin and Tadelis, 2010; Mu and Zhang, 2011; Enikolopov, 2014; Persson and Zhuravskaya, 2016; Kirkland, 2017; Hessami, 2018).

bureaucrats-appointees (Bendor, Taylor and Van Gaalen, 1987; Gailmard, 2012; Gailmard and Patty, 2012; Slough, 2018). However, local politicians can still be informally accountable to the population they govern (Tsai, 2007) . Citizens can observe economic conditions and public goods provision at the local level. And even though they cannot directly impact officials' reelection, they can indirectly influence their reappointment through complaints and protest activity.

Figure 1: Principal-agent relationships between the actors



Note: Figure (a) shows principal-agent relationships in a centralized political system with upward accountability of local political actors. Figure (b) indicates an accountability trade-off that elected local actors are facing in case of decentralization in non-democracies. Figure (c) indicates principal-agent relationships in cases of multi-level decentralization in non-democracies. Thick arrows indicate paths of formal accountability, dashed arrows - paths of informal accountability.

In another situation depicted in Figure 1b, local election co-exists with centralization at the higher-level of the political system. This pattern creates a unique problem for local officials. On one hand, their careers are formally dependent on the ability to maintain a relationship with the local population. The local population seeks to maximize the amount of local public goods provided and the degree to which the spending on those goods is retained locally. As described by the existing literature (Ferejohn, 1986; Powell Jr and Whitten, 1993; Biglaiser and Mezzetti, 1997; Ferraz and Finan, 2011), citizens can recognize inefficiency and can enforce the accountability of their local representatives by refusing to

reelect the incumbent, by protesting about bad economic conditions in the locality[7][8] or by performing blame attribution (Iyengar, 1989; Javeline, 2003; Beazer and Reuter, 2019*a*).[9]

On the other hand, since these politicians are embedded in a political system with a strong non-democratic center, they must find some means of co-existing with higher-level (central and regional) politicians as well. These higher-level officials can informally reward local politicians through electoral endorsement and promotion, or they can punish disloyal or inefficient local politicians through prosecution and imprisonment (Buckley et al., 2020).[10] This informal accountability of local politicians can also be enforced through electoral endorsement, re-appointment, or administrative promotion (Banks and Weingast, 1992; Raffler, 2019; Martin and Raffler, forthcoming). In such a situation, elected local officials happen to be agents of two principals (Gailmard, 2009): higher-level politicians and the local population (Figure 1b).

This paper explores how changes between selection by election and selection by appointment at the local level lead to changes in the accountability paths and in local politicians' strategies. It examines the observable implications of such changes for the local economic

[7]One of the most recent protest activities with the political consequences for the regional politicians happened in Sheis municipality in Arkhangelskaya oblast in 2018-2019. The chain of protests started in July 2018 and were aimed to prevent the landfill construction near the Sheis railway station. Among the ecological consequences of the landfill, experts named pollution of the nearby north rivers, which will ultimately lead to the drain of the polluted waters in the Barentsevo Sea and the ocean. First protests were locally oriented, but led to multiple ecological protests. The landfill construction was put on hold. In January 2020, the court decision established that the landfill construction is illegal. Experts claim that these landfill protests led to the resignation of the governor of Arkhangelskaya oblast - Igor Orlov - on April 2, 2020 (URL Source: https://meduza.io/feature/2020/04/03/zhertvy-shiesa?utm_source=telegram&utm_medium=live&utm_campaign=live)

[8]Experts predict that the mayor of the city of Pyatigorsk - Andrei Skripnik - will be asked to resign from his position due to the growth of local population dissatisfaction and protests related to the reconstruction of the parking space of the open air concert platform - "Polyana pesen" (URL Source: https://newstracker.ru/article/general/05-04-2020/glavy-na-vyhod-komu-iz-rukovoditeley-administratsiy-na-stavropolie-grozit-otstavka).

[9]See Lü (2014) of how local population in China tends to give credit to the central governemnt for the good policies, and, alternatively, blames local governemnt for failed reforms and bad economic outcomes. Additionally, see Ran (2017) of how higher-level Chinese governments shift the blame to local authorities, and local governments become blame-takers for the unsuccessful socio-economic policy outcomes.

[10]The KGI 2019 Report shows that about 15% of mayors end up their careers because of the prosecution and imprisonment (Grineva et al., 2019, 31). Recent events in Khabarovskiy Krai, when a governor of the region (one of the few non-"United Russia" governors) - Sergey Furgal - was arrested for allegedly participating in the organized murders that happened 15 years ago. He resigned on July 20, 2020, while still being under arrest. These events caused a large protest movement in Khabarovsk.

and political outcomes.

Higher-Level Politicians' Preferences. Thus far we examined the differing incentives of local officials, and how they can be accountable to higher-level politicians. But, higher-level politicians' preferences might vary as well depending on how they come to power themselves - through elections or appointments.

Like local officials, higher-level politicians are office-seeking. Elected higher-level officials, like elected local officials, serve as agents of the voters (Figure 1c), on whose support they rely for their own reelection. To help with the reelection (by mobilizing the electorate), higher-level politicians also rely on the local officials and local elites. There are many policy areas that higher-level politicians cannot influence and which are the prerogative of local authorities. In order to make an influence in those areas, they have to invest in strict monitoring of the mayors who act as their agents and potentially brokers.

Non-elected higher-level politicians are more detached from the local population than elected ones, since the local population does not directly select them, and since their career prospects depend on the decisions by the central government or some other narrow selectorate. Monitoring is costly, and for higher-level politicians it is not reasonable to invest in monitoring if their career prospects do not directly depend on the local level. This weakens the incentives of appointed higher-level politicians to monitor mayors; instead they allocate their energy to pleasing their superiors. Therefore, only elected higher-level politicians will have strong incentives to oversee and monitor local politicians' behavior (Grossman, 2014; Martinez-Bravo et al., 2017).

Observable Implications

How do the different types of accountability influence the policy-making? Recall that both local and higher-level politicians are office-seeking. The policy that local officials select depends on which principal they are accountable to and on the ability of this principal to monitor them.

Taxation. There are several sources of local revenue including taxes, non-tax sources, such as administrative fees, and budget transfers (eg., subsidies and donations). Tax funds consist of local taxes (eg., various property taxes) or fixed shares of federal taxes (eg., income tax, organization revenue taxes or taxes on national resources). Voters cannot observe budget transfers, but they can observe taxation and are sensitive to it and want it to be light, conditional on the public service provision. Local officials can achieve higher levels of taxed amounts through either increasing the tax rates or increasing the tax collections.

Both local elites and the local population would prefer to maintain lower taxation. Local elites that often come from local businesses want to preserve lower organization taxes and fees. An average voter can recognize lack of public goods provision or the low quality of the goods provided. Also, she has prior beliefs that increased income or property taxes are not going to improve public goods provision, but rather will enhance inefficiency, corruption, and clientelism. Hence, an average voter would prefer smaller tax rates or less rigorous tax collection. Consequently, an accountable elected local official will maintain lower levels of taxation.

Hypothesis 1. *Elected mayors tax less or less rigorously than appointed mayors.*

In the analyzed Russian case, the majority of the municipal-level revenue comes from the income taxes. Income tax, which constitutes the majority of the local tax resources, is a federal tax, which means that it is defined by the federal regulations. Since the shares of the federal taxes are fixed by tax laws,[11] local officials cannot impact the tax rates. But they definitely can impact how rigorously taxes are collected. Therefore, I expect to observe an effect of selection rule on the taxes amounts collected.

Spending locally. To be reelected, mayors rely on the support from the population of their constituency, which includes both local elites and average voters. Local elites might

[11] For instance, for the income tax 15% of the collected taxes stays in the city-level budgets, whereas the rest 85% goes to the regional budgets.

contribute to their reelection campaign (Gulzar, Rueda and Ruiz, 2020) or can serve as a source of political influence that is independent of the regime (Reuter and Szakonyi, 2019). Voters prefer local development and local public goods provision. Politicians choose to implement those policies that maximize their political support. Although Grossman and Helpman (1994) point out that the specific policy interests of local elites (or interest groups) and an average voter can contradict, local politicians can try to satisfy both of the support groups. One of the key local elites groups active in politics is local business. They do business with the local government and are interested in government contracts. Allowing local businesses to benefit from becoming primary local suppliers and contractors for different types of procured goods in that locality can guarantee their future reelection support. Providing the local public goods through these local government contracts in the locality can satisfy the voters.

Appointed mayors, on the contrary, will be willing to divert resources to non-local suppliers. That will help them to transfer resources to non-local elites and guarantee their reappointment. This logic leads to the following prediction:

Hypothesis 2. *Elected mayors are more likely to spend locally than appointed mayors.*

Efficiency. Local politicians must choose not only whom they distribute rents to, but also what the levels of those rents are. This paper does not consider efficient resource allocation between sectors of public spending, since voters often cannot recognize budget constraints[12] and always demand all possible public goods provided.[13] Also, although sometimes it is hard to recognize voters' preferences about certain policies, they definitely care about efficient behavior of their representatives, and they seek for improvement of economic conditions.

