

Performance Incentives under Autocracy: Evidence from Russia's Regions*

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Abstract

Available evidence indicates that there is considerable variation among autocracies in the extent to which subnational officials are rewarded for economic growth. Why is economic performance used as a criterion for appointment in some autocracies but not in others? We argue that in more competitive—though still autocratic—regimes, the political imperatives of maintaining an electoral machine that can win semi-competitive elections leads regime leaders to abandon cadre policies that promote economic development. Using data on turnover among high-level economic bureaucrats in Russia's 89 regions between 2001 and 2012, we find that performance-based appointments are more frequent in less competitive regions. These findings demonstrate one way that semi-competitive elections can actually undermine economic development under autocracy.

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1 Introduction

The study of political appointments has long been central to the study of autocracy. This is especially true for those interested in policy outcomes. After all, the criteria that autocrats use to evaluate the performance of appointees are certain to affect the behavior of appointees. One particularly important question for political economy is whether economic performance metrics are used to evaluate subnational officials. Scholars, especially those studying China, have argued that reappointing or promoting economic policy bureaucrats on the basis of good economic performance can incentivize local officials to pursue pro-growth policies.¹ And, indeed, a number of studies now show that at least some subnational officials in China are evaluated on the basis of economic performance in their jurisdiction.² However, in some other settings, such as Russia, studies find that regional economic performance has little impact on the career prospects of regional officials.³

Why are subnational officials appointed on the basis of economic performance in some settings, but not in others? This paper investigates this question. Specifically, we examine how regime competitiveness affects the usage of economic performance metrics in making authoritarian appointments. We argue that more competitive autocracies are less likely to pursue performance-based appointments. In competitive autocracies, autocrats must expend considerable effort on maintaining an electoral machine that can help the regime win elections. The imperative of maintaining such a machine compels autocrats to favor appointees with political skills over those with a track record for producing strong economic performance.

We examine this argument with an original dataset on turnover among high-level economic policy bureaucrats in Russia's 89 regions between 2001 and 2012. By taking advantage of variation in authoritarian regime type across Russia's regions we investigate how regime competitiveness affects the extent to which regional vice governors with responsibility for economic policy making are turned out of office when

economic performance is poor. The use of subnational data allows us to analyze a large number of analytically comparable appointment settings, while holding several existing explanations constant.

All of Russia's regions are electoral authoritarian regimes, but some are more competitive than others. The more competitive regions can be classified as competitive authoritarian regimes, while the less competitive regions can be classified as hegemonic authoritarian regimes. We find that poor economic performance increases the likelihood that economic vice governors will be removed from office in hegemonic authoritarian regimes. However, in competitive authoritarian regions, poor economic performance has no effect on the reappointment chances of economic vice governors.

Our findings indicate that semi-competitive elections may have side effects that undermine economic development. This is not to say that electoral competition does not have other, salubrious effects on economic development. But our findings do suggest that the machine politics associated with competitive authoritarian elections can undermine meritocratic appointment schemes and, thereby, have deleterious consequences for economic development. In this way, our research contributes to the growing body of literature that stresses the importance of institutional differences among authoritarian regimes.⁴ When it comes to the establishment of performance incentives, differences among autocracies may be just as important as differences between dictatorship and democracy.

2 Performance Incentives and Authoritarian Appointments

All dictators delegate some authority to subordinates—ministers, governors, mayors, prefects, party officials—and understanding these appointments is key to understanding how power is distributed in authoritarian polities. For this reason, analysis of political appointments has long been central to the study of authoritarian regimes. One strand of literature has focused on the ‘characteristics’ of appointed officials—see

for example, the voluminous literature on generational change and ‘reds’ vs ‘experts’ in the Communist Party of the Soviet Union⁵ and the literature on the ethnic basis of appointments in Africa’s dictatorships.⁶

A second strand of literature, meanwhile, focuses on how performance in office affects career advancement.⁷ An increasing number of studies in political economy attempt to determine whether economic performance metrics are being used in autocratic appointments at the subnational level. For those concerned with economic development, the reasons for this focus are clear: when job security is linked to economic performance metrics, appointees are given strong incentives to foster good governance, provide public goods, and avoid rent-seeking. By contrast, if career advancement is based on political or loyalty-based performance criteria, then appointees will focus their energies on fulfilling these duties and will have less incentive to promote pro-growth policies.

Studies of China figure most prominently in this literature. Through its “Target Responsibility System” China’s party leadership has established a series of performance indicators that central party officials are supposed to use when evaluating the leaders of subnational governments. Among the indicators are a range of economic performance targets, and there is substantial evidence that these indicators are used in the evaluation of subnational officials in China. For example, Maskin et al. find that strong economic growth in a region has a positive impact on the percent of the Chinese Communist Party’s (CCP) Central Committee drawn from that region. This finding is echoed for various types of officials and for alternative performance indicators by a large and growing body of research.⁸ And while economic performance is clearly not the only thing that matters—factional ties and political loyalty also matter—most of the literature considers economic performance to be at least one of the factors that determine career advancement in the Chinese governmental hierarchy.⁹

To what extent is this practice of rewarding subnational officials for economic performance unique to China? Unfortunately, systematic studies of appointment criteria in other autocracies are rare. Two major exceptions, however, are the Soviet Union and Russia. In the Soviet Union many argued that political loyalty and connections to powerful patrons in Moscow were the main drivers of political advancement among regional officials.¹⁰ While not discounting the important role of political loyalty, others argued that effectiveness in meeting development and planning goals was also important.¹¹ And indeed, several quantitative analyses have shown that both political connections and economic development did matter under certain conditions.¹²

Studies of political appointments in post-Soviet Russia, however, come to different conclusions. Focusing mostly on gubernatorial appointments, this research typically finds that regional economic performance has little, if any, effect on the career prospects of regional officials. Rather, political performance criteria are paramount. For example, Reuter and Robertson find that regional governors are reappointed (or promoted) when they are successful at mobilizing votes for the ruling party, United Russia. Economic growth matters much less, and only in periods when key political tasks have already been solved (e.g., after important elections).¹³ Qualitative studies paint a similar picture, emphasizing political connections with top leaders and successful vote mobilization as the key drivers of career success among governors.¹⁴ Unlike in China, regional officials in most Russian regions do not sign performance contracts.¹⁵ In 2007 the Russian government established a series of 43 indicators that were supposedly used to evaluate the effectiveness of Russia's regional governors, but there is little evidence that that these performance criteria are actually used when making appointment decisions.¹⁶

Why are appointments handled so differently in these two autocracies? Why is economic performance rewarded in China, but not in Russia? More generally, why are appointed regional officials evaluated on the basis of economic performance in

some settings but not in others? There are few comparative empirical studies of this question.¹⁷ Rather, most studies focus on identifying the appointment criteria that are used in a given country. The next sections examine how authoritarian regime type might affect the application of economic performance criteria.

3 Authoritarian Regime Type and Performance-Based Appointments

It is hard to ignore the striking differences between Russia's competitive authoritarian regime and China's closed authoritarian system, and it seems natural to wonder whether these differences might also explain the different appointment strategies pursued in the two countries. Indeed, the undeniable importance of regime type for so many political and economic outcomes suggests that its possible effects on appointment strategies must also be considered. But there are very few studies that consider the effect of political regime type on bureaucratic appointments, and there are no studies that look at variation in authoritarian regimes. Moreover, the work that does exist either examines the effect of regime type on some aspect of bureaucratic quality other than appointments or focuses on appointment schemes for street-level bureaucrats. For example, Dixit argues that because autocrats must pay bureaucrats out of their own pockets while democratic rulers pay bureaucrats by transferring wealth from citizens, autocrats are less inclined to establish well-paid bureaucracies.¹⁸ This is a compelling argument, but it applies specifically to the wages of bureaucrats, not to the methods of their selection, which we study here.

Other arguments focus on electoral competition rather than constraints on rent seeking. Mueller argues that high levels of electoral competition and the attendant fear of losing elections dissuades incumbents from maintaining patronage systems, because they fear that their opponents could use this patronage system against them in the next election.¹⁹ Geddes also argues that electoral competition can, under certain

circumstances, lead to administrative reform.²⁰ She argues that if contending parties are locked in close competition and both parties have equal access to patronage, then neither side can gain advantage in this patronage standoff by further entrenching the patronage system. Under such conditions, a party may seek to gain electoral advantage by defecting from the patronage standoff and appealing to voters who oppose cronyistic appointments.

