NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

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POLITICAL LOYALTY VS ECONOMIC PERFORMANCE: EVIDENCE FROM MACHINE POLITICS IN RUSSIA'S REGIONS

BASIC RESEARCH PROGRAM

WORKING PAPERS

SERIES: POLITICAL SCIENCE
WP BRP 34/PS/2016

Political Loyalty vs Economic Performance: Evidence from Machine Politics in Russia's Regions*

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April 28, 2016

Abstract

Electoral authoritarian regimes often rely on patron-client relationships and political machines to win elections. While a growing literature has focused on the reasons why authoritarian regimes might want to hold elections, the economic consequences associated with the need to win elections have been less intensely studied. In this paper, we argue that while holding elections might offer authoritarian regimes a range of informational and other advantages in the short and medium run, the long-term economic costs can be significant and potentially destabilizing. This effect is especially strong in transition economies, where outdated and inefficient economic structures might be kept alive for political reasons. The theory is tested with an original dataset of gubernatorial appointments from a leading electoral authoritarian regime, the Russian Federation. We find that by incentivizing regional governors to use their political machines to win elections for the regime, the Kremlin effectively punishes those governors that are successfully developing their regional economies, with the effect being especially strong in regions where a high percentage of the population lives in Soviet-era single company towns.

JEL codes: M51, O43, P31, P52

Keywords: authoritarian elections, political machines, bureaucratic incentives, patron-client relationships, economic growth

*The article was prepared within the framework of the Basic Research Program at the National Research University Higher School of Economics (HSE) and supported within the framework of a subsidy by the Russian Academic Excellence Project '5-100'. A previous version of the paper was circulated under the title "Elections vs. Appointments: Comparing Incentive Patterns for Russian Governors under Putin". For helpful comments and suggestions I thank conference participants at the 2014 HSE April Conference in Moscow, the 2014 Aleksanteri Conference in Helsinki, the 2015 ICCEES World Congress in Makuhari, Japan, as well as seminar participants at IMT Lucca, the Scuola Superiore Sant'Anna di Pisa and the International Center for the Study of Institutions and Development at HSE Moscow.

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1 Introduction

In recent years, a growing literature has been looking at the reasons why authoritarian regimes might want to hold elections (see Gandhi and Lust-Okar 2009 or Brancati 2014 for an overview). Less attention has been paid, however, to the economic consequences associated with the need to hold authoritarian elections. While a number of studies have focused on how subsidies or direct material benefits were used by incumbents to influence election outcomes (see e.g. Kaufmann and Trejo 1997; Schady 2000; Calvo and Murillo 2004; Cerda and Vergara 2008; Manacorda, Miguel and Vigorito 2011; De La O 2013), most of the countries studied were democracies rather than hybrid or authoritarian regimes. One exception are Hong and Park (2014), who show how industrial policy location choices in authoritarian South Korea were used by the ruling party to influence election outcomes.

In this paper, we show how the need to mobilize voters in an authoritarian election negatively affects economic incentives for regional officials in a hybrid regime, the Russian Federation. Our study focuses on Russia's regional governors, who were directly appointed by the presidential administration between 2005 and 2012. By effectively (albeit informally) linking time in office to the electoral performance of the ruling party United Russia, the Kremlin sacrificed the possibility to reward regional officials for their performance in other fields, especially with respect to the economy. As a result, Russia's regional governors face strong incentives to deliver favourably election outcomes for the government party, but are effectively punished if they perform well economically. This finding stands in stark contrast to the type of incentive regimes that exists for example in China, were regional officials are promoted mainly with respect to their economic performance.

As opposed to democracies, where elections offer voters the possibility to chose their government, in autocracies elections are often used by the autocrat as an institutional tool to consolidate his or her hold on power. Providing an overview of recent research, Gandhi and Lust-Okar (2009, p. 405-406) show how a dictator can use elections as a way to co-opt members of the elite (Boix and Svolik 2013, Reuter et al. 2016), the ruling party (Magaloni 2006) or larger groups within society (Gandhi and Przeworski 2006, Gandhi 2008, Wright 2008). Elections can be used to co-opt or divide the opposition (Diaz-Cayeros and Magaloni 2001, Lust-Okar 2005, Beaulieu 2006, Gandhi and Reuter 2013), while holding elections at the sub-national level can allow the autocrat to introduce an element of competition when assigning posts among pro-regime elites

(Lust-Okar 2006, Blaydes 2011). If a regime is able to produce overwhelming electoral victories at the national level, this can serve as a strong signal to elites and the population at large that the regime is well-entrenched and opposition is futile (Geddes 2005, Simpser 2005, Magaloni 2006, Malesky and Schuler 2008, Simpser 2013).

Elections can also play an important informational role, by helping the regime to identify bases of support and opposition strongholds (Ames 1970, Magaloni 2006, Brownlee 2007), or by providing information about the loyalty and competence of regional and national elites (Birney 2007, Blaydes 2011). Finally, even when manipulated and of limited political significance, the fact that elections are held at all can be used by the regime to claim legitimacy at home and abroad, by signalling that the regime is based on the will of the people (Waterbury 1999, Schedler 2006). By continuing to conduct elections, regimes that have become more autocratic over time can claim that they remain attached to democratic values, even if the elections that are held do no longer have any real political meaning.

There thus exist a whole number of reasons why an autocrat might be interested in holding elections. Nevertheless, while conducting elections offers various advantages, there always remains a residual risk that those pro-regime elites responsible for running elections make mistakes or misjudge the real power of the opposition, so that unexpectedly or by accident an election results in a critical situation for the regime.

It therefore becomes crucial for the autocrat to have loyal and competent subordinates that are able to run political machines, in order to deliver votes and produce required election outcomes. Hale (2005) describes the important role played by such political machines in a number of post-Soviet countries. He characterizes these countries as *patronal presidential* regimes, with a strong president using his power and resources to co-opt key political elites, who in turn use their political machines to ensure that the president wins the next election and remains in power. In Hale's model, the elites are primarily motivated by career security, i.e. the desire to maintain or advance their positions, as this guarantees their continued access to economic rents. The autocrat in turn strategically uses appointments of regional and national officials to maximize the efficiency and performance of the political machines his rule is based upon.

One dilemma the autocrat is facing in this model is a trade-off between loyalty and competence, as elites that are able to run strong political machines might harbour their own political ambitions (Egorov and Sonin 2011). However, the fact that key elites usually have to coordinate their actions in order to get rid of a strong dictator makes it easier for the latter to use divide and rule tactics to solve this problem (Guriev and

Sonin 2009).

Another, albeit similar dilemma is that successfully running a political machine and bringing in the vote requires a member of the elite to control and invest in specific administrative resources, capabilities and skills. These resources might sometimes imply significant sunk costs and may not necessarily be compatible with other sets of skills and capabilities, especially those necessary to implement economic reforms. Indeed, we argue that especially in contexts characterized by economic transition from the plan to the market, the running of successful political machines might perpetuate inefficient economic structures that are held alive primarily because they constitute easily accessible reservoirs of voters. Typically, such structures include large and often inefficient state run enterprises or single-company towns dating from Soviet times, where voters directly depend on state subsidies and are therefore easier to blackmail and manipulate. In other words, we argue that a trade-off might exist between successfully running a political machine, and being able to promote sustainable economic growth.