Hence, the paper studies efficiency of local politicians in the public procurement process.

[12] Healy and Malhotra (2013) states that voters often make mistakes about politicians' accountability due to their physiological biases.

[13] Interview with an expert on municipal statistics and municipal governance, Professor of Higher School of Economics Olga Molyarenko, January 16, 2020.

In other words, efficient behavior does not necessarily mean that resources will be allocated towards those policies that an average voter would prefer, but rather that there will not be overpaying for a defined set of goods and services just because they are procured from a certain supplier. As a result, I conceptualize inefficiency as the differences in prices for simple commodity goods.

In theory, for elected politicians, choosing a local supplier is not always the most efficient behavior. Any restriction on the number or type of the suppliers, such as a choice of local suppliers, may lead to either lower quality, higher prices or both of these factors. Alternatively, for appointed officials, choosing a non-local supplier is not always an indicator of favoritism. Substantial oversight from the higher-level (central and regional) politicians can make local officials preserve reasonable spending and choose not just any non-local supplier, but the best suppliers.

Both elected and appointed officials have incentives for inefficiency: either through transferring rents to themselves or to those who contribute to their career prospects. And the only thing that allows to control inefficient behavior is monitoring. Elected officials are aware of the voters' oversight, which might guarantee their efficient behavior. Appointed officials, on the other hand, will be efficient only when they know that they are being highly monitored from the top-level politicians who appoint them to power.

Hypothesis 3. *Elected mayors are more efficient in public procurement than appointed mayors.*

Monitoring from the top will most likely happen in cases of elected top-level politicians, who hope to mobilize the electorate to support their own reelection. They also do not want to be blamed for inefficient policy-making in the municipal level. So, they have strong incentives to monitor local politicians and how efficient they redistribute local resources. We should thus expect the effect of local selection rule to be conditional: with no effect on efficiency when higher-level politicians are elected.

3 Centralization and Local Elections in Russia

Russia is a federal state which includes national, regional and local (municipal) tiers of administration, each of which has separate legislative and executive branches. The national level is controlled by the directly elected President, a directly elected legislative body, and an executive branch that is formally shaped by the legislature in coordination with the President. The regional level consists of 85 regions.[14] Each region has a directly elected legislative branch and a directly elected governor who shapes the regional executive branch. The local, or municipal level, includes thousands of villages, towns and cities, which have directly elected legislative bodies. The head of the executive branch - the municipal administration - can be directly elected by the population or appointed by a special committee, which includes members of a city legislature and regional governor's representatives.[15] [16]

The Russian political system has become considerably more centralized in the last twenty years (Ross, 2003; Gelman and Ross, 2010).[17] This transition had been widely studied in the research about autocratic rule in Russia (Gelman and Lankina, 2008; Ross and Campbell, 2008; Svolik, 2012; Gelman, 2014) and about authoritarianism at the subnational level (Gelman and Ross, 2010; Starodubtsev, 2018). Like these studies, I explore how local elec-

[14]This number varies from 83 to 89 during the post-Soviet period due to the unification of some regions and the elimination of some autonomous *okrugs*. The number of 85 regions is shown in the Constitution of the Russian Federation and includes two regions that were added with the Crimea peninsula.

[15]Although the committee consists from half of the city legislature representatives and half of the governors' representatives, there is anecdotal evidence about dominant governor's role in the appointment process. In the end of 2014 the governor of Rostovskaya oblast - Vaslilij Golubev - basically lobbied the candidacy of his deputy governor - Sergey Gorban - for the position of the city-manager in the regional center - Rostov-on-Don. Eventually, Sergey Gorban served as a city-manager and a head of the city administration in the regional capital from 2014 to 2016 (URL Source: http://utro-news.ru/jelitnye-ptency-gubernatora-golubeva/).

[16]The switch to appointed mayors created several models of the local organization of power. One of the systems is "two-headed", when positions of the head of the city and the head of the city administration are held by different politicians. Here the head of the city is a member of the city legislature and is chosen by it, whereas the head of the city administration, city-manager, is appointed by a special committee. However, after 2016, another scheme- "single-headed" - has become more common. It assumes that a head of the city who is selected by a special committee is also in charge of the city-administration. This system currently dominates at the city-level. In this study, I consider both of the schemes as appointment procedures, since they both lack direct elections of the city administrations' heads.

[17]See the examples of the Federal districts' creation in 2000, and cancellation of the governor's elections in 2005. Literature discusses the relationship between the center and regions, and the interactions between regional and local levels (Zhuravskaya, 2000; Treisman, 2001; Desai, Freinkman and Goldberg, 2005; Treisman, 2007; Freinkman and Plekhanov, 2009).

tions shape incentives of politicians and local outcomes. Unlike these studies, I work with local-level data and leverage the federal regulations that allowed phase-out of local mayoral elections to estimate the impact of selection rule changes on the incentives of the local officials.

Identification Strategy

The paper exploits a non-random switch between mayoral elections and appointments at the city-level. At first, mayors, the heads of the cities' administrations, were elected by the local population in a majority of cities. However, starting in 2006, municipalities were allowed to make their mayors appointed.[18] By 2014, approximately 40% of the Russian cities still had directly elected mayors (See Figure 3). However, under Federal Law No.136, issued in May 2014[19], regional governments were allowed to define the selection rule in all the municipalities.[20] This created a push towards switching to the newly established system of appointed mayors in large municipalities. From the cities' perspective the transition from elections to appointments ceased to be optional and quite sporadic, becoming more regulated and mandatory. With this law effective, regional legislatures were allowed to establish new regional laws that defined the selection rule for all the municipalities in a given region (Figure 2).

This federal regulation led to an almost complete transition to mayoral appointment in Russia. Figure 3 shows the annual data of the number of cities that preserved mayoral elections in the period from 2011 to 2018.

In the context of my difference-in-differences design, this 2014 federal regulation is the

[18] Federal Law No.131 from October 6, 2003 "About general principles of municipal administration in the Russian Federation". The main idea of the law was to change mayors' status, and implement a "two-headed" system of administration, when mayors who were the heads of the executive branch have now become the heads of the legislative branch, whereas the heads of the executive branch - the city administration - has been appointed by a special committee and received the name "city-manager".

[19] This new Federal Law No.136 introduced amendments to the Federal Law No.131 from October 6, 2003. It was issued in May 2014, and then modified in June 2014 and later in February 2015.

[20] https://www.rbc.ru/newspaper/2019/06/27/5d13649c9a794748630ec159 (Accessed on September 2, 2020)

Figure 2: Time-Line of the Imposed Treatment

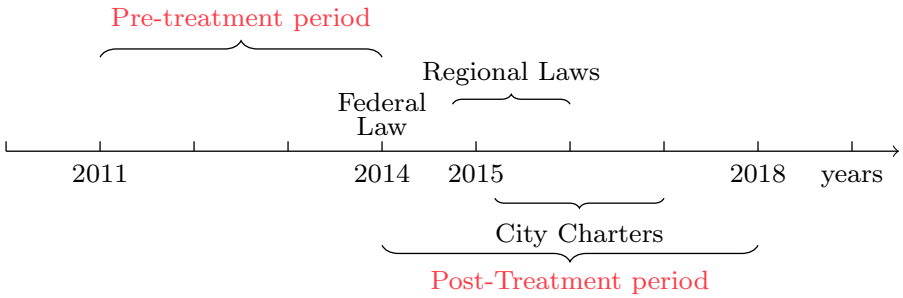
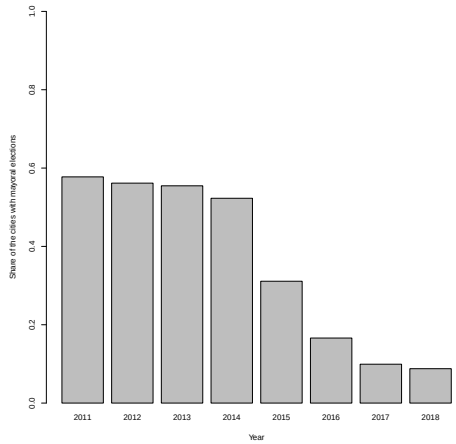


Figure 3: Dynamics in the share of the cities that preserved mayoral elections



Note: This figure shows a share of the cities that kept mayoral elections. The plot is built based on the data about selection rule changes in the city charters.