However, both Mueller's model and Geddes' study focus on administrative reform, not the specific appointment strategies pursued by individual leaders. While a law on administrative reform may solve the type of commitment problems that these authors' envision, the actual appointment strategies pursued by leaders are not a commitment device. If a leader decides to make appointments on the basis of competence and performance criteria, there is nothing preventing his successor from appointing cronies. Hence, while these models help us understand why leaders enact administrative reform, they cannot tell us why some leaders evaluate elite bureaucrats on the basis of merit in the absence of administrative reforms that oblige them to do so. Furthermore, these conditions do not apply to most authoritarian regimes where the state enjoys a clear advantage in patronage resources.

So how might authoritarian regime type affect the appointment schemes that are employed for high-level bureaucrats? Standard models of democratic accountability suggest that performance-based criteria would be more prevalent in more competitive regimes. In democracies, voters punish incumbents for poor economic performance.²¹ For this reason, democratic leaders have powerful incentives to take action in the face of poor economic performance. One action they can take is to fire subordinates responsible for implementing economic policy. Indeed, as the literature on blame avoidance shows, shifting blame to agents is a common strategy that principals employ.²²

However, accountability mechanisms—e.g., elections, parties, civil society, and

the media—are much weaker under competitive authoritarianism than they are under democracy. Thus, incumbents in electoral authoritarian regimes may have little electoral incentive to fire personnel in response to economic downturns. Still, it may be that they have more electoral incentive than incumbents in closed authoritarian regimes, and recent studies have demonstrated that autocrats in competitive authoritarian regimes use elections to gauge public discontent and calibrate their policy stance in response.²³ Thus, one possibility is that performance-based appointments will be more prevalent in competitive authoritarian regimes than in closed regimes. We treat this as the null hypothesis.

We argue something different, however. In short, we argue that since autocrats in competitive authoritarian regimes have to expend great effort engineering election results, and since subnational officials are key players in this effort, they may prioritize political criteria over economic ones. We start with the basic assumption that leaders want to survive in office, and as such, they pursue appointment policies that will help them stay in office. We argue below that the nature of elections in more competitive autocracies undermines the incentives of office-seeking incumbents to pursue performance-based appointment strategies. In competitive authoritarian regimes, winning elections by large margins is a top priority. Losing an election would be catastrophic, and even just a poor showing at the ballot box can embolden the opposition and lead to elite defections.²⁴

Securing comfortable vote margins is no easy task: elections and voters must be meticulously managed. Ballot fraud and systematic repression are part of the equation, but they are not the only, or even the primary, form of political manipulation employed by these regimes.²⁵ Cooptation, bribery, media control, vote buying, voter intimidation, prebendalism, clientelism, and patronage spending are among the most common tools used by incumbents to disadvantage the opposition. Importantly, effective implementation of these tasks requires concerted effort by state officials, including

those responsible for making economic and fiscal policy. Economic policy makers must calibrate electoral spending cycles, target social spending to reward supporters and punish opponents, and organize vote buying campaigns.²⁶ Furthermore, these officials must cultivate relations with elites and induce them to help mobilize votes.²⁷ Prominent politicians, opposition figures, traditional leaders, local strongmen, landlords, oligarchs, prominent businessmen and other such opinion leaders must be bought off with access to rents and spoils. For economic planners, business leaders are especially relevant, as they may be induced to cooperate with the regime with tax breaks, subsidies, state contracts, regulatory exemption, or insider deals. In Russia, for example, Frye, Reuter, and Szakonyi find that regional officials use various carrots and sticks to induce employers to turn out their employees to vote.²⁸

In sum, then, winning elections in competitive authoritarian regimes requires effective and perpetual management of a far-reaching electoral machine. This machine must be constantly maintained, even outside of election cycles. In more closed autocracies, by contrast, opposition is circumscribed and subject to systematic repression. Civil society and political parties are weaker and there are fewer resources available for anti-regime collection action. Politics is less competitive and elites have few openings through which to challenge the regime. Because election outcomes in closed systems are predetermined by fraud, coercion, and opposition circumscription, economic policy makers will not be called upon to expend time and resources on the task of mobilizing votes.²⁹

So how will this affect the prevalence of appointments based on economic performance? In competitive authoritarian regimes, winning elections is a top priority. Hence, effective management of local electoral machines may be assigned a higher priority than economic development. This is similar to the view espoused by Rochlitz et al. who offer the following observation about gubernatorial appointments in Russia under Putin: “At the time, Putin still had to consolidate his power, and the battle

between him, the oligarchs, and the strong regional elites headed by Russia's regional governors was still open-ended. In putting these new institutions into place, political control was clearly the main objective, whereas establishing institutions in support of sustainable long-term growth rates was not a priority."³⁰ In other words, subnational officials, including those responsible for making economic policy, end up being judged on the basis of political criteria, not economic ones. For economic policy makers, such political criteria might include vote mobilization, controlling social unrest, the efficiency of vote buying, and the political cooptation of business elites. In regimes that are more closed, on the other hand, policymakers may have more of a free hand to pursue appointments based on economic performance.³¹

Of course, principals may want to reward *both* political and economic competence, but we have no reason to assume that economic competence and political effectiveness are traits that are positively correlated. It will often be the case that leaders achieve one of these tasks but not the other. Thus, a leader in a competitive authoritarian regime is often faced with a stark choice: reappoint officials with political skills or reappoint officials capable of achieving economic performance targets. Given the importance of the former in competitive authoritarian regimes, it will often win out. This is not to say that leaders in these regimes do not want economic growth. Among other things, strong economic performance contributes to regime stability. But appointing officials who can help the regime win elections is a more direct way of ensuring political survival than promoting long-run economic growth. Competitive authoritarian leaders have a difficult time committing themselves to long-run development when faced with near-constant short-run political insecurity.

So competitive authoritarian leaders will often leave an economic policy-maker in place when economic conditions worsen because that official has some political skills that help the regime maintain its machine. As a result, in competitive authoritarian regimes, we should observe only a weak or non-existent relationship between economic

conditions and turnover among economic policy-makers. In more closed regimes, by contrast, we should observe more turnover among economic policy-makers when economic conditions worsen.

4 Empirical Strategy and Data

One of the problems with testing arguments about authoritarian appointments is the difficulty of cross-national comparison. Gathering appointment data on many countries is time-intensive and difficult, requiring country expertise for many countries. Furthermore, as is often the case in cross-country analysis, it is challenging to isolate the effect of a single variable since there are many macro-level factors that could explain variation in appointment strategies. In this paper, we address these inferential challenges by employing micro-level, cross-regional data on appointments within a single country, Russia. Specifically, we use original data on the appointment and firing of regional vice governors by subnational executives in Russia's 89 regional administrations between 2001 and 2012.

The Unit of Analysis: Russia's Regional Vice Governors

'Regional administration' is a generic term for the regional executive branch in Russia's regions. The regional administration in most regions is comprised of three tiers, headed in all regions by a head of administration, colloquially called a 'governor.' Serving under the governor are the deputy heads of administration, colloquially called 'vice governors.'³²

Vice governors are appointed by the governor in all regions, with regional legislatures playing a limited role in confirming these appointments.³³ Furthermore, United Russia (UR) had majorities in most regional legislatures during most of the period under analysis and governors exert significant influence over the regional branches of UR. It is also worth noting that there is little anecdotal evidence to suggest that the federal center is involved in the appointment of vice governors. Rather, our inter-

views with regional governors and vice governors indicate that this task is left solely to regional governors.

Vice governors are prominent elite figures in their regions. In 2006, the Russian business weekly *Expert* published a survey that asked experts to rank the top 10 most influential people in 32 regions.³⁴ In all 32 regions, at least one vice governor made the list. In 9 of 32 regions more than four of the spots were occupied by vice governors, while in 16 of the regions two or three vice governors made the list. The power of vice governors is based on their access to the governor and on their direct influence over policy making. In most cases, vice governors hold one or more policy portfolios (e.g., economics, construction, housing, internal politics, healthcare, or education), such that they are responsible for coordinating policy in a specific area or set of areas. As executive branch officials, their primary task is policy implementation, but they also sign executive orders that can only be overridden by the governor or by a law passed by the legislature. In addition, vice governors are responsible for coordinating the work of the various departments and ministries that make up the third tier of the regional administration.

In this paper we focus specifically on the appointment and dismissal of those vice governors and department heads who are responsible for coordinating economic policy. Given our interest in the factors that lead to the establishment of bureaucratic procedures that foster economic development, it makes sense to focus on those officials who are responsible for policy making in that area. If any officials in the regional administration are appointed on the basis of economic performance, it should be economic vice governors and ministers of economic development.

Data on the appointment and dismissal of regional administration officials comes from an original database, compiled by the authors, on the tenure of all 2790 vice governors serving in all of Russia's regions between 2001 and 2012. This data was compiled from yearly directories of Russian government officials published by the

Maximov Press.³⁵ This data represents a significant step forward in cataloging and organizing information on this large and important class of Russian elites. Data was also collected on a select group of ministers and department heads, including those with responsibility for economic development.