We support our argument with empirical evidence from the Russian Federation, where between 2005 and 2012 regional governors were directly appointed by the presidential administration. Many of these governors were heading political machines in their respective region, and were made directly responsible by the ruling elites in Moscow for regional election results. To demonstrate how the careers of regional officials depend on election outcomes, we employ a logit model and panel data to show that the most important criterion used by the presidential administration to appoint and reappoint regional governors was indeed election results for the government party and the president in regional and national elections. The evidence we find empirically supports the argument made by Hale (2005), who assumes a direct connection between career advancement and electoral support in his model of patronal presidentialism. We also find that the effect is especially strong in regions where a high percentage of voters live and work in single-company towns, thus showing the importance of such structures for the success of regional machine politics.

At the same time, we find that average economic performance has a significant and *negative* effect on the probability of regional governors to remain in office. This result seems to indicate that the Russian president indeed faces a trade-off between appointing elites who are able to successfully manage political machines, and those that are competent economic managers. We explore this trade-off in detail and show how the need to run regional political machines can negatively affect regional economic performance, for example through state resources being diverted in order to keep large

and inefficient state companies alive for political reasons.

The results we find are especially striking if compared with another authoritarian and post-socialist country, China. In China, the center in Beijing has promoted regional officials mainly with respect to their ability to generate regional economic growth, as illustrated by a growing empirical literature on bureaucratic incentives in Chinese counties, cities and regions (Bo 1996, 2002; Li and Zhou 2005; Landry 2008; Jia at al. 2015; Landry, Lü and Duan, 2015; Yao and Zhang 2015). Indeed, it has been argued that one of the main drivers of China's economic miracle are the strong pro-growth incentives state officials are facing at all levels of the Chinese bureaucratic hierarchy (Xu 2011). Possibly, one reason why the Chinese Communist Party was and is able to focus on growth is that they did not have to care about running political machines, as China does not have elections at the regional and national level.

Apart from providing an institutional explanation for Russia's recent economic stagnation (in addition to problems caused by falling oil prices and international sanctions), our paper also provides additional evidence why electoral authoritarian regimes with comparatively less free and nonbinding legislatures might perform worse economically. While Wright (2008) shows how binding legislatures provide better security for domestic investment, we present another channel by showing how the need to control and manipulate elections in electoral authoritarian regimes can negatively affect economic performance and slow down economic transition and reform.

Our paper is organized as follows. Section 2 introduces the context of center-region relations in the Russian Federation. Section 3 presents our research hypotheses. Section 4 describes our data and methodology, section 5 presents results, and section 6 concludes.

2 Russia's Regional Governors, Political Machines and Bureaucratic Incentives

During the political and economic transition in the 1990s, Russia's then still 89 regions[1] managed to gather a significant degree of autonomy with respect to the federal centre in Moscow (Stoner-Weiss 1999). An important role in this respect was played by the executive heads of Russia's regions, which for simplicity we will refer to as "governors"

[1]Under Putin, a number of regions have since been merged into larger units, so that the Russian Federation before the annexation of Crimea in 2014 was composed out of 83 federal subjects.

in this paper[2]. Since the mid-1990s until the end of 2004, these governors have been publicly elected in their region, with the 1996/1997 election cycle being the first time that direct gubernatorial elections were held throughout all of Russia's regions.

The fact of being publicly elected, as well as the pivotal position governors occupied as arbiters between regional and federal interests made them into powerful players in Russian politics during the 1990s. From 1996 onwards, governors were automatically guaranteed ex offico membership in the upper chamber of the Russian Federation, the Federation Council, which provided them with an important position at the federal level (Ross 2010). Governors also played an important economic role in their regions, as their position permitted them to conduct, participate in and benefit from the extensive economic restructuring that took place during the 1990s in Russia (Stoner-Weiss 1997, Hale 2003).

When Vladimir Putin came to power, one of his stated objectives was to reconsolidate the federal state, by re-establishing the so-called "vertical of power". Shortly after coming to office, he introduced a series of measures to curtail the power of regional governors. From 2000 onwards, governors were no longer automatically members of the Federation Council. Seven federal districts were formed to increase the direct oversight of the presidential administration over regional governors, and regional laws and charters (often favouring specific regions) were streamlined and brought into conformity with federal law. A new tax code rendered even donor regions dependent upon federal transfers, and regional political parties - often serving as electoral vehicles for the governors - were eliminated (Goode 2007, page 373). At the same time, big business corporations, often with the implicit approval of the presidential administration, were moving increasingly into the regions, challenging the economic control acquired by regional governors during the late 1990s (Orttung 2004, Zubarevich 2005).

Still, during Putin's first term as president (2000-2004) the Kremlin failed to decisively gain back control over the regions. For instance, in several cases Kremlin-backed candidates lost regional elections against incumbents who had built political machines that were sufficiently strong to prevail against the federal centre (Chebankova 2005, pages 941-942). In late 2004, Putin therefore used a hostage crisis in the Southern Russian city of Beslan as a pretext to introduce a far-reaching reform, a centrepiece of which was the abolition of regional gubernatorial elections. From 2005 onwards,

[2]Although the rulers of Russia's regions are referred to by a variety of names; for example, Russia's ethnic republics are generally headed by a president, while oblasts are ruled by a governor and federal cities by a mayor.

Russia's regional governors were now no longer elected in their regions, but directly appointed by the presidential administration.

During the debate around the 2004 reform, one argument in favour of abolishing gubernatorial elections was that in the future, governors should be able to focus more than before on regional economic development, as they no longer had to care about specific interest groups and winning elections. For example, Moscow mayor Yuri Luzhkov noted in 2004 in support of the reform "that a governor should be concerned with the regional economy first and foremost, acting as a manager first, and to a lesser degree as a politician" (Goode 2007, page 373). These arguments were not without foundation, as the reform would make Russia's system of regional bureaucratic appointments similar to the Chinese one, where the central government had been appointing and promoting regional governors with regard to their economic performance for some time (Li and Zhou 2005). As Russia's governors still had a lot of leeway to economically manage their regions even after the 2004 reform, the Kremlin could have used the new system to boost regional economic growth, by linking the career prospects of regional officials with economic performance.

However, it seems that instead of using the new system to reward governors for economic growth, the Kremlin was rather interested in using the governors' political machines to generate political support. The fact that governors had to run for public office before 2005 had left most of them in control of effective regional political machines (Hale 2003), which the Kremlin now intended to use for its own purposes (Wegren and Konitzer 2007, Sharafutdinova 2010, Turovsky 2010).