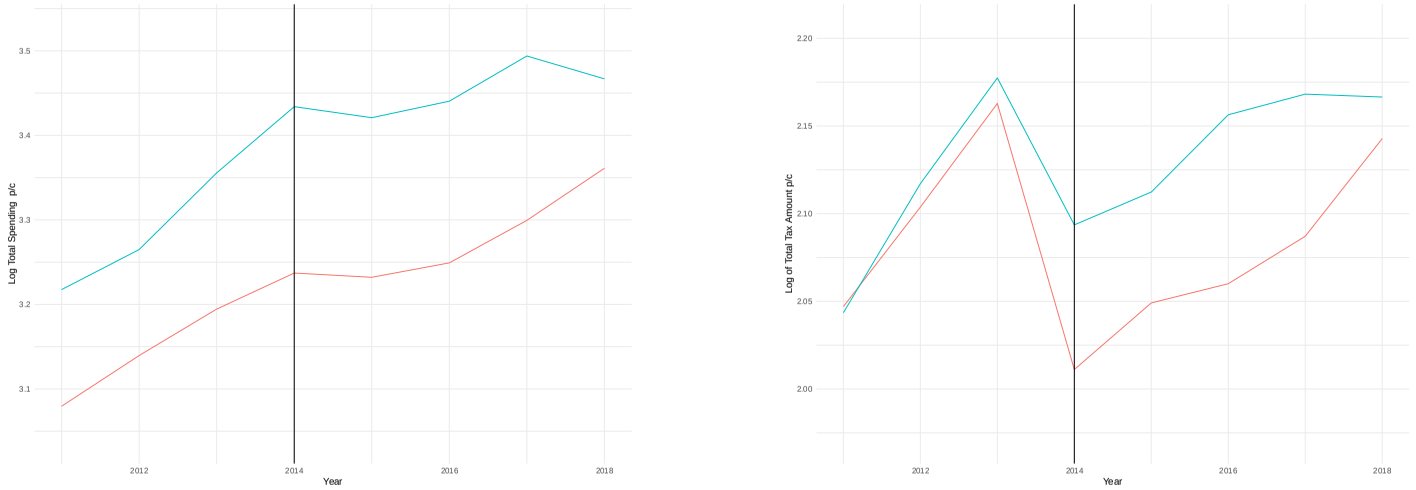
treatment interference. Cities that changed to appointment of their mayors prior to 2014 shape a control group. Those cities that had elected mayors at the moment of 2014 and thus had been treated by the new federal regulation are a treatment group. Figure B.1 in the Appendix shows a geographical distribution of treatment and control group. The small number of cities that still had mayoral elections in 2019 are excluded from the sample.[21] I use a difference-in-differences design to estimate the effect of the change from selection by election to selection by appointment. Since the treatment group was not randomly selected, the difference-in-differences design requires an assumption that without a treatment two groups are behaving in parallel (Angrist and Pischke, 2008). Figures 4-6 show the pre-treatment trends and they appear to be parallel.

4 Data

This paper built up a new dataset of city-level political and fiscal characteristics in Russia. In the Russian political system cities possess wide authorities in delivering public goods and social benefits(Ross and Campbell, 2008, 254). Local mayors are regarded as having a large amount of power and being important political players (Sirotkina, 2019). During the period of this study (2011-2018) 463 municipalities preserved the city status *("gorodskoy okrug")*.[22]

[21]URL Source: https://www.bbc.com/russian/features-43632483 (Accessed on April 6, 2020).
[22]The sample excludes Moscow and St.Petersburg due to their regional status.

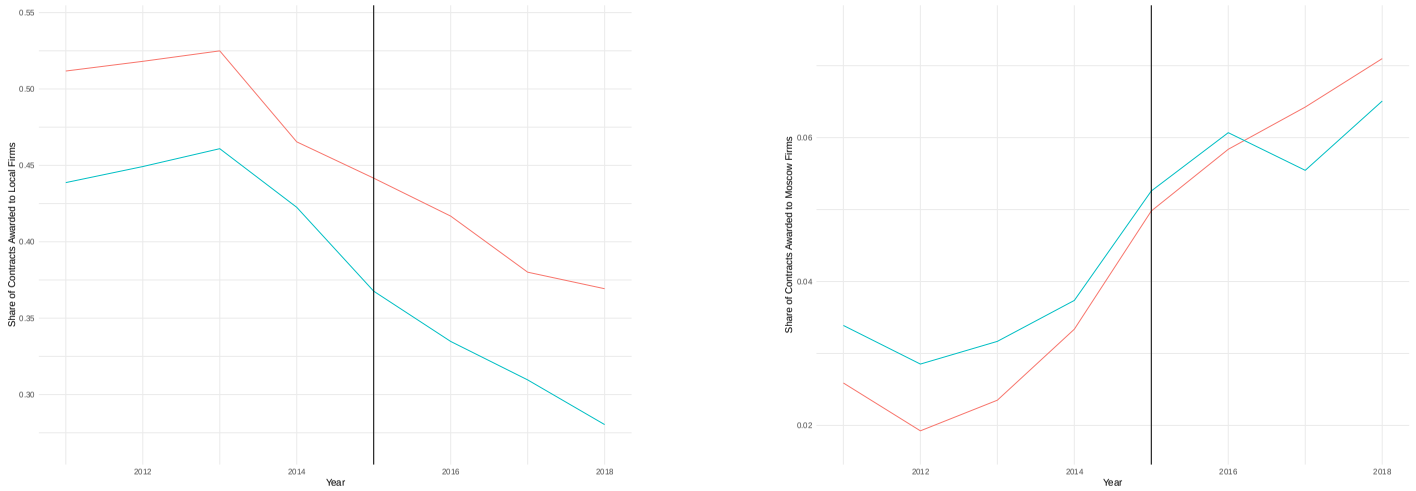
Figure 4: Parallel Trends for the Municipal Budget Outcomes



(a) (b)

Note: Green line shows a trend for a treatment group, and a red line - for control group. Vertical black line indicates the time of treatment assignment and divides the time frame on pre- and post-treatment periods. Plot (a) shows parallel trends for the logarithm of total spending per capita. Plot (b) shows parallel trends for the logarithm of total amount of collected taxes per capita. Plot (c) shows parallel trends for the logarithm of transfers from other levels of the budget system per capita.

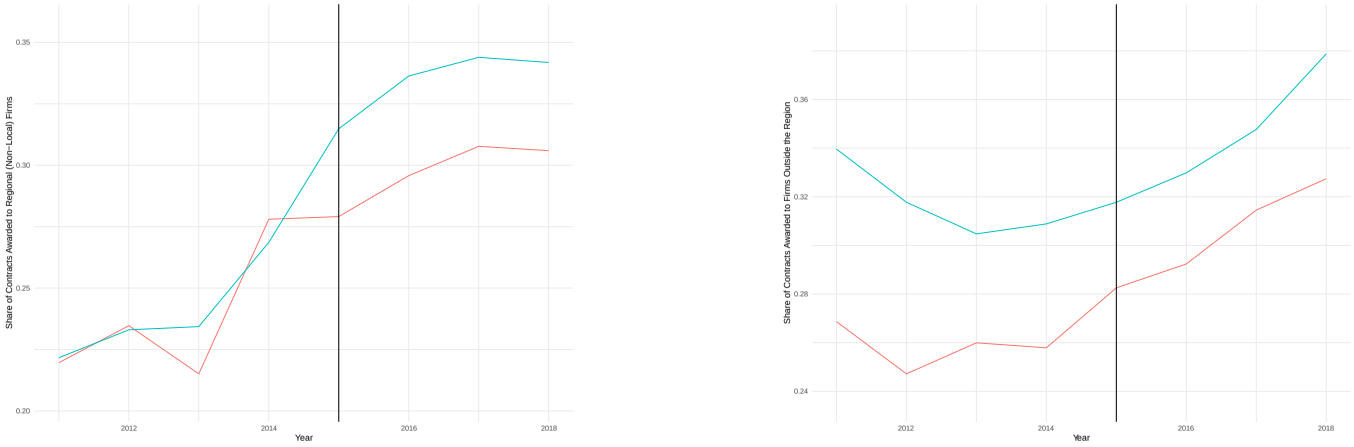
Figure 5: Parallel Trends for Contracts' Distribution



(a) (b)

Note: Green line shows a trend for a treatment group, and a red line - for control group. Vertical black line indicates the time of treatment assignment and divides the time frame on pre- and post-treatment periods. Plot (a) shows parallel trends for the share of local suppliers. Plot (b) shows parallel trends for the share of Moscow suppliers. Plot (c) shows parallel trends for distributing for the sharer of regional suppliers that are located outside of a given city jurisdiction. Plot (d) shows parallel trends for the share of suppliers outside of a given region.

Figure 6: Parallel Trends for Contracts' Distribution [Cont'd]



(a) (b)

Note: Green line shows a trend for a treatment group, and a red line - for control group. Vertical black line indicates the time of treatment assignment and divides the time frame on pre- and post-treatment periods. Plot (a) shows parallel trends for the share of local suppliers. Plot (b) shows parallel trends for the share of Moscow suppliers. Plot (c) shows parallel trends for distributing for the sharer of regional suppliers that are located outside of a given city jurisdiction. Plot (d) shows parallel trends for the share of suppliers outside of a given region.