To identify economic vice governors we look at the specific policy portfolios that are assigned to each vice governor. Details about these policy portfolios and the construction of the data set are provided in Appendix B. Our dependent variable is a dichotomous variable equal to one if the economic vice governor/minister left office in a given year (i.e., is not observed in office in the following year) and zero if the vice governor remained in office or was promoted. This variable is called *VG Turnover*. Promotions, transfers to other regions, deaths, and health-related resignations are censored such that a vice governor who experiences one of these events in a given year is not counted as leaving in that year. However, the vice governor/minister is not counted as a member of the regional administration serving in the next year. Interestingly, promotions and lateral transfers to other regions are rare in the vice gubernatorial corpus. See Appendix B for more information on the coding of promotions.

Using subnational, as opposed to cross-national, data for this analysis is attractive because it allows us to examine a large number of nearly identical bureaucratic configurations and appointment schemes in a large-N setting. In addition, this research design allows us to hold constant state structure and levels of political centralization, two of the main existing explanations for variation in performance-based appointments. Also, by examining variation in appointment strategies within a single country, we are also able to hold constant historical and cultural legacies. Finally, the lack of promotion and interregional mobility among the Russian vice-gubernatorial corpus also allows us to circumvent a source of endogeneity that has plagued studies of performance-based appointments in China. In that country, scholars have argued

that political favorites, who are already poised for political advancement, are assigned to fast growing regions to help burnish their credentials.³⁶ In the Russian regions, however, almost all vice governors are chosen by the regional governor from among the regional elite, and the vice governors are only rarely moved from one region to another.

Regional Regime Type and Economic Growth

Our main empirical task is to identify how authoritarian regime type affects the likelihood that economic vice governors/ministers will be turned out of office when economic performance is poor. We measure regime type at the subnational level in Russia using the component parts of an index developed by Nikolai Petrov and Aleksei Titkov at the Carnegie Moscow Center.³⁷ To construct this index Petrov and Titkov ask experts to rate regions on a scale of 1 to 5 in each of the following categories: political pluralism, independent press, openness, economic liberalization, civil society, corruption, local self-government, democratic elections, and elite competition. To create the measure used in this paper, we gather the components of the scale that, in our view, bear most directly on the concept of regime competitiveness: political pluralism, independent press, openness, civil society, democratic elections, and elite competition.³⁸ These individual scores are then summed to create a *Regime Type* score, ranging in the data from 11 to 33.³⁹ See Figure A1 in the Appendix for a map showing the spatial distribution of this variable as of 2010.⁴⁰

In recent years, scholars of comparative politics have devoted increasing attention to variation in subnational regime type.⁴¹ Russia is ripe for such analyses, as its regions display considerable variation in levels of competitiveness.⁴² All of Russia's regions are electoral authoritarian regimes, but there is significant variation in their level of competitiveness.⁴³ Russia's more competitive regions—e.g., Perm, Yaroslavl, and St. Petersburg—are probably best described as 'competitive' authoritarian regimes, while its less competitive regions—such as Tatarstan, Kemerovo, and Belgorod—

are probably better described as ‘hegemonic’ authoritarian regimes.⁴⁴ Howard and Roessler describe such regimes as those where “restrictions on opposition parties and their political activities, bias in state-owned media coverage, and other forms of repression so severely circumscribe contestation that the incumbent candidate or party does not face the possibility of losing.”⁴⁵ Russia’s competitive authoritarian regimes are more open, but these regimes are still autocratic because the incumbent uses various illiberal means “to create an uneven playing field between government and opposition.”⁴⁶

In order to determine whether the rate of dismissal for poor economic performance differs between competitive and hegemonic authoritarian regimes, we interact this measure of regime type with a measure of economic growth in the region. Specifically, as our proxy for economic performance, we use the lagged year-on-year change in gross regional product provided by Russia’s federal statistical service (Rosstat). This variable is called *Lagged Econ Growth*.

Additional Independent Variables

In all models we also include a series of controls. First, we control for the turnover of the governor. Vice governors and ministers serve at the pleasure of the governor and new governors often remake the administration upon taking office. To measure governor turnover, we include a dummy variable equal to one in the year when a governor leaves office and one in the year after the governor leaves office. *Governor Turnover* is equal to one in both years because governors that turn over late in the year often do not have the time to replace the vice-gubernatorial corpus in the current year. They may fire many of the old vice governors in the next year, but this vice governor turnover then appears in our measure for the following year.⁴⁷ Results are unchanged if we use only the first year after a change of governor.

Many accounts of Russian regional politics assume that governor turnover induces a complete remaking of the vice gubernatorial corpus. To be sure, governor turnover

induces a high degree of turnover in economic vice governors. However, there is still a great deal of variation in the extent to which the vice gubernatorial corpus is renewed when a new governor comes into office. On average, about 40% of vice governors turn over when a new governor comes to office. And importantly for this paper, there is significant variation across regions and across time in the extent to which economic policy vice governors lose their jobs when a new governor comes into office.

Russia's ethnic republics, especially those with non-Russian majorities, are often found to exhibit very different socio-economic dynamics, so we also control for the share of a region's population that is ethnically Russian (*Percent Russian*). In addition, we control for the percent of GRP that is due to natural resource extraction (*Resource Extraction as Pct GRP*). In regions where economic performance is dependent on commodity prices, economic growth may depend less on government policy and, as a result, performance-incentives may not be employed. And if it were also the case that regional regime type and natural resource wealth were collinear, then our estimates of the conditional impact of regime type could be biased.⁴⁸ Finally, we also control for levels of logged gross regional product per capita (Log GRP per capita), a measure of total output per capita and, thus, development in the region.

Modeling Strategy

Our data is vice governor-year format: each year that a vice governor is in office is included as one observation. We then seek to estimate the determinants of a vice governor being turned out of office. All observations for a given vice governor are zero up until the year in which the vice governor is dismissed. Thus, our data is binary time-series, cross sectional (BTSCS). To model duration dependency in BTSCS data Carter and Signorino suggest including a linear time variable ($tenure_{it}$) as well as its quadratic ($tenure_{it}^2$) and cubic ($tenure_{it}^3$) terms.⁴⁹ We adopt that approach here and note that this modeling strategy renders our approach similar to survival analysis. We account for region heterogeneity and contemporaneous time shocks by

including region random effects (i.e., allowing the intercept to vary by region) and year fixed effects, respectively. We model region heterogeneity with random effects—as opposed to fixed effects—so that we may include several slowly moving (nearly time-invariant) institutional variables (e.g., *Regime Type*) without encountering complications with multicollinearity. All results remain substantively and statistically unchanged in models that omit the random effects parameters.

We estimate the following regression:

$$\text{Turnover}_{it} = \text{logit}^{-1}(\alpha_r + \text{Growth}_{t-1,r} + \text{Regime Type}_{t,r} + \text{Growth}_{t-1,r} \cdot \text{Regime Type}_{t,r} + \mathbf{X}_{\mathbf{rt}} + \text{tenure}_{it} + \text{tenure}_{it}^2 + \text{tenure}_{it}^3 + \tau + \epsilon_{it}) \quad (1)$$

where α_r is a set of region-level random effects (i.e., varying intercepts); $\mathbf{X}_{\mathbf{rt}}$ is a matrix of region-year control variables including Log GRPpc and Percent Russian; τ is a vector of year dummy variables, and ϵ_{it} is the disturbance term.

5 Results

Table 1 displays our first set of results. Each column displays the average marginal effects produced by a logistic regression of *VG Turnover* on a set of independent variables. In Models 1 and 2 we examine the predictors of vice governor turnover without considering the conditional effect of regime type. The first result to note is that economic growth does not have a statistically significant effect on turnover among economic vice governors and ministers. It seems that, at least when all regime types are aggregated, economic growth has little effect on the reappointment chances of economic vice governors.

Before moving to examine heterogeneity in regime type it is first worth noting some findings with regard to other independent variables. As expected, the arrival of a new governor is indeed associated with substantial increases in the replacement of vice governors. In Model 1, we see that when a new governor has come into office

in the last two years, the probability of economic vice governor turnover increases markedly, with a positive and statistically significant average marginal effect of 0.19. When the governor does not turn over the probability of an economic vice governor turning over in a given year is only 16%, but when the governor turns over, that probability increases to 39%. There seems to be less turnover among economic vice governors in wealthier regions, as indicated by the negative and significant coefficient on *Log GRPpc*, but the other control variables have no effect on rates of turnover among economic vice governors. *Regime Type* also has no effect on its own.