One reason for this increased need by the Kremlin to find ways of ensuring political control was a series of protest movements that occurred in a number of Post-Soviet and Balkan countries in the early 2000s, the so called colour revolutions (Bunce and Wolchik 2011). Typically, these revolutions were characterized by massive street protests following disputed elections, with student movements and NGOs organizing protests and non violent resistance. Most notable cases were the overthrow of president Milosevic in the former Yugoslavia (2000), the Rose Revolution in Georgia that ended the reign of Eduard Shevardnadze (2003), and the Orange Revolution in Ukraine (2004/2005). In Ukraine, large-scale election fraud had triggered protests that eventually led the Supreme Court to order a revote of the controversial second round of the presidential elections, which was then won by the pro-Western candidate Viktor Yushchenko against Kremlin-backed candidate Viktor Yanukovych. The Orange Revolution in particular had left the ruling elites in Russia concerned about similar protests occurring

in Russia (Duncan 2013), especially as the revolution coincided with a wave of protests within Russia in early 2005, with citizens protesting against a new law abolishing social benefits[3].

While the Kremlin tried to react to the threat posed by civil society activists and street protests by creating its own civil society organizations such as the pro-Kremlin youth group *Nashi*, the most important element in its strategy of defense was to maintain an image of overwhelming political strength (Robertson 2009). Situations such as in Ukraine where elections with a strong political challenger resulted in close election results had to be avoided at all costs, as in the eyes of Russia's ruling elites contentious election outcomes could easily serve as a catalyst for mass protests and possibly lead to the end of the regime (Duncan 2013).

As the Kremlin party "United Russia" had only been founded in 2001[4] and was still lacking effective grass-roots organizations in most regions, the support of the regional governors and their political machines became crucial to bring in the vote and guarantee a convincing electoral performance for the party. In the words of Henry Hale (2003, page 228), "when Russian experts consider who is likely to win any given election, be it for the Duma, the regional legislature, or even the presidency, one of the first questions they address is whom the governor is supporting". Because of their dominating position during the 1990s, Russia's regional governors had been able to gather a whole range of administrative levers and resources to mobilize voters and induce them to vote into a certain direction (for a detailed analysis of these political machines, see Stoner-Weiss 1997; Hale 2003; Frye et al 2014 or Frye et al. 2015).

A particularly important role in this respect was played by Russia's many single-company towns. A Soviet legacy, these towns are characterized by the presence of a single large employer, and a lack of outside options for employees. In addition, workers often depend on their employer for a number of in-kind services, e.g. health-care, housing or a place in the kindergarten. Loosing your job thus can have grave consequences, making the employee fully dependent on whoever has ultimate control over the firm. During elections, it therefore becomes easy for employers to intimidate voters, especially if the voter has legitimate doubts about the secrecy of the ballot. The employers in turn do often depend on regional governors for subsidies and support, especially as firms in

[3]http://www.nytimes.com/2005/01/16/world/europe/putin-reforms-greeted-by-street-protests.html

[4]A result of the merger between the political parties "Unity" and "Fatherland – All Russia", which themselves had only been founded in October 1999 and November 1998, respectively.

Russia's single-company towns are often inefficient, rely on outdated technology and depend on state support (Commander et al; 2011, Hedlund 2014; Crowley 2015). That voter intimidation at the workplace seems indeed to be one of the main tools used by regional officials and their political machines in Russia has been shown by Frye et al. (2015), who underline the special importance of Russia's single company towns in this respect.

While Russia's regional governors thus held the key to ensure United Russia's electoral success, not all governors were initially willing to put their political machines into the service of the Kremlin, even after the 2005 reform that made their political future dependent on the presidential administration. Indeed, Reuter (2013) shows how those governors with comparatively stronger political machines were more reluctant to abandon their political independence, by joining United Russia at a later stage than their less successful colleagues.

The Kremlin thus needed a way to make it clear to the governors that what was expected from them was to put their political machines in the service of the ruling party. While officially Russia's regional governors were evaluated by a detailed list of up to 319 formal performance criteria, in practice these criteria were far too numerous and detailed to play any significant role (Rochlitz et al. 2015, page 10). Instead, it seems that the presidential administration started relatively fast to base their decisions of gubernatorial appointments on the performance of United Russia in regional and national elections, while also successfully communicating to regional governors that this was indeed the main *informal* performance criterion their jobs depended upon (see Wegren and Konitzer 2007, Sharafutdinova 2010 and Turovsky 2010 for a qualitative analysis, and Reisinger and Moraski 2012 or Reuter and Robertson 2012 for empirical evidence).

A good example that nicely illustrates the chain of command from the federal center to political machines in the regions is provided by Frye et al. (2014, page 11). In a video published on youtube, the mayor of Novokuznetsk, a large industrial city in Siberia, is addressing a gathering of company directors on October 4th, 2011, inciting them to encourage their workers to vote for United Russia. During his speech, the mayor explicitly mentions the regional governor and the recent United Russia congress in Moscow:

"We need to carry out these elections in the proper manner so that it won't be painful or uncomfortable. You are all smart people; you are all directors. You saw the

recent United Russia congress; you saw that, on Friday, the governor gathered a team to discuss preparations for the parliamentary elections on December 4. It's clear to everyone that United Russia should win[5]."

3 Research Hypotheses

In this paper, we use the context of gubernatorial appointments in the Russian Federation between 2005 and 2012 to illustrate and test our argument about a possible trade-off between the need to run political machines in electoral authoritarian regimes, and the ability of such regimes to promote economic growth. We argue that especially in regimes with an economy still in transition, the need to co-opt and incentivize regional elites, as well as the necessity to use their political machines can have a negative effect on regional economic performance, through slowing down economic reform and diverting state subsidies towards unproductive ends. To test our argument, we will focus on three simple hypotheses. In order for the autocrat to convince regional elites to use their administrative resources in support of the regime, the incentives provided by the autocrat have to be credible. With respect to our case study, in order for the Kremlin to convince Russia's regional governors to use their political machines in its support, the Kremlin has to be able to credibly communicate that the informal criterion of electoral support is really the main factor determining if a governor is fired or not, instead of the official performance criteria published by the Ministry of Regional Development. Our first hypothesis is thus as follows:

Hypothesis 1: The probability of reappointment or promotion (dismissal) for Russian regional governors increases (decreases) with the vote margin of United Russia in regional and Duma elections, as well as with the vote margin of the Kremlin candidate in presidential elections.

Officially, one of the main tasks of Russia's governors remains the development of the regional economy. In this, Russia's regional governors are not different from their Chinese counterparts, who have to sign a so called "performance contract" at the beginning of their term, of which a central criterion is economic growth (Rochlitz et al. 2015). The empirical literature on performance criteria for Chinese governors that began with

[5]The whole speech can be watched on youtube, www.youtube.com/watch?v=kD4W5zAKlCg&feature, last accessed on March 17th, 2016.

the seminal paper by Li and Zhou (2005) has shown that economic performance has indeed until fairly recently remained the most important factor influencing their chances of promotion. In this paper, we are going to test the same hypothesis tested by Li and Zhou (2005, page 1749) for our sample of Russian governors.

Hypothesis 2: The probability of reappointment or promotion (dismissal) for Russian regional governors increases (decreases) with the provincial economic performance.