The existing data on the selection rule of subnational executives in Russia runs only till 2011 -2012 and uses only 200 largest cities (Buckley, Frye, Garifullina and Reuter, 2014; Buckley, Garifullina, Reuter and Shubenkova, 2014). To supplement it, I collected data for all the city districts for a more recent period of 2011-2018. These data were collected by tracking the city charters' changes through such legal platforms as ConsultantPlus[23], Garant.Ru[24], income and tax declaration data source[25], Central Election Commission[26] and regional election commission websites, websites of the cities and city administrations and multiple online and newspaper sources that track the legal changes.

The first major outcome is the aggregated city-level spending and taxation. This data was collected from the Federal State Statistic Service website.[27]

Measures of the efficiency and distribution of spending are based on the rich data of the municipal procurement purchases. This data was obtained from the server of Russian Unified Information System on Public Procurement.[28][29] The economics and political economy literature uses public procurement and government contracts as a measure of efficiency, collective actions failure, clientelism, and collusion between business elites and public officials (Coviello and Gagliarducci, 2017; Williams, 2017; Best, Hjort and Szakonyi, 2018; Tkachenko and Esaulov, 2019). I analyze approximately 9 million procurement purchases, which represent near complete set of public procurement purchases for the analyzed period that were

[23]URL Source: http://www.consultant.ru (Accessed on October 17, 2019)

[24]URL Source: http://www.garant.ru (Accessed on October 17, 2019)

[25]URL Source: https://declarator.org (Accessed on January 22, 2020)

[26]URL Source:http://www.cikrf.ru/eng/ http://old.cikrf.ru (Accessed on October 17, 2019)

[27]The official website of the Federal State Statistic Service is accessible here: https://www.gks.ru/munstat (Accessed on October 17, 2019). Scraping codes for extracting the existing municipal level statistics are written using Python 3.7 and available upon request.

[28]This source contains all the available public procurement information and is open-accessed according to federal laws about contract system in the procurement sphere: 94-FZ (prior to January 1, 2014) (http://www.consultant.ru/document/cons_doc_LAW_54598/) and 44-FZ (from January 1, 2014) (http://www.consultant.ru/document/cons_doc_LAW_144624/).

[29]Scraping codes for the selected samples of the contracts directly from the Russian Unified Information System on Public Procurement website are written in Python 3.6 and available upon request. The full collection of procurement notifications, protocols, and contracts is obtained from the FTP server of Russian Unified Information System on Procurement (ftp.zakupki.gov.ru). The complete collection of all the procurement data is preserved in the machine-readable XML formats, and requires extensive parsing. The parsing codes are written in Python 3.7 and available upon request.

financed out of the city budgets. This data allows me to identify the total amount of procurement purchases, contract prices, and which firms (local, non-local regional, Moscow, or firms outside of a given region) are awarded the contract. A full description of search, selection and filtering methodology is described in the Appendix A.

I work with several characteristics of procurement purchases to estimate efficiency and distribution. For measures of efficiency, I use the item prices in the public procurement purchases. Item price is a price for purchasing an item of product or fulfilling a certain task or service according to an agreed contract. Analyzing contracts in a particular sector (the so-called off-the-shelf goods, contracts on procuring simple commodity goods) for a given location in time allows me to trace the paths of overspending, which usually indicates inefficiency.[30] In empirical models with efficiency outcomes, I control for the size of the contract, measured by the total price per contract and by the amount of purchased quantity. Total price indicates the final amount of money that the customer agrees to pay to the contractor; and quantity reveals the amount of items purchased by a given contract.

To measure distribution, I use a set of firms' characteristics that identify the location of suppliers who win the contracts. Here I work with the near universal collection of city-level procurement purchases without specifying the sectors or the types of the procured goods or services. Since there exist multiple procurement purchases for each city in a given year, I then aggregate this contract-level data to the city-year level. This allows me to define shares of contract that are awarded to different types of firms. I define a share of local suppliers, suppliers located in Moscow, suppliers located in the same region but outside of a locality, and suppliers that are located outside a given region. The location of the firm is identified by the suppliers' physical address.[31] In empirical models with these aggregated data, I control for the average item prices, average total contract prices, and average quantities for a city

[30] Best, Hjort and Szakonyi (2018) consider the prices paid for the purchases of off-the-self goods as a well-defined and quantifiable output.

[31] It is possible that physical address differs from a registration location of the firm. However, since the physical locality is important for business connections and potential elite networking, I identify location based on the physical address.

per year.

5 Empirical Analysis

To estimate treatment effect of the 2014 federal regulation, I estimate a following model:

$$y_{it} = \beta_0 + \beta_1 * T_i + \gamma * POST_t + \mu * (T * POST)_{it} + \tau * C_{it} + \varepsilon_{it} \quad (1)$$

where y_{it} is an outcome variable for the city i in a year t; T_i is an indication of a group, and equals to 1 when the city is in a treatment group, and 0 - otherwise; $POST_t$ is a dummy for the post-treatment years, and equals to 1 if it is a post-treatment period, and 0 - otherwise; and C - is a matrix of control variables. The coefficient of interest here is μ, since it shows the effect of being in the treatment group after the treatment was assigned and represents an average treatment effect.

Note that I am thus estimating the effect of the announcement of the national policy about local selection rule modifications rather than the effect of local elections themselves. A more common approach in literature is to leverage staggered electoral terms to estimate the effect of the election reforms (Beazer, 2015; Beazer and Reuter, 2019*a*; Motolinia, 2020). However, in the Russian case during the analyzed period a number of mayors resigned early or called for early elections which made electoral terms endogenous to mayors' strategic behavior. Therefore, the sharp treatment is more preferable for the purposes of causal identification.

Post-treatment period includes all years greater or equal to 2014 (since the federal regulation was passed in the first half of 2014). For the procurement contract data, I use the date of signing the contract. Since the bidding process takes some time and the finalized signing date is always later then the date when procurement was tendered, I use $(t + 1)$ as a post-treatment period, where t indicates a year of treatment interference. In other words, post-treatment period will include all years greater or equal to 2015. Budget data, on the other hand, captures revenues and spending effective the end of the current year. Hence, for

spending and taxation outcomes, I use ($t \geq 2014$) as a post-treatment period.

According to my theoretical predictions, the selection rule of the higher-level politicians may also play a role. To control for that, I exploit a selection rule variation for regional leading executives - governors. During the same period that there was a centralization of authority at the local level, regional executive branches also experienced institutional changes. Between 1996-2005 and after 2012 governors were directly elected, whereas in the period from 2005 to 2012 governors had to be appointed by the center.[32] The variation in governors' selection rule produced by these federal regulations allows me to control for the type of governor that is in power by coding 1, when they are elected, and 0 - otherwise.

Table 1: Municipal Budget Indicators

	Dependent variable:					
	Ln(Total Spend p/c)			Ln(Taxes p/c)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.141***			0.007		
	(0.054)			(0.049)		
Post	0.137***	0.146***	0.104***	−0.037**	−0.010	−0.043***
	(0.015)	(0.015)	(0.020)	(0.017)	(0.015)	(0.017)
EG			0.149***			0.143***
			(0.037)			(0.023)
Treatment*Post	0.034*	0.042**	0.068***	0.062***	0.050**	0.055**
	(0.020)	(0.021)	(0.025)	(0.023)	(0.022)	(0.025)
Treatment*EG			−0.022			−0.033
			(0.042)			(0.041)
Post*EG			−0.068*			−0.077***
			(0.039)			(0.023)
Treatment*Post*EG			−0.028			0.020
			(0.045)			(0.042)
Constant	3.139***	3.177***	3.162***	2.106***	1.921***	1.909***
	(0.042)	(0.010)	(0.010)	(0.040)	(0.010)	(0.010)
City FE	×	✓	✓	×	✓	✓
Observations	3,058	3,058	3,058	3,047	3,047	3,047

Note: *p<0.1; **p<0.05; ***p<0.01. Robust standard errors clustered on the city level are in the parentheses. Level of observations is city-year. All models are estimated after excluding the outliers and using OLS. Treatment variable contains all the cities that are in the treatment group, Post - represents the post-treatment period (≥ 2014). EG is a dummy variable, which equals 1 if in a given year the city is under an elected governor, and 0 - when it is under an appointed governor.

Taxation. Table 1 shows the results for the city-level budget indicators. It reveals that

[32]The change from selection by election to selection by appointment was imposed by the Decree of the President of the Russian Federation from December 27, 2004 No.1603 "About the procedures of selecting candidates for the positions of the heads (the heads of the executive branch) of the subjects of the Russian Federations". The suspension continued until 2012, when Dmitry Medvedev issued the Federal Law about resumption of governors' elections. The Federal Law No.40-FZ from May 2, 2012 "About establishing the changes in the Federal Law "About the general principals of organizing legislative and executive branches in the subjects of the Russian Federation" and in the Federal Law "About the main guarantees of the electoral rights and rights to participate in the referendum of the citizens of the Russian Federation" ".

being in the treatment group in the post-treatment period increased both spending and taxation. Although the estimated substantive effects seem small, in the scale of municipal-level budgets, it is quite distinct. Receiving information about selection rule changes from election to appointment is associated with the increase of spending per capita by approximately 4% and increase of collected amount of taxes per capita by approximately 5%. Increasing municipal taxation allows mayors to gain more self-revenue and, potentially, spend more. Controlling for the governor's selection rule type does not change the spending or taxation patterns.