In Models 4–6 of Table 1 we interact our measure of regional regime type with lagged economic growth. This allows us to examine variation in the use of performance-based appointment criteria across levels of regime competitiveness. This interaction term is statistically significant in all models—with or without control variables, and in both the narrow and broad subsets of our data—indicating that the effect of economic performance on economic vice governor turnover is indeed modified by regime type. The positive coefficient indicates that the effect of poor economic performance on vice governor turnover decreases (increases) as levels of regime competitiveness increase (decrease).

The interactive effect is informative, but examining the conditional effect of economic performance across different values of regime competitiveness can show us whether the effect of economic performance is statistically significant for theoretically interesting values of the latter. As Figure 1 shows, economic growth decreases the probability of vice governor turnover in less competitive regions. In more competitive regions, meanwhile, positive economic growth has either no effect or a small positive effect on vice governor turnover. The small positive effect of economic growth on vice governor turnover in competitive authoritarian regions is hard to explain. But one thing is clear: if any regions are holding economic vice governors accountable for poor economic performance it is hegemonic authoritarian regions, not competitive

Table 1: Main Results

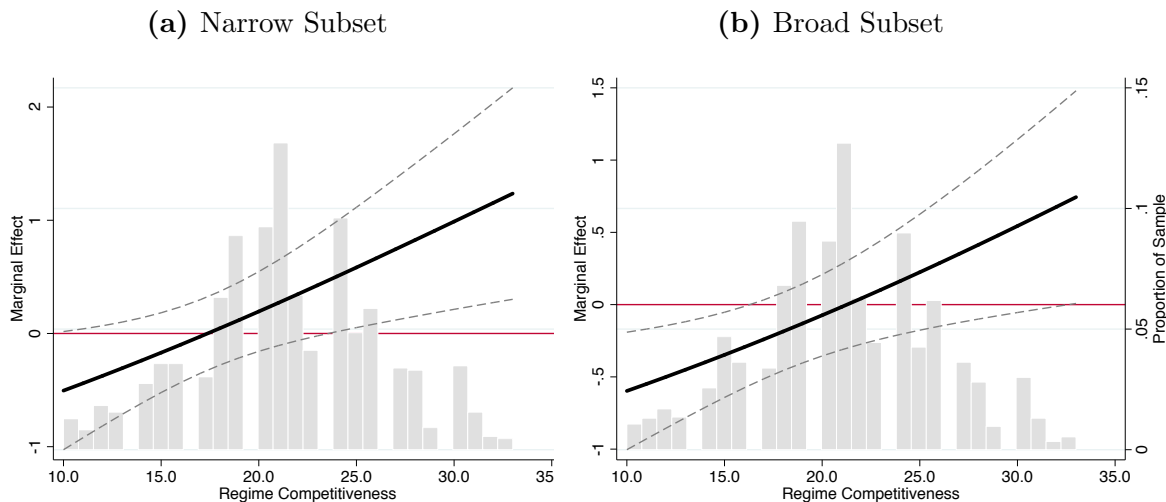
VARIABLES	(1) Turnover	(2) Turnover	(3) Turnover	(4) Turnover	(5) Turnover	(6) Turnover
Governor Turnover	0.193*** (0.018)	0.193*** (0.017)	0.173*** (0.023)	0.170*** (0.022)	0.193*** (0.018)	0.193*** (0.017)
Lagged Econ Growth	-0.169 (0.123)	-0.113 (0.136)	-1.289*** (0.500)	-1.295** (0.538)	-1.166*** (0.378)	-1.216*** (0.414)
Log GRPpc		-0.043** (0.021)		-0.096*** (0.023)		-0.043** (0.022)
Percent Russian		-0.006 (0.043)		0.022 (0.052)		-0.008 (0.043)
Resource Extraction as Pct GRP		0.000 (0.001)		0.003** (0.001)		0.000 (0.001)
Regime Type	0.001 (0.002)	0.003 (0.003)	-0.076** (0.030)	-0.076** (0.031)	-0.054** (0.022)	-0.057** (0.023)
Regime Type X Lag Econ Gr			0.071** (0.028)	0.074*** (0.029)	0.052** (0.021)	0.057*** (0.022)
Observations	2,077	2,070	1,096	1,093	2,077	2,070
Subset	Broad	Broad	Narrow	Narrow	Broad	Broad
Number of Regions	88	88	87	87	88	88

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Coefficients shown are average marginal effects. Year FEs and tenure cubic polynomial not shown.

ones. In the broad subset of data, the probability of economic vice turnover in hegemonic authoritarian regimes (where *Regime Type* is set at the the 10th percentile in the data) is 23% when economic growth is -6% (the 10th percentile in the data). But when economic growth is at the 95th percentile in the data—15%—the probability of turnover drops to 16%. Since the probability of vice governor turnover in any given year is already low, this represents a significant effect for hegemonic authoritarian regimes. In these regions, moving from good economic performance to poor economic performance leads to a 43 percent increase in the probability of vice governor turnover. In competitive authoritarian regimes, meanwhile, economic performance has no statistically significant effect on turnover.

Figure 1: Marginal Effect of Econ Growth on VG Turnover, Conditional on Regime Type



6 Robustness

In Table 2 we explore several alternative specifications.⁵⁰ Due to an influx of refugees during the second Chechen war, economic growth in Ingushetia is highly volatile (and the region is highly autocratic). In Model 1 we drop this region from our main specification and check to see that our main interactive effect remains robust. It does remain robust and results on our conditional effects (not shown) are statistically and substantively similar.⁵¹ In Model 2, we drop the entire North Caucasus region from our analysis. Political dynamics in these regions can be very different from those in the rest of Russia and political instability in the region makes growth rates volatile. Results remain robust when dropping these regions. Model 3 drops another set of atypical regions from the analysis—autonomous okrugs. These regions are typically remote, have tiny populations, and have economies that are closely linked to their parent regions. Our results remain unchanged when dropping these observations.

In Model 4, we examine whether the prevalence of performance-based appointments varies between resource-rich and resource-poor regions. If it did, and if natural resource wealth were negatively correlated with regime competitiveness, then main

our results could be biased. We control for resource wealth in the main specifications, but here we go a step further and check for an interactive effect. None is found.

Table 2: Robustness Checks

VARIABLES	(1) Turnover	(2) Turnover	(3) Turnover	(4) Turnover	(5) Turnover
(mean) gov_turnover_dummy_ind	0.194*** (0.017)	0.188*** (0.017)	0.191*** (0.018)	0.192*** (0.017)	0.236*** (0.028)
(mean) growth_1	-1.172*** (0.451)	-1.180** (0.492)	-1.119*** (0.433)	-0.127 (0.180)	-1.267*** (0.390)
(mean) lngdp	-0.041* (0.023)	-0.039* (0.022)	-0.045* (0.026)	-0.043** (0.021)	-0.058*** (0.022)
(mean) pctRussian	0.007 (0.042)	-0.010 (0.051)	-0.010 (0.044)	-0.006 (0.043)	0.013 (0.062)
(mean) resource_grp	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	-0.001 (0.007)	0.001 (0.001)
(mean) demnarrow2	-0.056** (0.024)	-0.056** (0.025)	-0.052** (0.024)	0.003 (0.003)	-0.061*** (0.023)
dem2Xgrowth	0.055** (0.023)	0.055** (0.024)	0.052** (0.023)		0.061*** (0.022)
resourcesXgrowth				0.000 (0.000)	
Observations	2,054	1,914	1,952	2,070	872
Subset	Broad	Broad	Broad	Broad	Broad
Number of Regions	87	80	80	88	88

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In Model 5 we estimate our model using an alternative dependent variable. Since some regions have multiple vice governors/ministers with economic policy portfolios serving in the same year it is possible to model the dependent variable as a continuous variable that represents the percentage of economic vice governors/ministers that turn over in a given year. In this setup, the dependent variable ranges from 0 to 1, where a 0 indicates that no economic vice governors turned over in that year and a 1 indicates that all of them did. Intermediate values indicate that some portion turned over.⁵² With a continuous dependent variable, we estimate this model using ordinary least squares. Because this method does not allow for modeling time dynamics in the same way, we prefer the individual-level modeling strategy used above. Nonetheless, it is useful to show that our results are robust to this alternative dependent variable.

Finally, in Models 6–9 we examine our results across several other subsets of economic vice governors/ministers. Model 6 constrains the broad subset such that vice governors with budget, trade, industry, unemployment and/entrepreneurship portfolios are only included in the sample if a vice governor with a specific “economy” or “economic development” portfolio is not found in that region-year. This is a different approach to limiting the number of instances where multiple economic vice governors/ministers are observed in a given year. Model 7 shows results using the broad subset of data, but dropping the economic development ministers. Thus, this analysis only includes economic vice governors. Model 8 shows results using the broad subset of data, but drops economic vice governors with budget and finance portfolios from the analysis. It could be argued that the responsibilities of these vice governors do not extend to policy making, and are purely fiscal. Results remain substantively and statistically unchanged in all these alternative data subsets. Lastly, in Model 9, we restrict analysis only to ministers of economic development, thus excluding all vice governors. The sample size is much smaller here, and while, the directionality of the interaction term remains the same, the conditional coefficient on economic growth

does not reach statistical significance for the more autocratic regimes.