Finally, a number of studies have highlighted that political mobilization of workers is especially likely in regions and industrial sectors where fiscal dependence on the state is high, assets are immobile and labour markets are slack (Frye et al. 2014, 2015). Frye et al. (2015, page 1) argue that voter intimidation by regional elites in Russia has been especially widespread "in Russia's many single company towns, where employers have considerable leverage over employees." An extensive literature has pointed to the economic inefficiency of many if not most of these single company towns, or "monotowns" (Hill and Gaddy 2003, Commander et al. 2011, Crowley 2015). Indeed, Hedlund (2014) argues that one of the main reasons for many of Russia's single company towns being kept alive by state subsidies is because they constitute easily accessible reservoirs of voters[6].

Economically, it would make sense to gradually reduce state-subsidies and close many large and underperforming Soviet-area enterprises, and use state-subsidies instead to build a younger, more dynamic and diversified economy. However, as in such a more dynamic economy employees are arguably much less dependent on a single employer, workplace mobilization would be more difficult. To see if single company towns do indeed play a key role in the informal contract between the Kremlin and Russia's regional elites, where mobilizing votes for the regime is exchanged for time in office, we will test the following hypothesis:

Hypothesis 3: The positive relationship between votes for the regime and the probability to remain in office for regional governors is especially strong in regions where a high percentage of the population lives in single company towns.

[6]http://www.worldreview.info/content/russia-s-monotowns-evidence-increasingly-obsolete-economy

4 Methodology and Data

To test our argument, we use an original panel dataset of gubernatorial appointments, covering 160 Russian regional governors who served in 81 Russian regions from 2005 to 2012. We end our analysis in 2012, as from 2013 onwards governors were again elected in their respective regions, even if the nomination of candidates continued to largely depend on the presidential administration (Goode 2013, Golosov 2014).

As we are primarily interested in the incentives faced by regional governors, we use a logit model with a binary dependent variable that is 0 if a governor was dismissed in a given year, and 1 otherwise. While studies on Chinese governors mainly concentrate on promotions, focusing on dismissals is more suited to the Russian context, as being a regional governor in Russia is very much an end-of-career position and promotions are extremely rare (Rochlitz et al. 2015). In other words, a governor in Russia has strong incentives to remain in office as long as possible, as being dismissed will most likely end access to the rents a governor is benefitting from.

If a governor is dismissed before July 1st in a given year, the year before (i.e. the last year the governor has been in office throughout the whole year) is coded as 0, while the given year is counted as the first year in office of the new governor (y=1). If a governor is dismissed from July 1st onwards in a given year, this is counted as the last year of the governor in office (y=0), while the next year is counted as the first year in office of the new governor (y=1). If a governor died in office (which happened 3 times during the period under study), the year was coded as y=1.

Our primary independent variables are the vote margin for United Russia in regional and Duma parliamentary elections in a given region, as well as the vote margin for the Kremlin candidate in presidential elections. By the vote margin, we understand the distance in percentage terms to the second best party if United Russia or the Kremlin candidate are leading, or the distance to the winner otherwise. Election results have been coded in a way that only those elections that could have been influenced by the governor and his or her political machine are counted. As it makes sense to assume that the Kremlin also considered past loyalty of regional governors when making appointment decisions, vote margins for the 2003 Duma and 2004 presidential elections are also included, if the governor in question was in office during these elections. Finally, we also include regional election results for United Russia in the 2003 Duma election as a control, to benchmark for the performance of United Russia before the 2004 reform.

To test hypothesis 2, we adopt a measure of average economic performance intro-

duced by Li and Zhou (2005, page 1755) as our secondary independent variable. Rather than just looking on annual regional GDP growth, using an average measure is arguably a closer proxy for the ability of the governor to develop the regional economy. We thus construct a moving average of the GDP growth rate over the time a governor is in office, $\widetilde{g}_T$, which is defined as

$$\widetilde{g}_T = \frac{1}{T} \sum_{t=1}^{T} g_t,$$

where T is the number of years a governor is in office up to the point of calculation, t is the t-th year (t = 1, 2,..., T-1, T), and g_t is the GDP growth in the year t for a region. Thus, $\widetilde{g}_T$ corresponds to an evaluation mechanism in which there is an annual assessment, but where the assessment is based both on the past and on the current performance of a governor in office.

Apart from economic performance, regional governors were also officially evaluated according to a whole range of additional performance indicators between 2005 and 2012, issued by the Ministry of Regional Development. While the precise number of these indicators varied between 43 in 2007 and 319 in 2010 (Rochlitz et al. 2015, page 10), we use the unemployment level, the number of crimes per capita and the quality of infrastructure as three additional indicators to proxy the social and economic performance of a governor. As in the case of regional GDP growth, we construct a moving average for all three indicators to obtain a closer proxy of an individual governor's performance.

To test hypothesis 3, we then interact our primary explanatory variables with the percentage of people working in single company towns in a region. As controls a set of both governor-specific and region-specific variables are used, as well as time fixed effects. Data on governors have been collected from official sources, such as the official websites of regional governors which normally provide extensive biographical information, as well as from other websites such as Wikipedia and various Russian websites that provide biographical data. For each governor, the dates of appointment and termination, as well as data on age, time in office and membership in the Kremlin party United Russia have been collected. We follow Reuter and Robertson (2012, page 1030) by using the popularity of a governor in a region as an additional control variable, measured by a number of opinion polls conducted by the Geo-rating project of the Public Opinion Foundation (www.fom.ru) in 68 out of the 81 regions in our sample. In the polls,

Table 1: Summary Statistics

Variable	Observations	Mean	St. Dev.	Min	Max
governor	648	0.88272	.3220069	0	1
growth	648	0.04571	.0561067	-0.196	0.263
av_growth	648	0.05099	0.03614	-0.142	0.176
pres_elec	522	0.52655	0.13515	0.2375	0.9766
duma_elec	510	0.37632	0.20031	-0.053	0.9837
reg_elec	514	0.31871	0.18568	-0.1377	0.8517
monotown	648	0.10906	0.14558	0	0.6835
av_unemployment	648	0.09012	0.05858	0.011	0.5505
av_crime_pc	648	0.02091	0.0068	0.0035	0.0435
av_infrastructure	648	41.5542	23.8968	1	85.25
age	648	54.622	8.1395	34	76
tenure	648	7.2731	5.1474	1	21
UR_member	648	3.2207	2.7202	0	12
popularity	532	0.39775	0.17002	0.05	0.89
city_population	648	0.69761	0.12815	0.26	1
log_grp_pc	648	11.9408	0.6947	9.637	14.221
oil_share	648	0.09025	0.14693	0	0.749
ethnic	648	0.77563	0.24574	0.0078	0.9727

respondents were asked ‘‘do you think the leader of your region is doing a good job or a bad job?’’. We take the percentage of respondents who think their governor is doing a good job as proxy for the popularity of the governor. If after controlling for popularity vote margins still have a significant effect on the chances of governors to keep their job, we can say with more certainty that governors are indeed appointed for their effectiveness to turn out the vote, rather than simply for being popular in their region.

The list of 335 single company towns (or “monotowns”) used for this study has been published by the Russian Ministry of Regional Development in 2009 . As Russia’s monotowns vary greatly in size and population, we took the percentage of people living in monotowns as a share of overall regional population as our variable.