This finding provides support for Hypothesis 1 that elected mayors tax less. When the information about selection rule change is revealed, elected mayors anticipate the institutional change and act as appointed mayors by taxing more and, as a result, spending more.

Spending locally. Table 2 indicates that the announcement of changes from selection by election to selection by appointment at the local level is associated with a smaller share of contracts being awarded to local and Moscow firms and a larger share of contracts awarded to regional suppliers, that operate outside of a given locality. Significant results are only observed for the share of Moscow suppliers and regional suppliers. This supports the proposed Hypothesis 2 and shows that elected mayors prefer to spend locally. However, after the changes are announced, they start diverting resources from the locality.

There are two possible mechanisms that explain this result. One is that selection rule change made elected officials care less about local efficiency and electoral accountability and instead made them please higher-level officials by diverting funds and resources from the locality. Another possible explanation is related to the incentives of the local officials to favor local firms.

Lobbying is rare in the Russian case due to the commitment problem between politicians and firms.[33] But elected politicians still rely on the local elites and want to maintain the

[33]The results of the Szakonyi (2020)'s survey of the Russian firms indicate that only about a quarter of firms participated in the survey believes that politicians can fulfill their promises to favor the firms.

stream of this support for their reelection.[34] This is evidence against the local favoritism mechanism. Elected mayors spend locally due to electoral accountability: they care about local efficiency and the prosperity of local businesses as part of their support group. After the selection rule change is announced, elected officials do not have to worry about reelection anymore. Hence, they do not have to benefit their local elites, who mostly consist of the local businesses. Instead they will care more about regional elites.

The theory predicts that these results are amplified by the monitoring mechanism of the top-level politicians. To test this hypothesis, Table 2 (Models 3, 6, and 12) interact mayoral treatment announcement with the governors' selection rule type. This helps to examine the effects of treatment interference in cases when governors are elected and when the monitoring mechanism is occurring. The results indicate that under elected governors, change from mayoral selection by elections to selection by appointment is associated with a lower share of contracts distributed to local firms and Moscow firms, and, on the contrary, a higher share of the contractors from outside of the region. These results support the idea that monitoring by higher-level agents can change resource allocation by diverting more funds to suppliers from outside of the region, which are more likely to be the best suppliers.

Appointed governors, on the other hand, have fewer incentives to monitor local officials. However, they do care about rents and about regional and center elites that form their selectorate and groups of interest. In cases of appointed governors, change from selection by election to selection by appointment at the local level is associated with a higher share of regional firms and, consequently, a lower share of the suppliers from outside of the region (Table 2 Models 9 and 12). These effects might be explained by the regional favoritism which local officials practice as part of their upward accountability.

[34] "The most obvious way to punish a politician is to orchestrate their exit from politics during next election campaign. Firms can switch their endorsements or fund alternative candidates. < ... > The simplest option is to ensure that these people fail to get re-elected" (Szakonyi, 2020, 57) and (Bekbulatova, 2017).

Table 2: Distribution of All Contracts

	Dependent variable:											
	Local			Moscow			Reg (Non-Local)			Outside Reg		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Treatment	-0.060^{***}			0.008^{**}			0.001			0.059^{***}		
	(0.020)			(0.003)			(0.015)			(0.013)		
Post	-0.117^{***}	-0.102^{***}	-0.094^{***}	0.034^{***}	0.037^{***}	0.023^{***}	0.069^{***}	0.057^{***}	0.036^{***}	0.051^{***}	0.048^{***}	0.058^{***}
	(0.009)	(0.009)	(0.012)	(0.003)	(0.003)	(0.004)	(0.009)	(0.010)	(0.013)	(0.010)	(0.010)	(0.013)
EG			-0.108^{***}			-0.001			0.078^{***}			0.032
			(0.027)			(0.008)			(0.026)			(0.023)
Treatment*Post	-0.018	-0.019	0.016	-0.010^{**}	-0.003	0.006	0.035^{**}	0.037^{**}	0.037^{*}	-0.019	-0.020	-0.054^{***}
	(0.013)	(0.013)	(0.018)	(0.005)	(0.005)	(0.006)	(0.014)	(0.015)	(0.019)	(0.014)	(0.015)	(0.019)
Treatment*EG			0.091^{**}			0.018			-0.008			-0.085^{***}
			(0.040)			(0.017)			(0.038)			(0.032)
Post*EG			0.091^{***}			0.023^{**}			-0.044			-0.046^{*}
			(0.029)			(0.009)			(0.028)			(0.026)
Treatment*Post*EG			-0.136^{***}			-0.030^{*}			0.007			0.129^{***}
			(0.043)			(0.018)			(0.041)			(0.036)
Constant	-0.021	0.040	0.034	-0.004	0.038^{***}	0.037^{***}	0.594^{***}	0.632^{***}	0.637^{***}	0.435^{***}	0.327^{***}	0.327^{***}
	(0.084)	(0.055)	(0.055)	(0.014)	(0.013)	(0.013)	(0.071)	(0.046)	(0.046)	(0.062)	(0.050)	(0.050)
City FE	×	✓	✓	×	✓	✓	×	✓	✓	×	✓	✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	3,642	3,642	3,642	3,300	3,300	3,300	3,642	3,642	3,642	3,642	3,642	3,642

Note: *p<0.1; **p<0.05; ***p<0.01. Robust standard errors clustered on the city level are in the parentheses. Level of observations is city-year (contract purchase-city-year level data was aggregated to the city-level format). Local uses the share of the local suppliers in a given city-year; Moscow - the share of the Moscow suppliers; Reg (Non-Local) - suppliers from the same region, but not the same locality; Outside Reg - share of the suppliers from outside of the region. All models are estimated using OLS. Treatment variable contains all the cities that are in the treatment group, Post - represents the $(t+1)$ post-treatment period (≥ 2015). EG is a dummy variable, which equals 1 if in a given year the city is under an elected governor, and 0 - when it is under an appointed governor. All models are estimated with three control variables: price per item in the contract, total price per contract, and the purchased quantity per contract.

Efficiency. Conceptualization of efficiency is based on the assumption that if overspending and inefficiency occurs, it happens across all the sectors. However, for complicated services, such as construction and maintenance, it is often hard to disentangle inefficient overspending from reasonable spending towards expensive labor and supplies. Thus, it will be more appropriate to measure overspending using a set of comparable contracts that procure the same off-the-shelf goods. Furthermore, this approach helps to avoid concerns about quality of the good. Most of the simple commodities procured from different firms are similar in their quality. Hence, inefficiency can be narrowed down to overpricing.

I use data on the price per item for simple homogeneous commodities: white paper of A4 format and simple black pencils.[35] These goods are procured regularly using municipal-level funds. Also, since the goods provided are identical to each other, higher prices represent lower efficiency. Methodologically, the structure of the difference-in-differences design allows me to compare city-level trends and to estimate the effect of treatment interference on overspending. For the set of contracts on procuring paper, I simply use the item price in the contract. However, for contracts on purchasing pencils, I normalize the outcomes by subtracting the average city-year consumer prices for black pencils from the item price in a contract, and as a result, measure overpricing. To do so, I obtained annual city-level data on the average consumer prices for this type of good from the Russian Federal Statistic Service.[36] [37] This additional exercise with prices allows me to establish the price benchmarks and to solve a problem of unobserved price trends in a city-year dimension.

Table 3 shows the efficiency proxy results. Note that in these models the level of observations is a contract per city per year, and not the aggregated data across all the purchases in a city-year. All the models control for quantity and the total price of the contract to take into account the size of contracts. Models 1-3 report the effects of the information about the selection rule changes on the item prices in the contracts on purchasing office paper of A4

[35]The detailed procedure of how these contracts were filtered and selected is described in Appendix A.
[36]URL Source: https://www.fedstat.ru/indicator/31448 (Accessed on June 7, 2020).
[37]Unfortunately, the choice of goods was limited by the availability of average consumption price data.

format. The change of the mayoral selection rule is associated with an increase in item price for paper. Although these effects are conditional on city-level differences and national trends in paper prices, they still indicate a significant positive effect. Models 4-6 in Table 3 show the effects of the information about selection rule change on overpricing of the contracts for purchasing black pencils. Even after controlling for the quantity and the total price of the contract, we still observe a positive effect on overpricing. Substantially, results in Table 3 indicate that the information about new regulations change mayoral behavior and make them overspend on simple commodity contracts. Although it is hard to empirically test such an extrapolation, I can still assume that overspending on simple commodities represents general inefficiency. Hence, this supports a prediction in Hypothesis 3 that elected mayors are more efficient in public procurement. Additionally, these results indicate that the choice of elected mayors to distribute locally described in the previous subsection is not associated with the increase in inefficiency, which means that local favoritism is rather unlikely.