7 Conclusion

Bureaucratic performance incentives are an important component of sustainable economic development. When subnational appointees are evaluated on the basis of economic performance in their jurisdiction, they have strong incentives to eschew rent-seeking and promote economic development. In this paper, we examined the question of why some autocracies cultivate such performance incentives, while others do not. Our investigation centered on the role of regime competitiveness. We found that, in Russia, competitive authoritarian regions are less likely to make regional economic performance a criterion for the reappointment of officials with responsibility for economic policy making. In more closed regions, however, poor economic performance does increase the likelihood that economic policy bureaucrats will be turned out of office.

In regions with semi-competitive elections, economic policy bureaucrats expend considerable effort on calibrating electoral spending cycles, managing relations with clienteles, coordinating vote-buying efforts, and inducing businesses to mobilize voters. In short, they must work to maintain an electoral machine and they are likely to be evaluated on that basis. Subnational officials end up being judged on the basis of political criteria, not economic ones. In hegemonic authoritarian regions by contrast, regime leaders rely more on fraud and coercion to win elections, thus freeing, at least partially, economic policy bureaucrats from the task of running an electoral machine. Thus, in more closed regions, policymakers have more of a free hand to pursue appointments based on economic performance.

Our findings should not be taken to suggest that appointments in closed autocracies are free of clientelism. Considerable evidence suggests otherwise. But performance-based and clientelistic appointments are not always mutually exclusive.

An autocrat's client can be removed for poor economic performance just as a technocrat can. Our findings should only be taken to suggest that competitive autocracies are less likely to make reappointment contingent on economic performance. Future research should investigate the distribution of personalistic and meritocratic recruitment schemes between different types of regimes.

Our findings should also not be construed as evidence that electoral competition always undermines the application of performance-based appointments. In advanced democracies, elections are free and fair, and officials with responsibility for economic policy making are not likely to be implicated in the task of maintaining an electoral machine. We expect that competitive authoritarian regimes represent a middle ground where corrupt political practices lead to the displacement of performance-based appointments for economic policy makers. In democracies and closed autocracies, these dynamics are not at play.

Finally, our perspective emphasizes the roles that bureaucracy and institutions play on promoting economic growth. However, our conclusions do not suggest that closed autocracies should necessarily grow faster. A voluminous literature outlines the many ways that dictators in settings with weak institutions engage in opportunistic behavior that harms long-term economic growth. And even among autocracies, semi-competitive elections may do something to constrain the capricious behavior autocrats. But institutions can have more than one effect, and our results suggest that semi-competitive elections may also have some deleterious consequences for growth. Indeed, at least in Russia, this may be one of the reasons that correlations between regional economic growth and regime competitiveness do not always reveal a positive relationship.⁵³ Future research should do more to establish, in a comparative context, the impact of performance-based appointments on economic growth.

Notes

¹Maskin, E., Qian, Y., and Xu, C. 2000. “Incentives, information, and organizational form.” *The Review of Economic Studies*, 672.; Xu, Chenggang. 2011. “The Fundamental Institutions of China’s Reforms and Development” *Journal of Economic Literature* 49.4.

²Li, Hongbin, and Li-An Zhou. 2005. “Political Turnover and Economic Performance: the Incentive Role of Personnel Control in China.” *Journal of Public Economics* 89; Landry, Pierre. 2008. *Decentralized Authoritarianism in China: The Communist Party’s Control of Local Elites in the Post-Mao Era*. New York: Cambridge; Jia, Ruixue, Masyuki Kudamatsu and David Seim. 2013. “Complementary Roles of Connections and Performance in Political Selection in China” CEPR Discussion Paper No DP9523.

³Reuter, Ora John and Graeme Robertson. 2012. “Sub-national Appointments in Authoritarian Regimes: Evidence from Russian Gubernatorial Appointments.” *Journal of Politics*. 74.4; Reisinger, W. M., and Moraski, B. J. 2013. “Deference or Governance? A Survival Analysis of Russia’s Governors Under Presidential Control.” In Reisinger, William ed., *Russia’s Regions and Comparative Subnational Politics* New York: Routledge.

⁴Gandhi, Jennifer. 2008. *Political Institutions under Dictatorship*. Cambridge: Cambridge University Press; Svoboda, Milan W. 2012. *The Politics of Authoritarian Rule*. New York: Cambridge University Press; Magaloni, Beatriz. 2006. *Voting for Autocracy: Hegemonic Party Survival and its Demise in Mexico*. Cambridge: Cambridge University Press.

⁵Hodnett, Grey. 1978. *Leadership in the Soviet national republics: A quantitative study of recruitment policy*. Oakville, Ontario: Mosaic Press; Moore, Barrington. 1950. *Soviet Politics: The Dilemma of Power*. Cambridge, MA: Harvard University Press; Friedrich, Carl and Zbigniew Brzezinski. 1956. *Totalitarian Dictatorship and*

Autocracy Cambridge, MA: Harvard UP; Rutland, Peter. 1993. *The Politics of Economic Stagnation in the Soviet Union: The Role of Local Party Organs in Economic Management* New York: Cambridge.

⁶Arriola, Leonardo. 2012. *Multiethnic Coalitions in Africa: Business Financing of Opposition Election Campaigns* New York: Cambridge. Scholars have also devoted significant energy trying to understand the formal mechanisms that govern authoritarian appointments, particularly in communist systems. Harasymiw, Bogdan. 1984. *Political Elite Recruitment in the Soviet Union*. New York: St. Martin's; Manion, Melani. 1985 "The Cadre Management System, post-Mao: The Appointment, Promotion, Transfer, and Removal of Party and State Leaders" *The China Quarterly* 102; Burns, John. 1987. "China's Nomenklatura System" *Problems of Communism* 36.6.

⁷Landry; Li and Zhou; Reuter and Robertson.

⁸Li and Zhou; Landry, Pierre, Xiaobo Lu, and Haiyan Duan. 2015. "Does Performance Matter? Evaluating Political Selection along the Chinese Administrative Ladder" APSA 2014 Annual Meeting Paper; Bo, Zhiyue. 2002. "Chinese Provincial Leaders: Economic Performance and Political Mobility since 1949." Armonk, NY: M.E. Sharpe; Guo, Gang. 2007. "Retrospective Economic Accountability under Authoritarianism Evidence from China." *Political Research Quarterly* 60, no. 3: 378-390.

⁹Landry; Jia, Kudamatsu and Seim. Shih et al. find that economic growth plays no role in promotions to the CCP Central committee, and instead find that budget revenue, education, and factional ties were the primary drivers of promotion there. Shih, Victor, Christopher Adolph, and Mingxing Liu. 2012. "Getting Ahead in the Communist Party: Explaining the Advancement of Central Committee Members in China." *American Political Science Review* 106.1.

¹⁰Armstrong, John Alexander. 1959. *The Soviet Bureaucratic Elite: A Case Study*

of the Ukrainian Apparatus Praeger; Rigby, T.H. and Bohdan Harasymiw (eds.). 1980. *Leadership Selection and Patron-Client Relations in the USSR and Yugoslavia*. London: George Allen; Willerton, John P. 1992. *Patronage and Politics in the USSR*. New York: Cambridge.

¹¹Hough, Jerry. 1969. *The Soviet Prefects: The Local Party Organs in Industrial Decision-Making*. Cambridge: Harvard University Press.

¹²Reisinger William and John P. Willerton. 1988. "Elite Mobility in the Locales: Toward a Modified Patronage Model," in Lane, David, ed., *Elites and Political Power in the USSR*. Aldershot: Edward Elgar; Markevich, Andrei and Ekaterina Zhuravskaya. 2011. "M-form Hierarchy with Poorly Diversified Divisions: A Case of Khrushchev's Reform in Soviet Russia" *Journal of Public Economics* 95.11.

¹³Reisinger and Moraski find that economic growth has no impact on gubernatorial reappointment, while the mobilization of votes for the president and/or ruling party has a strong positive impact. Rochlitz et al. find that governors from regions with well-performing economies are no more likely to be promoted than those with poor-performing economies. Rochlitz, Michael, Vera Kulpina, Thomas Remington, and Andrei Yakovlev. 2015. "Performance Incentives and Economic Growth: Regional Officials in Russia and China" *Eurasian Geography and Economics* 56.4.