As additional region-specific control variables, we use the logarithm of gross regional product per capita and the percentage of people living in cities. We also include a control for the percentage of people that are ethnic Russians, as Russia’s ethnic republics (i.e. those with a high percentage of non-Russian population) are often characterized by especially high levels of electoral manipulation. To control for natural resource rents, we include the share of oil and gas exports in the regional economy. Data for these variables

as well as data for unemployment and crime levels come from the Russian Federal Statistics Service (www.gks.ru), while regional data on regional, Duma and presidential election results have been gathered from the Russian Central Election Commission (www.cikrf.ru). Quality of infrastructure in a region is measured by a yearly regional ranking, published by the Russian rating agency ExpertRA (www.raexpert.org), with a lower rank meaning better quality of infrastructure. Table 1 presents summary statistics for all the variables used in this study.

5 Empirical Results

In this section, we present evidence on how various formal and informal performance criteria influence gubernatorial appointments in Russia's regions. In accordance with a number of previous studies (Reisinger and Moraski 2012; Reuter and Robertson 2012), we find strong and consistent evidence across a range of models and specifications that the performance of United Russia in regional and Duma elections has a significant and positive effect on the probability of governors to remain in office (table 2), thus confirming our hypothesis 2. While Reuter and Robertson (2012) focus mainly on the result of United Russia in *regional* elections, we also find a positive and significant effect for Duma elections. On the other hand, results for the Kremlin candidate in presidential elections do not seem to have a direct effect on appointments, at least when looking at the whole sample.

Apart from election results for the government party, the popularity of the governor in the region as measured by the opinion polls of the Public Opinion Foundation (FOM) also has a consistently strong and positive effect on appointments. It thus appears that while the electoral performance of United Russia in a given region is indeed a key criterion determining the decision by the presidential administration to replace or reappoint a governor, governors that are popular in their region are also more likely to be reappointed.

A striking finding are the results for economic performance. While the effect of economic growth per se is negative but not statistically significant (column 7, table 2), the weighted indicator of gubernatorial economic performance has a consistently significant and negative effect on the probability of a governor to remain in office (columns 1 - 6, table 2). In other words, the better a governor is doing in developing the regional economy, the worse are the chances for her or him to keep the job or be promoted.

Table 2: Gubernatorial Appointments, Election Results and Economic Growth

Variables	1	2	3	4	5	6	7
Average	-13.94**	-14.45***	-14.7**	-19.16***	-21.09***	-17.77***	
GDP growth	(5.779)	(5.278)	(5.781)	(6.39)	(6.313)	(6.235)	
GDP growth							-1.543
							(3.337)
pres_elec	0.382			1.16			
	(1.578)			(2.521)			
duma_elec		3.66**			2.821*		
		(1.839)			(1.711)		
reg_elec			4.767***			2.883**	
			(1.217)			(1.406)	
av_unemploy.	-3.38	-3.817	0.963	35.62**	39.3**	40.86**	-2.517
	(2.601)	(3.22)	(3.893)	(16.26)	(16.99)	(19.7)	(3.03)
av_crime_pc	59.59**	53.85*	101.28***	30.26	23.55	67.61*	55.85*
	(28.24)	(29.53)	(29.24)	(36.15)	(36.5)	(38.04)	(29.77)
av_infrastruc.	-0.025***	-0.026***	-0.032***	-0.035***	-0.039***	-0.04***	-0.022**
	(0.009)	(0.01)	(0.01)	(0.013)	(0.014)	(0.013)	(0.01)
duma_vote_03	2.014	-2.035	-3.685	-1.287	-4.202	-3.455	-2.53
	(1.977)	(2.321)	(2.265)	(3.169)	(2.922)	(3.272)	(2.184)
age	-0.017	-0.019	-0.011	0.022	0.014	0.031	-0.03
	(0.023)	(0.022)	(0.029)	(0.029)	(0.029)	(0.033)	(0.022)
tenure	-0.053*	-0.036	-0.092	-0.154***	-0.127**	-0.02***	-0.043
	(0.03)	(0.033)	(0.037)	(0.05)	(0.053)	(0.059)	(0.034)
UR_member	0.044	0.035	0.012	0.004	0.01	-0.009	0.064
	(0.062)	(0.06)	(0.066)	(0.066)	(0.063)	(0.068)	(0.06)
popularity				5.733***	5.401***	5.658***	
				(1.426)	(1.405)	(1.602)	
city_population	-4.09**	-3.621**	-4.34**	-5.287*	-4.562*	-5.526	-2.22
	(1.749)	(1.759)	(2.141)	(2.877)	(2.721)	(3.394)	(1.68)
log_grp_pc	0.297	0.337	0.787*	0.671	0.927**	1.144**	-0.003
	(0.0407)	(0.384)	(0.431)	(0.487)	(0.465)	(0.526)	(0.396)
oil_share	0.94	0.476	-0.8	-0.532	-1.565	-1.609	1.233
	(1.432)	(1.335)	(1.582)	(1.808)	(1.793)	(2.024)	(1.295)
ethnic	0.329	0.197	-0.132	0.175	-0.495	-0.201	0.122
	(0.925)	(0.915)	(1.054)	(1.388)	(1.564)	(1.766)	(0.896)
Constant	1.381	1.755	-3.626	-5.709	-7.28	-11.321	4.669
	(4.642)	(4.386)	(4.932)	(6.575)	(6.715)	(7.243)	(4.544)
Log Pseudo-Likelihood	-189.13	-189.4	-161.13	-140.61	-140.98	-121.57	-192.84
Observations	522	510	514	442	430	441	510

Dependent variable: 1 = in office during a given year, 0 = dismissed; year fixed effects; robust standard errors clustered on regions in parentheses, ***p < 0.01; **p < 0.05; *p < 0.1

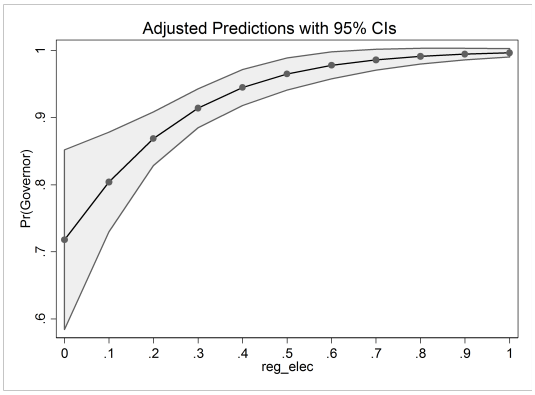
This result is especially striking if we compare it to the literature on China, which generally finds a positive effect of growth on promotions for Chinese bureaucrats (Xu 2011). Apart from the current problems related to falling oil prices and international sanctions the Russian economy is suffering from, one additional explanation for the different levels of economic performance in both countries might thus be diametrically opposed incentive structures for regional officials.