In this set of results, the effect of the interaction with elected governors is insignificant. Substantially, it can support an idea about the monitoring mechanism. In cases of elected governors and strong oversight from the top, there are no significant differences in efficiency between elected and appointed (or soon-to-be appointed) mayors. In other words, information about selection rule change will modify distribution of rents from local to non-local, but will not change the level of rents distributed.

Recall that these results are estimating the effect of the announcement that future mayors will be appointed, but not the institution of appointment itself. Any effects are thus reflective of incumbents anticipating the changes. After they learn that they might be subject to reappointment if they wish to serve the next term, they will choose to award less contracts to local firms. It will also be amplified by the higher-level politicians' preferences, which are defined by their own selection rule. When governors are elected, mayors will behave efficiently and will more likely start choosing suppliers from outside of the region. In cases of appointed governors, mayors will start to divert resources from local businesses to distribute

Table 3: Efficiency Proxies

	Dependent variable:					
	Prices per Item (Paper)			Overpricing (Pencils)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	−0.014	0.089	0.119	−0.849**	−1.173	−1.094
	(0.010)	(0.077)	(0.077)	(0.398)	(1.785)	(1.755)
Post	0.324***	0.313***	0.262***	−3.855***	−4.340***	−2.817***
	(0.007)	(0.008)	(0.014)	(0.276)	(0.239)	(0.399)
EG			0.146***			−3.734***
			(0.040)			(1.047)
Treatment*Post	0.031***	0.035***	0.052**	0.151	0.826**	1.371**
	(0.012)	(0.013)	(0.022)	(0.468)	(0.408)	(0.638)
Treatment*EG			−0.242*			0.583
			(0.130)			(2.346)
Post*EG			−0.073*			1.575
			(0.042)			(1.097)
Treatment*Post*EG			0.211			−1.029
			(0.131)			(2.401)
Constant	4.967***	4.919***	4.911***	−2.178***	−1.040	−0.580
	(0.014)	(0.068)	(0.068)	(0.249)	(0.722)	(0.713)
City FE	×	✓	✓	×	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Observations	3,622	3,622	3,622	1,837	1,837	1,837

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors are in parentheses. Level of observations is contract-city-year. All models are estimated after excluding outliers and using OLS. Treatment variable contains all the cities that are in the treatment group, Post - represents the $(t+1)$ post-treatment period ($\geq$ 2015). For models with fixed effects the estimated coefficients for the treatment group variable correspond to the baseline city fixed effect. All models are estimated with two control variables: total price per contract and the purchased quantity per contract.

rents to the governors' connections.

Robustness Checks

There are several potential concerns about these findings. First, the effect can possibly be explained by the rotation of mayors that could have occurred in the time of the treatment interference. In this situation the results will not be explained by the selection rule, but rather by the mayors' individual characteristics. To rule out this possibility, I subsample those cities in the treatment group where the same mayor was in power during the time of the treatment interference and kept the mayoral position for at least another year. Tables C.1-C.2 in Appendix C thus attempt to further separate the effect from expectations about changes in the mayoral types and the selection rule itself. These results are consistent with the baseline models. It supports an idea that the effect is driven not by the selection rule changes or the types of the candidates, but by the changes in the mayors' beliefs.

Another potential concern can be related to high variation in distribution of procurement contracts between different sectors. Since I use aggregated data across all the diverse contracts, one can argue that the choice of a supplier can be explained by the supply of the contract. For instance, some types of goods can be supplied by the local firms, while others can be available only by non-local firms. The size of the contract can also play a role in the distribution choices. Although the baseline models control for the quantity purchased and the cost per item, it might be useful to see whether the distribution results hold when the good is held constant. To do so, I subsample comparable simple commodity contracts to eliminate the problem of contract heterogeneity. Table C.3 in Appendix C presents the results for the subsample of the contracts for purchasing paper. The results are similar to the baseline models. They indicate that the information about the mayors' selection rule change leads to an increased share of regional non-local suppliers and to a lower share of contractors from outside of the region. The results hold for the cases of elected governors as well, showing a lower share of local suppliers and a higher share of firms from outside of the

region.

6 Mechanism Explanation

The baseline results indicate that the information about a change to selection by appointment led to higher taxation, higher spending, and more contracts distributed to non-local firms. In addition, elected mayors appear to pay less for simple commodities than appointed ones do. These results are also conditional on whether the governors are elected or appointed. This corresponds to the initial theoretical idea about principal-agent relations and the effect of top-level politicians' preferences.

Since the main models estimate the effects of received information about future changes in the selection rule rather than the selection rule change itself, it is clear that mayors have beliefs that impact their strategic choices. There can be several potential mechanisms that can explain such results: selection mechanism, lame duck effect, and incentives mechanism. It is possible that elected and appointed mayors are different in their pre-treatment characteristics, and the candidates that are elected or appointed are different when they are selected. On the other hand, it is possible that to-be-elected and to-be-appointed mayors are different in their incentives, driven by the way they are selected.

Selection Mechanism

The existing studies show that elected and appointed officials do not have substantial biographical differences. Buckley, Frye, Garifullina and Reuter (2014) point out that most differences between appointed and elected candidates are not driven by the selection process. Differences between the two types of mayors are modest; elected candidates are usually more highly educated, whereas appointed ones on average have less experience in business, and more often just hold a degree in governance or public administration (Buckley, Garifullina, Reuter and Shubenkova, 2014).

Due to the lack of detailed biographical data of the mayors studied in this paper, it is impossible to compare pre-treatment individual characteristics of elected and appointed mayors. However, I leverage staggered election terms of the mayors to estimate the effect of the variation in the selection rule. Contrary to the baseline design, here I examine not the effect of the announced changes, but of the selection rule itself. To test this idea, I directly compare officials selected by elections with those selected by appointment. Since mayoral terms are staggered in Russia, there is a variation of selection by election and selection by appointment within a year. Similar to the main results, I exploit governors' selection rule variation and test the interaction between elected mayors and elected governors to check the potential effect of the higher-level politicians' preferences. I test the following model:

$$y_{it} = \beta_0 + \beta_1 * MT_{it} + \beta_2 * GT_{it} + \beta_3 * MT * GT_{it} + \tau * C_{it} + \mu_i + \tau_t + \varepsilon_{it} \quad (2)$$

where y_{it} is an outcome variable for the city i in a year t; MT_{it} is an indicator of a mayor's selection procedure for the city i in a period t, and equals to 1 when she is elected, and 0 - otherwise; GT_{it} is an indicator of a governor's selection procedure for the city i in a period t, and equals to 1 when she is elected, and 0 - otherwise; $MT * GT_{it}$ is an interaction term between governor's and mayor's selection procedures for the city i in a period t; C - is a control variables matrix. μ_i indicates city fixed effects, and τ_t - year fixed effects.

The results in Tables 4-5 show that there is no significant difference between elected and appointed mayors in terms of how they spend, tax, or distribute contracts. They support the idea that the effects occur not between mayors, but within them, and are explained by their modified expectations.

Lame Duck Effect

Expectations can vary, and main effects could possibly be explained by differential expectations about exiting the office. Mayors who anticipate that their current term is the last

Table 4: Municipal Budget Indicators (Terms)

	Dependent variable:			
	Ln(Total Spend p/c)		Ln(Taxes p/c)	
	(1)	(2)	(3)	(4)
Elected Mayors	−0.011	−0.005	−0.009	−0.016
	(0.014)	(0.016)	(0.017)	(0.019)
Elected Governors		−0.014		−0.015
		(0.017)		(0.019)
EM*EG		−0.020		0.022
		(0.022)		(0.022)
Constant	3.107***	3.106***	1.827***	1.832***
	(0.011)	(0.012)	(0.014)	(0.014)
City FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	3,058	3,058	3,047	3,047

Note: *p<0.1; **p<0.05; ***p<0.01. Robust standard errors clustered on the city level are in the parentheses. Level of observations is city-year. All models are estimated after excluding the outliers and using OLS.

Table 5: Distribution of All Contracts (Terms)

	Dependent variable:							
	Local		Moscow		Reg (Non-Local)		Outside Reg	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Elected Mayors	0.006	0.006	0.004	0.007	−0.016	−0.019	0.012	0.016
	(0.011)	(0.013)	(0.004)	(0.005)	(0.013)	(0.016)	(0.013)	(0.015)
Elected Governors		−0.013		0.010**		0.024**		−0.009
		(0.011)		(0.004)		(0.012)		(0.012)
EM*EG		−0.002		−0.009		0.015		−0.015
		(0.014)		(0.006)		(0.016)		(0.015)
Constant	0.006	0.007	0.049***	0.046***	0.643***	0.644***	0.350***	0.348***
	(0.054)	(0.055)	(0.013)	(0.013)	(0.045)	(0.046)	(0.050)	(0.050)
City FE	✓	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	3,642	3,642	3,300	3,300	3,642	3,642	3,642	3,642

Note: *p<0.1; **p<0.05; ***p<0.01. Robust standard errors clustered on the city level are in the parentheses. Level of observations is city-year (contract purchase-city-year level data was aggregated to the city-level format). Local uses the share of the local suppliers in a given city-year; Moscow - the share of the Moscow suppliers; Reg (Non-Local) - suppliers from the same region, but not the same locality; Outside Reg - share of the suppliers from outside of the region. All models are estimated after excluding the outliers and using OLS.

term might change their behavior and act like rent-seekers (Rothenberg and Sanders, 2000; Motolinia, 2020). However, in the analyzed case, several arguments can be made that this mechanism is unlikely.