¹⁴Turovsky, Rostislav. 2009. "Praktiki naznacheniya gubernatorov: inertsia iadicalism v politike tsentr" *Politiia* 2; Sharafutdinova, Gulnaz. 2006. "When Do Elites Compete? The Determinants of Political Competition in Russian Regions." *Comparative Politics* 38.3; Ivanov, Vitaly. 2013. *Glava Sub'ekta Rossiskoi Federatsii: Politicheskaya I Yuridecheskaya Istoriya Instituta*. Moscow: Praxis.

¹⁵This observation was confirmed for us by an interview with Oleg Chirkunov, former governor of Perm Krai (ICSID interview with Oleg Chirkunov. Higher School of Economics, 16 May 2012).

¹⁶Reuter and Robertson.

¹⁷One exception is Rochlitz et al., who suggest that the absence of performance-based appointments in Russia may be due to the fact that, in contrast to China, there is little turnover in the upper echelons of the Russian elite. Without opportunities for upward mobility, career concerns do less to shape behavior, they argue. This argument is persuasive and it likely helps explain some of the divergence between China and Russia. But the lack of promotion opportunities does not explain why economic performance would not be used as a criterion for determining reappointment and dismissal. In the absence of promotion opportunities, officials should still want to keep their jobs. Moreover, if the absence of promotion opportunities were to dampen effort, then it should do so for all types of effort, not just within the realm of economic performance. And yet there is ample evidence that political performance is rewarded in Russia.

¹⁸Dixit, Avinash. 2009. "Democracy, Autocracy, and Bureaucracy." Working Paper. Princeton University.

¹⁹Mueller, H. 2009. "Patronage or Meritocracy: Political Institutions and Bureaucratic Efficiency." Working Paper. Institut d'Anàlisi Econòmica, CSIC.

²⁰Geddes, Barbara. 1994. *Politician's Dilemma: Building State Capacity in Latin America*. University of California Press.

²¹Fiorina, Morris. 1981. "Some Problems in Studying the Effects of Resource Allocation in Congressional Elections." *American Journal of Political Science* 25.3; van der Brug, Wouter, Cees van der Eijk, and Mark Franklin. 2007. *The Economy and the Vote: Economic Conditions and Elections in Fifteen Countries* New York: Cambridge; Lewis-Beck, Michael and Mary Stegmaier. 2007. "Economic Models of Voting" in Dalton, Russell and Hans-Dieter Klingemann, eds., *The Oxford Handbook of Political Behavior*.

²²Weaver, R. Kent. 1986. "The Politics of Blame Avoidance" *Journal of Public Policy*. 6.4.

²³Miller, Michael. 2015 “Elections, Information, and Policy Responsiveness in Autocratic Regimes.” *Comparative Political Studies* 48.6.

²⁴Magaloni; Simpser, Alberto. 2013. *Why Governments and Parties Manipulate Elections* New York: Cambridge.

²⁵Magaloni; Levitsky, Steven and Lucan Way. 2010. *Competitive Authoritarianism: Hybrid Regimes after the Cold War* New York: Cambridge.

²⁶Magaloni; Akhmedov, Akhmed, and Ekaterina Zhuravskaya. 2004. “Opportunistic political cycles: test in a young democracy setting.” *The Quarterly Journal of Economics* 119.4; Pepinsky, Thomas. 2007. “Autocracy, Elections, and Fiscal Policy: Evidence from Malaysia” *Studies in Comparative International Development* 42.1.

²⁷Subnational officials are especially important players in this regard because they are better informed about local conditions, and thus more adept at maintaining local patron-client networks.

²⁸Frye, Timothy, Ora John Reuter, and David Szakonyi. 2014. “Political Machines at Work: Voter Mobilization and Electoral Subversion in the Workplace.” *World Politics*. 66.2.

²⁹Our argument should not be taken to suggest that political machines do not exist in closed autocracies. Patron-client networks suffuse these systems as well. Our argument is simply that, in closed systems, economic policy makers need not be called upon to participate in the task of mobilizing votes.

³⁰Rochlitz et al., p. 27.

³¹Autocrats prefer, *ceteris paribus*, that their economies grow because it increases their own income and contributes to long-term regime stability; Olson, Mancur. 1993. “Dictatorship, Democracy, and Development.” *American Political Science Review*. 87.3. Of course, autocrats in closed autocracies can, and often do, engage in opportunistic behavior that harms long-term economic growth, such as infringing on property rights. However, this type of behavior is orthogonal to the appointment

criteria established for elite bureaucrats.

³²Additional information about the positions of these individuals is available in the data appendix.

³³In 27% of regions, all vice governors must be approved by the legislature. But in 37% of regions, the legislature approves only select vice governors (such as the first [pervyi zamestitel'] vice governor or the vice governor responsible for the budget). In the remaining 36% of regions, the governor can appoint all vice governors without legislative approval. There is no region in which the legislature has the power to remove vice governors.

³⁴Available online at http://expert.ru/ratings/table_261101/

³⁵*Kto pravit v Rossiiskoi Federatsii: Spravochnaya Various Years*. Moscow: Maximov Publications.

³⁶Xu, p.1104.

³⁷Petrov, Nikolai and Aleksei Titkov 2013. *Reiting Demokratichnosti Regionov Moscovskogo Tsentra Karnegi: 10 let v stroyu*. Moscow: Carnegie.

³⁸Petrov and Titkov make the individual components available for two aggregate periods: 2001-2005 and 2006-2010. In our data, we use the first score for the 2001–2005 period and the second score for the 2006–2011 period.

³⁹Since this measure is based on subjective ratings, it is difficult to replicate. Nonetheless, it is the only measure of regional regime type available for Russia. In its defense, the fact that several prominent studies have used it effectively to study important topics lends it some construct validity; Remington, Thomas. 2011. *The Politics of Inequality in Russia*. New York: Cambridge; McMann, Kelly. 2006. *Economic Autonomy and Democracy*. New York: Cambridge; Lankina, Tomila V., and Lullit Getachew. 2006. “A Geographic Incremental Theory of Democratization.” *World Politics* 58. The reduced index that we use here is highly correlated with the full index advocated by Petrov and Titkov ($r=0.91$) and our results are robust to

using the full index (see appendix).

⁴⁰While unlikely, it is possible that *Regime Type* could be endogenous to vice governor turnover. An instrument for contemporaneous regime type is unlikely to be found, but to guard against such endogeneity concerns we also use a lagged measure: *Regime Type in 1990s*. This measure, presented in Appendix Table C5, uses each region's *Regime Type* score from the 1991-2000 period as a temporally exogenous assessment of the competitiveness of regional politics. Results are broadly similar to those from models employing contemporaneous *Regime Type*.

⁴¹Gervasoni, Carlos. 2010. "A Rentier Theory of Subnational Regimes: Fiscal Federalism, Democracy, and Authoritarianism in the Argentine Provinces." *World Politics*, 62; Gibson, Edward. 2013. *Boundary Control: Subnational Authoritarianism in Federal Democracies*. New York: Oxford.

⁴²Sharafutdinova; McMann; Remington.

⁴³The type of elections that matter in Russia's regions has changed over the period of our sample. From 2001-2004, when Russia's governors were elected, gubernatorial and regional legislative elections were the elections most relevant for our theory. In other words, governors plausibly would have been evaluating economic vice governors on the basis of how well they did at maintaining an electoral machine that would help the governor win reelection and win pro-governor majorities in legislatures. From 2005-2012, when Russia's governors were appointed by the federal center, it was federal elections and regional legislative elections that mattered. As noted above, governors were evaluated during this period on the basis of how they did at mobilizing votes for the regime. During both periods, governors had incentives to maintain electoral machines. So while federal elections mattered more after 2005 and gubernatorial elections ceased to be relevant, the basic logic behind our hypothesis remains unchanged. In the appendix, we split the sample and examine how our results differ in the two periods. It is worth noting that even after the formal reintroduction

of gubernatorial elections in 2012, the Kremlin continues to exercise control over appointments because it retains the ability to dismiss governors and exercises de facto control over who is nominated to run in elections.

⁴⁴See Panov and Ross for a discussion that classifies Russia's regions as competitive and hegemonic authoritarian. Whether or not one thinks these terms are appropriate or useful, there is substantial variation in regime competitiveness across the regions. Panov, Petr, and Cameron Ross. 2013. "Sub-National Elections in Russia: Variations in United Russia's Domination of Regional Assemblies." *Europe-Asia Studies* 65, no. 4: 737-752.