Figure 1 illustrates the substantive effects of our key variables, by showing the likelihood of a governor preserving his job in any given year, depending on United Russia's most recent election results or average regional economic performance since the governor took office. For Duma and regional elections as well as for economic growth, the effects are quite substantial. Holding all other variables constant at the mean, if United Russia won with a victory margin of 60.7% in Duma or 52.3% in regional elections (the 90th percentile of the data), the probability for the governor to stay in office is 94.7% and 96.9%, respectively. On the other hand, if United Russia won only with a margin of 12.5% in Duma or 10.9% in regional elections (the 10th percentile of the data), the chances to keep the job decrease to 75.2% and 81.1% in any given year, respectively. In other words, the probability of gubernatorial replacement increases quite substantially with bad electoral performance of the ruling party. For economic performance, however, an increase in average growth rates from 1.2% (the 10th percentile) to 8.8% (the 90th percentile) *lowers* the probability of staying in office by more than 10 percentage points from 93.3% to 82.2%, holding all other variables constant.

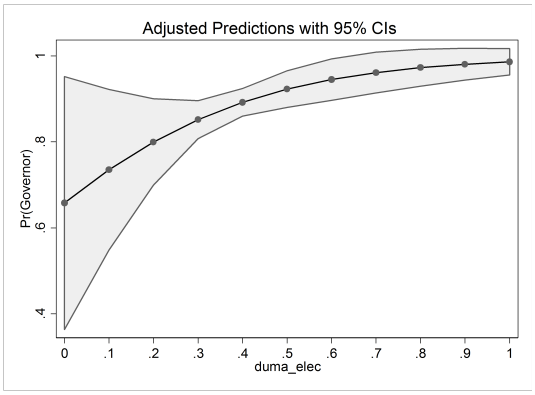
While economic performance is one important official criteria allegedly used to evaluate regional governors in Russia, other criteria are linked to social stability and security. Here as well, it seems that those criteria formally advanced by the Ministry of Regional Development as determining its personnel policies do in actual fact not play a role, or even have a negative effect on reappointments. Once we control for election results and the popularity of a regional governor (columns 4, 5 and 6, table 2), the average level of unemployment over the time a governor is in office has a positive and significant effect on the probability to remain in office, while the negative effect of growth on appointments also increases. In other words, if a governor only delivers sufficient votes and is popular enough, negative economic performance and high unemployment levels seem no reason to appoint somebody else. Similarly, the weighted indicator for crime levels also positively affects the probability of reappointment across various specifications, meaning that the higher is the number of crimes per capita in a given region, the better

Figure 1: Substantive Effects of Key Variables

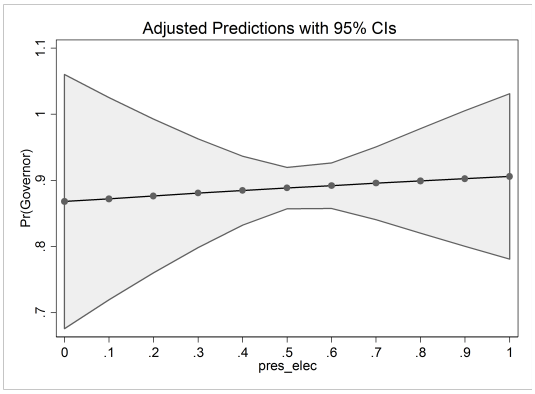
Effect of UR regional election victory margin on the probability of reappointment



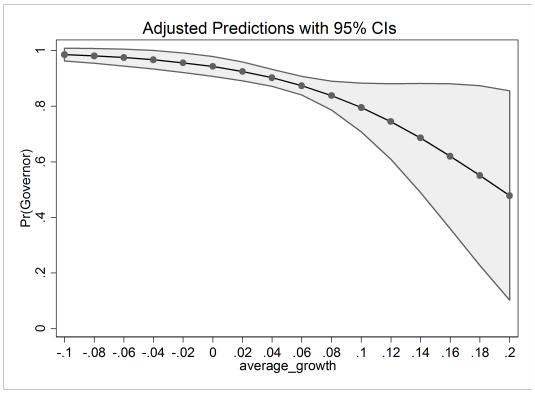
Effect of UR Duma election victory margin on the probability of reappointment



Effect of presidential election victory margin on the probability of reappointment



Effect of average economic growth on the probability of reappointment



are the chances of the governor to remain in office. The only indicator with an expected sign is the quality of infrastructure. If a region improves its place in the annual ranking of infrastructure quality issued by the journal Expert, the probability of the governor being reappointed increases, keeping everything else equal.

Overall, our results point to a striking divergence between the formal and informal criteria used in the evaluation of regional officials in Russia. While formally Russia's governors are supposed to develop the regional economy, and to keep unemployment levels and crime rates low, what really seems to matter are electoral support for the government party and popularity within the region.

One question emerging at this point is why the presidential administration should have an interest in punishing governors that do well economically? A possible answer

might be that the Kremlin is afraid that economically successful governors could use their region as a base to challenge the elites in the center politically. Such an explanation would fit well with the theory advanced by Egorov and Sonin (2011), where a dictator prefers loyal but incompetent vizirs over competent subordinates that might become potential challengers.

However, when looking at Russia's regional governors it appears unlikely that any one of them, even if economically successful, might become a challenger for Vladimir Putin and the elites in the center. Indeed, apart from former Moscow mayor Yuri Luzhkov who had harboured presidential ambitions in the late 1990s as well as Moscow's current mayor Sergey Sobyanin, not a single governor in our sample has expressed his ambitions nor seemed likely to play a significant role in the federal center during the period we study.

In addition, at least until 2010 the popularity of Vladimir Putin was closely linked to the performance of the Russian economy (Treisman 2011). The regime thus had a strong interest in maintaining high levels of economic growth. It therefore seems probable that the negative correlation between growth and promotions we observe is rather a side-effect than the result of a conscious choice. With economic growth seemingly taking care of itself at least until 2008, it did not appear necessary at the time to put additional pro-growth incentives into place, as existed in China. Rather, what the Kremlin cared about was electoral support and political stability in the regions, to counter the risk posed by the colour revolutions in other post-Soviet countries. That such a focus on political control consolidated institutional mechanisms with a long-term negative effect on economic dynamism might have been difficult to foresee in the booming 2000s.

If there is a trade-off between economic performance and political support, how does it work? In this paper, we argue that one channel are the many inefficient Soviet-era enterprises in Russia's single company towns that are kept alive through state subsidies for social and political reasons. Frye et al (2014, 2015) argue that voter intimidation in single industry or company towns plays a central role in the way political machines of regional governors do work. In addition, single company towns do also constitute a potential source of social protest and unrest, in particular in times of economic difficulties (Crowley 2015). Russia's monotowns are thus both a key to high levels of political support for the regime, and a potential source of risk. In our model of gubernatorial appointments, we would therefore expect the interaction term between pro-regime votes and the percentage of people living in monotowns in a given region to have a positive and significant effect on reappointments, as for the Kremlin the role of

governors as political brokers is especially important in monotowns.

Table 3 tests this hypothesis for the whole sample. While the interaction term does indeed have the right sign, it is only significant in columns 3 and 5, for regional and presidential election results, respectively. Similarly, the interaction term between average growth and the percentage of people living in monotowns is negative, but not significant (column 4).