First, the institution of appointment is likely to increase perceived chance of staying in the office, because many thought that it will change the term limits or how they are counted, similar to what happened in the governors' case.[38]

Second, mayors in Russia are office-seeking, and they chase even a small probability of staying in the office. Early self-exits from politics most likely shut all chances for local politicians to stay in the administrative pool and to be promoted to higher-level positions. Hence, even after they learn about a future selection rule change, they will at least attempt to preserve their positions in the office. And to get the chance to stay in the office thus would require them to please the top-level politicians, and as result, not to behave as inefficient rent-seekers.

Third, recent studies show that many non-loyal or very inefficient mayors are blamed by the center for the economic outcomes (Beazer and Reuter, 2019*a*) or even worse end up being arrested and prosecuted (Buckley et al., 2020). So mayors are unlikely to risk acting inefficiently or performing clientalism, favoritism, and corruption, the cost of which can be very high for them.

Career Concerns

Expectations of the selection rule change and the necessity to preserve the office shapes the incentives mechanism. If this mechanism is correct, there is no difference in the types of candidates who are elected and appointed, but the information about the change in the selection rule modifies the mayors' incentives.

Existing literature establishes that although elected mayors can use their local positions

[38] According to the Federal Law No. 174-FZ from June 2015, after the governors' elections were resumed in 2012, a new count of the term limits has begun.

as a career lift for higher-level positions[39], mayorship is usually the peak of their political careers (Buckley, Garifullina, Reuter and Shubenkova, 2014). Driven by their career concerns, mayors are motivated to stay in office for the next term. Therefore, learning about the selection rule change for the next term affects their incentives and behavior.

Where mayors are elected, they are formally accountable to the local population. Information about selection rule change modifies mayors' behavior. Driven by their desire to get a mayoral appointment, they become accountable to higher-level politicians and start acting like appointees. They spend more budget resources, tax more and distribute less contracts to local firms, and more likely choose some other non-local suppliers. These results are amplified when governors are elected. The theoretical framework suggests that it can be explained by a monitoring mechanism. This appears consistent with the difference in the incentives to monitor local officials. Monitoring is costly for governors, and only elected governors will be investing in strict oversight of the mayors behavior. Such an oversight leads to stronger incentives of mayors to change their behavior, which will be reflected in diverting funds from the locality, but at the same time preserving efficient spending.

7 Conclusion

This study contributes to the literature on decentralization and local development in non-democracies, and argues that elections play an important role in shaping the incentives of local officials. Basing a theoretical framework on the principal-agent relationships between different tiers of administration, this paper addresses a problem of accountability trade-off for the local officials. In particular, it states that local politicians serve as agents of two

[39] A recent report by the Committee of Civil Initiatives (Committee of Civil Initiatives is a liberal non-profit organization in Russia which includes politicians, experts and public figures. It was formed in 2012 as the platform for discussions of various political initiatives, open deliberations, and civil expertise) shows that 21% of mayors who resigned during 2008-2019 period moved up to the regional level of administration (Grineva et al., 2019, 31), indicating a potential career track for local officials. Szakonyi (2020) establishes that the majority of vice-governor positions is also occupied by people who previously worked at the lower level administrative bodies, for instance in the mayors' offices. Therefore, mayors value their local positions, and would want to keep their mayoral positions for another term.

principals: higher-level politicians and the local population. Mayors have to choose between two types of accountability: downwards — to the local population or upwards — to higher-level politicians. This choice is explained by the selection rule at both local and regional level and by the ability of top-level politicians to oversee local officials' behavior. While in general local officials choose to be accountable to those who select them, their choices will vary based on the probability of being monitored.

I test the theoretical predictions using data on 463 Russian cities over the 2011-2018 period. I leverage a federal regulation that was imposed in 2014 and allowed regional authorities to change mayoral selection rule from selection by election to selection by appointment. My empirical results indicate that this regulation caused mayors who have been elected to start acting like appointed mayors; they taxed more, spent more, spent less efficiently and less locally, diverting more contracts to non-local firms. This result is also institutionally conditioned, because it is observed only in cases with elected governors, who are more likely to monitor mayors' behavior. These results are not driven by the selection mechanism of mayors, but rather stem by the differences in the incentives.

There are several implications of these findings. First, elections are important to local accountability even in non-democratic, highly-centralized, political systems. But in non-democracies, politicians are more likely to be driven by the incentives of political survival, rather than electoral accountability. In addition, politicians in these regimes are extremely flexible and can change whether they are responsive to voters or elites very quickly. Second, certain changes in strategic choices will take place only when local officials know that they are being highly monitored, so local politicians' behavior can be conditioned by the selection rule of the higher-level politicians. Finally, this paper shows that it is not enough to study the local level independently and that specifics of principal-agent relations between subnational elites can influence the strategic behavior of local officials.

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Appendix

A Public Procurement Data

A.1 Data Access

Starting 2011, all the procurement, notifications, protocols and signed contracts are mandated to be published at the open platform - www.zakupki.gov. Access to the full collection of the public procurement data can be accessed through the zakupki.gov FTP server. The access to the data is open and free. The collection of this data includes multiple machine-readable XML files that contain information about initial notification for procurement published by the customer, supplementary files describing bidding process if one exists, terms of the final contract, and supplementary materials explaining reasons of the contract cancellations if applicable. Information from initial customer's notification for procurement and data on procurement procedures, eg. bidding process and price negotiation are out of the scope of this paper.

A.2 Merging Datasets

In this paper, I work only with the city-level contracts. I selected contracts that were financed by the city budgets. Using this variable I managed to match city-specific characteristics and information on treatment with the individual contracts data. Contracts that were financed by the federal or regional level, by any other municipalities aside from the cities or by any other institutions are out of the scope of this study, since the city administration does not make a direct decision about budgeting those contracts.

A.3 Firms Data

In this paper I work with the final contract. I use the date of signing the contract as a main time variable that allows me to understand when the contract was assigned to a specific

supplier. Some small amount of contracts have several suppliers or suppliers that are not firm entities but individuals. I do not use such contracts and only select those contracts that have a unique firm-level supplier.

The locality of the firm is coded based on the firms address that is listed as part of the supplier's information. When both registration and physical addresses are provided, the physical address is used as a primary source of the firm's location. I defined *local firm* variable as an indicator of whether the firm is operating in the same city. I used the city information from the supplier's address and matched it with the city names in my sample. *Regional firms* also defined based on the supplier's address data. Similarly, I constructed a *moscow firm* variable, by identifying from a supplier's address whether the firm is located in Moscow region. *Outside firm* is defined based on the suppliers address as well and include all the firms that are not included in the local or regional groups of suppliers.

A.4 Filtering

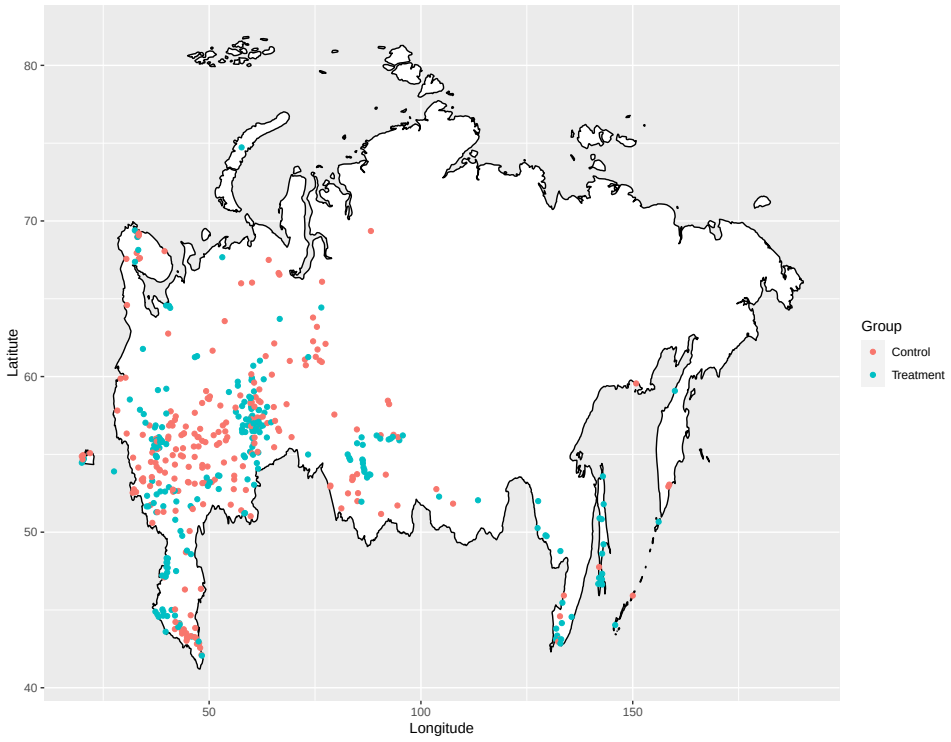
Subsampling contracts is not a trivial task. The codification of the sectors and products changed over time, so it is almost impossible to match them by the sector codes. Hence, while performing any selection of contracts, I have relied on the information about the name of a product or service/task that has to be purchased or fulfilled according to the contract.