⁴⁵ Howard, Marc Morje and Philip Roessler. 2009. "Post Cold War Political Regimes: When Do Elections Matter?," in Lindberg, Staffan, ed., *Democratization by Elections: A New Mode of Transition*. Baltimore: Johns Hopkins UP (p109). See Munck for more on the hegemonic authoritarian concept. Munck, Gerardo. 2006. "Drawing boundaries: how to craft intermediate regime categories." in Schedler, Andreas, ed., *Electoral Authoritarianism: The Dynamics of Unfree Competition*. Boulder: Lynne Rienner.

⁴⁶Levitsky and Way, p. 53.

⁴⁷As an example, in December 2005 Mikhail Men' replaced Vladislav Tikhomirov as governor of Ivanovskaya Oblast. Men' began replacing Tikhomirov's corpus of vice governors in early 2006, so the high level of vice governor turnover in 2007 was directly attributable to governor turnover. In this instance, there was a change in governor in 2005, but the turnover induced by the governor does not reveal itself in our data until 2007. Aside from technical instances such as this, there are also instances where new governors wait for some time before replacing the old governor's team.

⁴⁸In the next section, we also explore a model that interacts *Resource Extraction as Pct GRP* with regional regime type.

⁴⁹Carter, David. B., and Curtis Signorino. 2010. "Back to the future: Modeling

time dependence in binary data.” *Political Analysis*, 18.3.

⁵⁰Additional robustness checks are shown in an online appendix, Tables C1 and C2.

⁵¹For all alternative specifications discussed in this section, the conditional coefficients for our main variable of interest are statistically and substantively similar to those discussed in the main results section, unless otherwise stated.

⁵²For 74% of observations the value of this variable is either 0 or 1 (i.e., either all economic vice governors turned over or none of them did). This makes sense given that many regions have only one economic vice governor/minister serving at a given time.

⁵³Libman, Alexander. 2011. “Russian Federalism and Post-Soviet Integration: Divergence of Development Paths.” *Europe-Asia Studies* 63, no. 8: 1323-1355; Remington. In fact, Libman finds that growth is faster in both the more autocratic and the more democratic regions than it is in regimes with intermediate levels of regime competitiveness.

Appendix A: Description of Data

Tables A1 and A2 display descriptive statistics for our key variables for both of the subsets of economic vice governors we use in this paper.

Table A1: Descriptive Statistics (Narrow Subset)

Variable	Obs	Mean	Std. Dev.	Min	Max	P50
VG Turnover	1119	.24	.43	0	1	0
Governor Turnover	1119	.23	.42	0	1	0
Lagged Econ Growth	1103	1.05	.07	.77	1.6	1.05
Log GRPpc	1105	11.61	.88	8.96	14.94	11.63
Percent Russian	1119	.75	.24	.01	.97	.85
Regime Type	1109	21.25	4.75	10	33	21
Resource Extraction as Pct GRP	1110	9.49	15.67	0	78.6	1.8
naive_counter	1119	2.91	2.29	1	11	2
naive_counter2	1119	13.68	21.75	1	121	4
naive_counter3	1119	87.29	203.59	1	1331	8

Table A2: Descriptive Statistics (Broad Subset)

Variable	Obs	Mean	Std. Dev.	Min	Max	P50
VG Turnover	2111	.23	.42	0	1	0
Governor Turnover	2111	.22	.42	0	1	0
Lagged Econ Growth	2085	1.05	.07	.77	1.6	1.05
Log GRPpc	2088	11.57	.87	8.96	14.94	11.59
Percent Russian	2111	.76	.23	.01	.97	.86
Regime Type	2097	21.06	4.7	10	33	21
Resource Extraction as Pct GRP	2100	9.57	15.56	0	78.6	2.4
naive_counter	2111	3.04	2.35	1	11	2
naive_counter2	2111	14.74	22.53	1	121	4
naive_counter3	2111	95.41	210.97	1	1331	8

In Figure A1 we display the geographic distribution of our Regime Type variable across Russia in 2010. As noted in the text, higher values indicate more competitive regions.

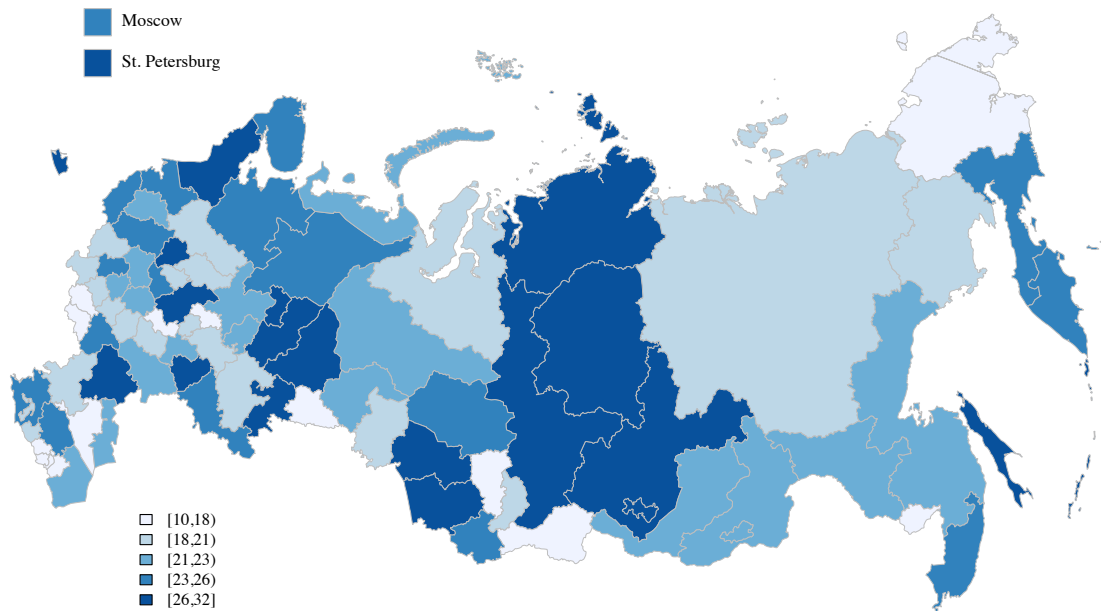


Figure A1: Regime Type (2010)

Appendix B: Additional Information Russia’s Vice Governors and Sample Construction

The formal titles of ‘vice governors’ vary across regions. They may be called “Deputy Head of Administration” “Deputy Governor”, “Vice Governor”, or if the governor also holds the title of “Government Chairman” they may be called “Vice Government Chairmen.” Russia’s ethnic republics often feature a presidential administration as well as a separate cabinet of ministers, sometimes called a government. In these cases, the Presidential administration and its staff—much like the Presidential Administration at the federal level—serves as the administrative and political support staff to the president, while the Cabinet of Ministers contains officials (often called deputy prime ministers) who hold policy portfolios and are responsible for coordinating policy-making and policy implementation. Because they are responsible for policy-making, we analyze turnover among officials in the Cabinet of Ministers (or its

equivalent) in the ethnic republics.

In most regions, vice governors are responsible for one or more policy areas and this policy area is included in their official title (for example, “vice head of the administration for economic development”). In our data there exists a vice governor whose policy portfolio corresponds exactly to “the economy” or “economic development” in 51% of region years. This does not mean that the remaining region-years do not have a vice governor with responsibility for economic policy-making; all regions have a vice governor with responsibility for economic policy. However, the Maximov publications are missing information on the policy portfolio of approximately 25% of vice governors. Moreover, because the specific names of policy-portfolios vary across regions, and policy responsibilities are aggregated in different ways, the economic policy portfolio is sometimes named differently or suppressed in a cognate policy area.

To take but one of many such examples, Vasily Yurchenko was a vice governor in Novosibirskaya Oblast from 2005-2010, during which time he was responsible for “industrial development and entrepreneurship.” While the name of this position is more specific than “economic development”, the lack of another official holding an economic development portfolio at the same time as Yurchenko leads us to believe that his policy responsibilities were likely similar to those classified as “economic development” in other regions.

To address this sparseness in our data, we adopt two strategies to expand the data frame. First, we also analyze turnover among ministers for economic development, where such data is available. Using the Maximov data, we are able to identify such a minister for fifty-eight percent of region-years. In addition, we classify the following vice gubernatorial policy portfolios as relating to economic development: budget and finance, employment, industry, entrepreneurship, and trade. By widening the net in this way, we are able to identify a vice governor or minister with responsibility for economic policy making in 94% of region years. For our main models we show results

using both this broader subset and results using the narrower subset that does not include this extra set of portfolios. The robustness checks section shows that results are qualitatively similar using several different configurations of these subsets.