One explanation for the low significance levels in table 3 might be that not all monotowns in our sample share the same characteristics. Indeed, a closer look at those regions where a significant share of the population live in towns that depend on a single industry or company points at two outliers that might potentially bias our results. Both the Khanty-Mansi Autonomous Region (68% of the population living in monotowns) and the Yamalo-Nenets Autonomous Region (55% of the population living in monotowns) have an economy almost entirely centred on the extraction of oil and gas. While all other regions with a substantial monotowns population in our sample correspond to the economic model described by Commander et al. (2011) and Crowley (2015), with large Soviet-era enterprises that often suffer from below average productivity, these two regions live by an entirely different economic model, with a population of highly paid specialists working in the natural resource sector, and a gross regional product way above the Russian average and equal to that of Norway.

In table 4, we therefore exclude both the Khanty-Mansi and the Yamalo-Nenets Autonomous Region, as well as Tyumen Region of which both are a sub-entity, from our analysis. Now the interaction term between pro-regime votes and the percentage of people living in monotowns does indeed become positive and significant for regional, Duma and presidential elections (columns 1, 2 and 3, table 4), suggesting that the relationship between gubernatorial appointments and pro-regime votes is especially strong in those regions characterized by a high part of the population working in Soviet-era industrial towns. These results confirm our hypothesis 3, and add additional empirical support to the findings by Frye et al. (2014, 2015), who argue that single company towns play a particularly important role in the way political machines work in Russia's regions. Interestingly, while presidential election results were not significant in our baseline model (columns 1 and 4, table 2), in monotowns they seem to have a sizeable impact on the probability of gubernatorial reappointments and promotions (column 1, table 4). Even when controlling for the popularity of the governor (columns 5, 6 and 7, table 4), which obliges us to drop an additional 10 regions from our sample as data for popularity is only available for 68 regions, the interaction term for Duma elections

Table 3: Gubernatorial Appointments, Election Results and Single Company Towns

Variables	1	2	3	4	5	6	7
Average GDP growth	-13.13**	-14.36***	-15.25**	-13.74**	-20.28***	-21.58***	-19.32***
	(5.614)	(5.42)	(6.098)	(5.858)	(6.786)	(6.52)	(7.033)
pres_elec	-1.541				-0.903		
	(1.859)				(2.632)		
duma_elec		3.202		3.722**		2.282	
		(2.11)		(1.856)		(1.922)	
reg_elec			3.569**				2.404*
			(1.433)				(1.415)
monotown	-9.545	-1.115	-4.123*	0.818	-13.155*	-1.888	-2.664
	(6.308)	(2.476)	(2.371)	(2.677)	(7.052)	(2.932)	(2.494)
monotown* pres_elec	18.781				25.35*		
	(12.143)				(13.35)		
monotown* duma_elec		2.954				3.018	
		(5.785)				(6.715)	
monotown* reg_elec			9.825*				3.258
			(5.752)				(6.497)
monotown* av_growth				-15.107			
				(49.26)			
duma_vote_03	2.119	-1.91	-3.4	-2.141	-1.657	-3.908	-3.022
	(2.018)	(2.396)	(2.314)	(2.375)	(3.41)	(2.983)	(3.204)
av_unemploy.	-1.715	-3.534	0.478	-3.773	33.71**	38.31**	37.74*
	(2.947)	(3.279)	(3.566)	(3.202)	(16.31)	(16.8)	(19.99)
av_crime_pc	60.92**	54.46*	108.25***	54.57*	32.15	26.179	78.41*
	(28.9)	(29.76)	(30.33)	(29.9)	(37.35)	(37.61)	(40.54)
av_infrastruc.	-0.027***	-0.027***	-0.032***	-0.026***	-0.037***	-0.04***	-0.04***
	(0.009)	(0.01)	(0.01)	(0.01)	(0.014)	(0.014)	(0.013)
popularity					5.717***	5.488***	5.873***
					(1.496)	(1.494)	(1.705)
governor specific controls	yes	yes	yes	yes	yes	yes	yes
region specific controls	yes	yes	yes	yes	yes	yes	yes
Constant	1.698	1.679	-4.417	1.701	-4.785	-6.997	-11.06
	(4.852)	(4.384)	(4.96)	(4.373)	(6.64)	(6.701)	(7.23)
Log Pseudo-Likelihood	-187.004	-189.21	-159.32	-189.35	-139.35	-140.68	-120.68
Observations	522	510	514	510	442	430	441

Dependent variable: 1 = in office during a given year, 0 = dismissed; year fixed effects; robust standard errors clustered on regions in parentheses, ***p $<$ 0.01; **p $<$ 0.05; *p $<$ 0.1

Table 4: Gubernatorial Appointments, Elections and Single Company Towns (without Khanty-Mansi Autonomous Region, Yamalo-Nenets Autonomous Region and Tyumen Region)

Variables	1	2	3	4	5	6	7
Average	-13.51**	-14.81**	-15.56**	-12.15*	-21.26***	-23.23***	-19.71***
GDP growth	(6.111)	(5.953)	(6.127)	(6.187)	(7.737)	(7.254)	(7.44)
pres_elec	-2.738				-0.913		
	(1.953)				(2.865)		
duma_elec		2.203				1.185	
		(2.2)				(1.992)	
reg_elec			3.158**				2.023
			(1.48)				(1.366)
monotown	-17.32***	-5.418**	-6.328***	2.496	-11.42	-6.115**	-4.886*
	(6.521)	(2.657)	(2.34)	(2.667)	(7.51)	(2.818)	(2.948)
monotown*	34.71***				20.55		
pres_elec	(12.28)				(13.82)		
monotown*		13.37**				11.74*	
duma_elec		(6.515)				(7.119)	
monotown*			15.38**				8.717
reg_elec			(6.158)				(7.609)
monotown*				-55.84			
av_growth				(44.5)			
duma_vote_03	2.7	-1.405	-3.738	-2.132	-0.681	-3.265	-3.5
	(2.13)	(2.419)	(2.365)	(2.424)	(3.43)	(2.986)	(3.05)
av_unemploy.	0.136	-2.567	-0.109	-3.572	34.89**	37.76**	33.75*
	(3.213)	(3.483)	(3.328)	(3.116)	(17.42)	(17.39)	(18.87)
av_crime_pc	60.74**	58.553*	111.09***	63.39*	40.32	37.89	90.37*
	(30.65)	(31.951)	(32.77)	(32.34)	(43.99)	(44.99)	(47.14)
av_infrastruc.	-0.029***	-0.029***	-0.031***	-0.028***	-0.039***	-0.042***	-0.039***
	(0.01)	(0.011)	(0.01)	(0.01)	(0.015)	(0.015)	(0.013)
popularity					6.572***	6.198***	5.678***
					(1.481)	(1.479)	(1.702)
governor specific controls	yes	yes	yes	yes	yes	yes	yes
region specific controls	yes	yes	yes	yes	yes	yes	yes
Constant	-2.212	-0.44	-3.467	0.226	-6.907	-7.978	-8.701
	(4.549)	(4.361)	(5.206)	(4.265)	(6.711)	(6.657)	(6.955)
Log Pseudo-Likelihood	-177.97	-179.19	-153.53	-180.73	-131.91	-131.7	-117.82
Observations	504	492	493	492	430	418	428

Dependent variable: 1 = in office during a given year, 0 = dismissed; year fixed effects; robust standard errors clustered on regions in parentheses, ***p < 0.01; **p < 0.05; *p < 0.1

remains significant, while for presidential elections the results are no longer significant but remain just beyond the 10% significance level. Finally, the interaction term between average growth and percentage of people living in monotowns remains negative but not significant, even though the coefficient is now much larger than in table 3.