I used the set of words to search and filter necessary contracts. For paper contracts, the initial search was done using the Russian translation of a word"paper" - *bumaga*. However, I allowed for different endings of this word to be able to adjust for various grammatical cases. Thus I searched for the contracts that have the word *"bumag "* in their subject. The next step was to clean the results of the search. I selected only contracts that include "A4" words, and excluded all the contracts that contain "colored paper" *("tzvetnaya bumaga")*. This allowed me to include in the sample only contracts for white office paper of the A4 format. For pencils I similarly used the Russian translation of a word "pencil" - *karandash*. I again allowed for various endings and grammatical forms. Additionally, I filtered only

simple black pencils.

B Maps

Figure B.1: Geographical Distribution of Treatment and Control Group for the Federal Law 2014



C Robustness Checks

Table C.1: Municipal Budget Indicators: Subsample of mayors that survived a treatment interference

	Dependent variable:					
	Ln(Total Spend p/c)			Ln(Taxes p/c)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.177***	−0.035**	−0.022	0.014	−0.366***	−0.356***
	(0.057)	(0.014)	(0.014)	(0.051)	(0.015)	(0.016)
Post	0.136***	0.145***	0.102***	−0.038**	−0.011	−0.046***
	(0.015)	(0.016)	(0.020)	(0.017)	(0.015)	(0.017)
EG			0.149***			0.142***
			(0.037)			(0.023)
Treatment*Post	0.031	0.041*	0.069***	0.065***	0.053**	0.060**
	(0.022)	(0.023)	(0.027)	(0.024)	(0.024)	(0.027)
Treatment*EG			−0.014			−0.027
			(0.042)			(0.048)
Post*EG			−0.066*			−0.075***
			(0.039)			(0.023)
Treatment*Post*EG			−0.042			0.012
			(0.045)			(0.049)
Constant	3.137***	3.177***	3.163***	2.107***	1.922***	1.910***
	(0.042)	(0.010)	(0.010)	(0.041)	(0.010)	(0.011)
City FE	×	✓	✓	×	✓	✓
Observations	2,770	2,770	2,770	2,769	2,769	2,769

Note: *p<0.1; **p<0.05; ***p<0.01. Robust standard errors clustered on the city level are in the parentheses. Level of observations is city-year. All models are estimated after excluding the outliers and using OLS. Treatment variable contains all the cities that are in the treatment group, Post - represents the post-treatment period (>= 2014). EG is a dummy variable, which equals 1 if in a given year the city is under an elected governor, and 0 - when it is under an appointed governor.

Table C.2: Distribution of All Contracts: Subsample of mayors that survived a treatment interference

	Dependent variable:											
	Local			Moscow			Reg (Non-Local)			Outside Reg		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Treatment	-0.075^{***}			0.007^{**}			0.009			0.065^{***}		
	(0.021)			(0.003)			(0.016)			(0.014)		
Post	-0.116^{***}	-0.102^{***}	-0.094^{***}	0.034^{***}	0.037^{***}	0.022^{***}	0.069^{***}	0.057^{***}	0.038^{***}	0.050^{***}	0.047^{***}	0.056^{***}
	(0.009)	(0.009)	(0.013)	(0.003)	(0.003)	(0.004)	(0.010)	(0.010)	(0.013)	(0.010)	(0.010)	(0.013)
EG			-0.108^{***}			-0.001			0.078^{***}			0.032
			(0.027)			(0.008)			(0.026)			(0.023)
Treatment*Post	-0.014	-0.015	0.020	-0.012^{**}	-0.005	0.003	0.031^{**}	0.034^{**}	0.033	-0.019	-0.020	-0.054^{***}
	(0.013)	(0.014)	(0.019)	(0.005)	(0.005)	(0.006)	(0.015)	(0.016)	(0.020)	(0.015)	(0.016)	(0.020)
Treatment*EG			0.097^{**}			0.018			-0.016			-0.083^{**}
			(0.045)			(0.022)			(0.041)			(0.037)
Post*EG			0.091^{***}			0.023^{**}			-0.046			-0.044^{*}
			(0.029)			(0.009)			(0.028)			(0.026)
Treatment*Post*EG			-0.144^{***}			-0.030			0.016			0.127^{***}
			(0.048)			(0.023)			(0.045)			(0.040)
Constant	0.015	0.040	0.035	-0.003	0.042^{***}	0.041^{***}	0.571^{***}	0.638^{***}	0.642^{***}	0.424^{***}	0.320^{***}	0.321^{***}
	(0.088)	(0.058)	(0.058)	(0.015)	(0.014)	(0.014)	(0.074)	(0.047)	(0.047)	(0.064)	(0.052)	(0.052)
City FE	×	✓	✓	×	✓	✓	×	✓	✓	×	✓	✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	3,317	3,317	3,317	3,031	3,031	3,031	3,317	3,317	3,317	3,317	3,317	3,317

Note: *p<0.1; **p<0.05; ***p<0.01. Robust standard errors clustered on the city level are in the parentheses. Level of observations is city-year (contracts-city-year level data was aggregated to the city-level format). Local uses the share of the local suppliers in a given city-year; Moscow - the share of the Moscow suppliers; Reg (Non-Local) - suppliers from the same region, but not the same locality; Outside Reg - share of the suppliers from outside of the region. All models are estimated using OLS. Treatment variable contains all the cities that are in the treatment group, Post - represents the $(t+1)$ post-treatment period ($>= 2015$). EG is a dummy variable, which equals 1 if in a given year the city is under an elected governor, and 0 - when it is under an appointed governor. All models are estimated with three control variables: price per item in the contract, total price per contract, and the purchased quantity per contract.

Table C.3: Distribution of Paper Contracts

	Dependent variable:										
	Local			Moscow		Reg (Non-Local)			Outside Reg		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Treatment	−0.054			−0.007		0.017			0.036		
	(0.047)			(0.018)		(0.036)			(0.038)		
Post	−0.322***	−0.311***	−0.285***	0.158***	0.155***	0.091**	0.070	0.044	0.234***	0.242***	0.241***
	(0.035)	(0.043)	(0.069)	(0.029)	(0.037)	(0.040)	(0.051)	(0.076)	(0.042)	(0.052)	(0.077)
EG			−0.057					−0.011			0.069
			(0.082)					(0.059)			(0.125)
Treatment*Post	0.009	0.024	0.025	−0.059	−0.068	0.150***	0.141*	0.144	−0.158***	−0.166**	−0.170
	(0.051)	(0.069)	(0.108)	(0.038)	(0.051)	(0.058)	(0.075)	(0.119)	(0.057)	(0.076)	(0.120)
Treatment*EG			0.358					0.167			−0.527*
			(0.266)					(0.123)			(0.268)
Post*EG			0.020					0.049			−0.068
			(0.107)					(0.086)			(0.145)
Treatment*Post*EG			−0.351					−0.169			0.520*
			(0.283)					(0.160)			(0.291)
Constant	0.486***	0.291*	0.313**	0.005	−0.110	0.345***	1.068***	1.074***	0.174	−0.360**	−0.389**
	(0.123)	(0.156)	(0.159)	(0.071)	(0.094)	(0.124)	(0.137)	(0.139)	(0.129)	(0.156)	(0.153)
City FE	×	✓	✓	×	✓	×	✓	✓	×	✓	✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	1,007	1,007	1,007	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006

Note: *p<0.1; **p<0.05; ***p<0.01. Robust standard errors clustered on the city level are in the parentheses. Level of observations is city-year (contracts-city-year level data was aggregated to the city-level format). Local (Models 1-3) uses the share of the local suppliers in a given city-year; Moscow (Models 4-5)- the share of the Moscow suppliers; Reg (Non-Local) (Models 6-8) - suppliers from the same region, but not the same locality; Outside Reg (Models 9-11) - share of the suppliers from outside of the region. All models are estimated using OLS. Treatment variable contains all the cities that are in the treatment group, Post - represents the $(t+1)$ post-treatment period (>= 2015). EG is a dummy variable, which equals 1 if in a given year the city is under an elected governor, and 0 - when it is under an appointed governor. All models are estimated with three control variables: price per item in the contract, total price per contract, and the purchased quantity per contract.