In contrast to China, there is little interregional mobility among officials in Russia and few regional officials are promoted to the federal center (see Buckley et al. 2014, Rochlitz et al. 2015). Only 41 of the 842 vice governors and ministers with economic policy portfolios were promoted at the end of their term. The following positions are counted as promotions: a more prestigious post in the regional administration (e.g. as first deputy vice governor), governor, mayor of a large city, a post in the presidential administration, a post in the federal government (*pravitel'stvo*), a seat in the State Duma or Federation Council, Speaker of the Regional Legislature. Other positions might represent promotions—including promotions to the top ranks of the security service—but these and other types of promotions are not revealed in our data. For most vice governors, a vice governorship is a peak-of-career position. As we discuss in Appendix C, our results are robust when we model these 41 promotions directly (using an ordered logit model).

Appendix C: Additional Results

In this section we show additional results using alternative measures and alternative modeling decisions. Table C1 displays models identical to those in Column 6 of Table 1, but with a slight modification of the dependent variable. In Model 1, we include an economic vice governor's promotion to a higher-ranking position as an additional third category in the dependent variable, such that the dependent variable equals 0 if the vice governor/minister is fired or demoted in a given year, 1 if she or he retains office, and 2 if she or he is promoted. The model is estimated using ordered logit. In Model 2, we also count as promotions (dependent variable=2) instances when the outgoing vice governor/minister takes a leadership position in a major business. Our

results are substantively and statistically unchanged in both models.

Table C1: Ordered Logit Models with Promotions

VARIABLES	(1) Turnover	(2) Turnover
Governor Turnover	0.183*** (0.020)	0.095*** (0.020)
Lagged Econ Growth	-1.128*** (0.374)	-1.106*** (0.340)
Log GRPpc	-0.045* (0.023)	-0.017 (0.018)
Percent Russian	-0.013 (0.038)	-0.042 (0.043)
Resource Extraction as Pct GRP	0.000 (0.001)	-0.000 (0.001)
Regime Type	-0.057*** (0.021)	-0.063*** (0.019)
Regime Type X Lag Econ Gr	0.056*** (0.020)	0.060*** (0.018)
Observations	2,070	2,070
Subset	Narrow	Narrow

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In Table C2 we explore several alternative modeling approaches, building off of the main model shown in column 6 of Table 1. In Column 1 we trim our data, excluding observations with extremely high values of Lagged Economic Growth (where this variable is greater than 40%.) In Column 2 we use the full Petrov-Titkov measure including all subcomponents rather than our constructed Regime Type measure which takes only certain subcomponents. Finally, in Columns 3 and 4 we run an OLS model (using the linear probability model) and pooled logistic regression (without region random effects), respectively. We find that our results are substantively unchanged

in all cases.

Table C2: Robustness: Extreme Values and Alternative Modeling Approaches

VARIABLES	(1) Turnover	(2) Turnover	(3) Turnover	(4) Turnover
Governor Turnover	0.193*** (0.017)	0.200*** (0.017)	0.241*** (0.026)	0.197*** (0.017)
Lagged Econ Growth	-1.216*** (0.414)	-1.358*** (0.458)	-1.168*** (0.376)	-1.241*** (0.425)
Log GRPpc	-0.043** (0.022)	-0.040** (0.020)	-0.049** (0.021)	-0.045** (0.022)
Percent Russian	-0.008 (0.043)	-0.001 (0.040)	-0.006 (0.042)	-0.004 (0.039)
Resource Extraction as Pct GRP	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Regime Type	-0.057** (0.023)		-0.058** (0.023)	-0.059*** (0.023)
Regime Type X Lag Econ Gr	0.057*** (0.022)		0.057*** (0.022)	0.058*** (0.022)
Regime Type (full measure)		-0.050*** (0.019)		
Regime Type (full) X Lag Econ Gr		0.047*** (0.018)		
Observations	2,070	2,047	2,070	2,070
Subset	Broad	Broad	Broad	Broad
Number of Regions	88	87	88	88

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In Tables C3 and C4 we subset our data into the periods before the cancellation of gubernatorial elections and after, respectively. We reproduce the main models from Table 1 in each. As noted in the text, the type of elections for which governors wanted to mobilize votes changed after 2004, but the motivation to mobilize votes did not change. Our split sample models are consistent with this interpretation. As in

the main paper, the coefficient on the interaction between *Regime Type* and *Lagged Econ Growth* is positive, indicating that growth has less of an effect on turnover among economic vice governors in more competitive regions. However, because of the reduced sample size in each of the subsets, the interaction often falls short of statistical significance.

Table C3: Robustness: Subset, 2001-2004

VARIABLES	(1) Turnover	(2) Turnover	(3) Turnover	(4) Turnover	(5) Turnover	(6) Turnover
Governor Turnover	0.246*** (0.034)	0.245*** (0.034)	0.208*** (0.049)	0.206*** (0.049)	0.239*** (0.034)	0.238*** (0.035)
Lagged Econ Growth	-0.460* (0.259)	-0.452* (0.270)	-1.055 (0.989)	-0.999 (0.959)	-1.644** (0.837)	-1.628* (0.850)
Log GRPpc		-0.011 (0.030)		-0.071 (0.047)		-0.009 (0.030)
Percent Russian		-0.037 (0.080)		-0.019 (0.124)		-0.037 (0.080)
Resource Extraction as Pct GRP		0.000 (0.001)		0.001 (0.002)		-0.000 (0.001)
Regime Type	0.002 (0.003)	0.003 (0.003)	-0.050 (0.062)	-0.044 (0.060)	-0.066 (0.048)	-0.064 (0.049)
Regime Type X Lag Econ Gr			0.048 (0.057)	0.046 (0.056)	0.063 (0.044)	0.062 (0.044)
Observations	678	678	335	335	678	678
Subset	Broad	Broad	Narrow	Narrow	Broad	Broad
Number of Regions	84	84	83	83	84	84

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

One possibility is that the contemporaneous *Regime Type* measure we employ in our analyses could be endogenous to bureaucratic turnover. To probe the robustness of our results to this potential endogeneity, we replace *Regime Type* with its value from the 1990s. These results are available in Table C5. The results are consistent with those from the main paper.

Table C4: Robustness: Subset 2005-2012

VARIABLES	(1) Turnover	(2) Turnover	(3) Turnover	(4) Turnover	(5) Turnover	(6) Turnover
Governor Turnover	0.179*** (0.022)	0.177*** (0.022)	0.168*** (0.031)	0.162*** (0.030)	0.181*** (0.022)	0.180*** (0.022)
Lagged Econ Growth	-0.001 (0.198)	0.116 (0.194)	-1.184 (0.795)	-1.138 (0.867)	-0.768 (0.561)	-0.773 (0.593)
Log GRPpc		-0.069* (0.035)		-0.116*** (0.040)		-0.069* (0.035)
Percent Russian		0.023 (0.063)		0.049 (0.079)		0.020 (0.062)
Resource Extraction as Pct GRP		0.001 (0.001)		0.003* (0.002)		0.001 (0.001)
Regime Type	-0.000 (0.003)	0.002 (0.003)	-0.079* (0.042)	-0.079* (0.044)	-0.041 (0.029)	-0.044 (0.030)
Regime Type X Lag Econ Gr			0.074* (0.040)	0.077* (0.042)	0.039 (0.027)	0.044 (0.028)
Observations	1,399	1,392	761	758	1,399	1,392
Subset	Broad	Broad	Narrow	Narrow	Broad	Broad
Number of Regions	88	87	87	87	88	87

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table C5: Robustness: Regime Type from 1990s

VARIABLES	(1) Turnover	(2) Turnover	(3) Turnover	(4) Turnover	(5) Turnover	(6) Turnover
Governor Turnover	0.196*** (0.018)	0.197*** (0.017)	0.174*** (0.023)	0.172*** (0.022)	0.196*** (0.018)	0.196*** (0.017)
Lagged Econ Growth	-0.171 (0.123)	-0.103 (0.137)	-0.819* (0.462)	-0.755 (0.460)	-0.846** (0.404)	-0.821** (0.413)
Log GRPpc		-0.046** (0.021)		-0.104*** (0.023)		-0.046** (0.021)
Percent Russian		-0.010 (0.039)		0.006 (0.049)		-0.013 (0.039)
Resource Extraction as Pct GRP		0.001 (0.001)		0.003*** (0.001)		0.001 (0.001)
Regime Type (1990s)	-0.001 (0.002)	0.001 (0.002)	-0.056* (0.030)	-0.054* (0.030)	-0.042 (0.026)	-0.042* (0.025)
Regime Type ('90s) X Lag Econ Gr			0.052* (0.028)	0.053* (0.028)	0.039 (0.024)	0.041* (0.024)
Observations	2,077	2,062	1,098	1,088	2,077	2,062
Subset	Broad	Broad	Narrow	Narrow	Broad	Broad
Number of Regions	88	87	87	86	88	87

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1