Overall, tables 2, 3 and 4 offer strong and consistent evidence that gubernatorial appointments in Russia between the years 2005 and 2012 were indeed characterized by a trade-off between the necessity to create political support for the government, and the need for structural change in Russia's regions. The fact that the link between appointments and pro-regime votes is especially strong in monotowns adds empirical support to the thesis advanced by Hedlund (2014), who argues that one reason these single company towns are kept alive through government subsidies is the important role they play as reservoirs for easily available pro-government votes.

Apart from the necessity to keep monotowns alive for political reasons, an additional potential mechanism to explain the negative correlation between economic performance and gubernatorial appointments is a lack of incentives for regional governors to engage in economic experimentation and initiative taking. As in the case of monotowns, this channel also seems to be directly related to the way regional officials are evaluated in the country (Yakovlev 2014; Rochlitz et al. 2015, page 12).

Again comparing Russia to China, we see that in China regional officials have been very active in experimenting with different economic policies, which if successful have then been adopted throughout the country (Heilmann 2008; Florini et al. 2012). China's regional governors are encouraged by the regional party secretaries who are supposed to evaluate them to engage in pro-growth economic experimentation, as both for regional governors and party secretaries economic performance is an important promotion criterion. In other words, incentives for both the regional governors in China and those responsible to monitor and evaluate their performance are aligned along the objective of economic growth.

This is not the case in Russia, where regional governors are monitored and evaluated by the regional security services, as well as by the presidential envoys who head the country's eight federal districts[7]. While the regional security services and the presidential envoys are responsible for social and political stability in the regions, they are not responsible for economic performance. Instead, the regional security services are evaluated with respect to the number of successfully conducted inspections and controls they

[7]Russia's 83 regions (85 since the annexation of Crimea in 2014) are grouped into 8 federal districts, each headed by a presidential envoy directly appointed by the president.

carry out, with the number of penalties and fines administrated positively entering the evaluation score (the so-called "palochnaia sistema" [system of sticks], [cf. Nazrullaeva, Baranov, and Yakovlev 2013]).

As Russia's legal environment is characterized by a large number of often contradictory regulations, it is extremely difficult for any state official to introduce new initiatives and experiment with new economic policies without breaking at least some of these formal rules. This situation has worsened with the fight against corruption becoming a government priority during recent years, as the government's main mechanism to fight corruption are administrative measures, i.e. a higher number of audits, even stricter regulation, and increased power for the controlling authorities (Yakovlev 2014, page 7; Inozemtsev and Zhukova 2016, page 25). One consequence of these policies is an increase in the number of criminal cases against Russian officials, including some recent cases against mayors, regional vice-governors and governors (Lipman and Petrov 2016). In other words, showing economic initiative might easily get you into conflict with the regional security services who have strong incentives to identify any breaking of the rules, while not rocking the boat is appreciated, as the responsibility of those authorities that are evaluating regional governors is to keep things quiet and stable.

As a result, both the necessity to run political machines and an excessive focus on control and stability create a system where regional officials who attempt to implement structural reforms or new economic policies are effectively punished for their initiatives. Putin's return to the presidency in 2012 has strengthened this system further, as both the Arab spring and the protests during the 2011/2012 election cycle increased the concerns of the regime with political stability. Paradoxically, the decision taken in 2008 to extend the presidential term from 4 to 6 years led to a situation where Duma and presidential elections are now alternating, leading to a situation where the potential instability of an election is always on the horizon. As economic and structural reforms, for example the shifting of subsidies from obsolete monotowns to more dynamic sectors might result in a period of temporary social instability and simultaneously endanger the Kremlin's ability to rely on regional governors' political machines, such reforms are unlikely to take place in the country's current political system. Instead, the Kremlin seems to rely ever more on mechanism of political and social control, as well as on propaganda and adventurism abroad, to counter the potential risks associated with and divert attention from a worsening economic situation.

6 Conclusion

Russia today provides an example where the need to hold authoritarian elections is consolidating a system that is economically stagnating. That authoritarian elections and pro-growth incentives do not necessarily have to be mutually exclusive, however, has been demonstrated by such authoritarian regimes as Singapore under Lee Kuan Yew or South Korea under Park Chung-hee (Means 1996; Bellows 2009; Hong and Park 2014), where controlled elections existed alongside a meritocratic pro-growth bureaucracy and high rates of economic growth. Contemporary China, in turn, provides an example of an authoritarian regime without elections at the regional and national level, but with a meritocratic bureaucracy that is characterized by strong pro-growth incentives (Yao 2016). Russia's hybrid authoritarian regime, on the other hand, seems to have ended up with the worst of both worlds, with the necessity to win authoritarian elections forcing the regime to sacrifice pro-growth incentives for regional state officials.

The findings of our paper have important implications with respect to the literature on authoritarian electoral regimes, political machines and economic growth. While it has been argued that holding elections provides authoritarian regimes with a range of informational and other advantages that makes them more robust (Ghandi and Lust-Okar 2009; Blaydes 2011; Boix and Svolik 2013), empirical evidence to confirm this hypothesis has so far been mixed at best (Brownlee 2010). Indeed, Reuter and Robertson (2012) argue that while holding authoritarian elections might provide short-term political advantages, the long-term economic consequences could well be negative and destabilizing. Incentives for subnational officials are of key importance in this respect, as they have both a range of tools at their disposal to improve the regional economy and business climate, but also command political machines that can help the regime to win elections. In China, local and regional officials have made extensive use of the economic tools at their disposal to promote economic growth, as this seemed to be the best way forward to advance their careers (see e.g. Zhang 2007 with respect to property rights protection for investors). In Russia, instead, the center in Moscow has sent clear signals that political support is more important than growth if regional officials want to keep their jobs, thus incentivizing them to deliver high turnouts and vote margins for the ruling party by relying on the political machines they command.

Usually, the way political machines work is not compatible with promoting growth, as political patrons provide their clients with preferential contracts, tax breaks, subsidies, permits and protection not based on economic criteria, but rather in return

for political loyalty and support. As this paper shows, the negative economic effects of running political machines are exacerbated in contexts where outdated industrial structures are kept alive for political reasons, which might be one of the reasons why the economic effect of patron-client relationships and political machines was less harmful in a number of East-Asian countries than for example in India or Russia. However, the way political machines function varies significantly from country to country, which makes it difficult to clearly predict the relationship between patron-client relationships and economic growth in any given context. For example, in a study on patron-client relationships in South and East Asia, Khan (1998) illustrates how the political machines prevalent on the Indian subcontinent after independence lead to industrial sclerosis, while the specific patron-client relationships in South Korea actually had a positive impact on economic performance, by aligning incentives for entrepreneurs, bureaucrats and politicians along the objective of increasing long-term growth. Studying different contexts in detail to better understand the nexus between political machines, authoritarian elections and economic growth remains therefore a promising research agenda with a lot of potential for the future.

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