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? 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. In more competitive—though still autocratic—regions, the political imperatives of maintaining a political machine that can win semi-competitive elections may lead regime leaders to abandon cadre policies that promote economic development.

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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 is 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 (Maskin, Qian, and Xu 2000; Xu 2011). 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 (Li and Zhou 2005; Landry 2008; Jia, Kudamatsu, and Seim 2013). However, in other settings, such as Russia, studies find that regional economic performance has little impact on the career prospects of regional officials (Reuter and Robertson 2012; Reisinger and Moraski 2013).

What explains such differences? More generally, why are subnational officials appointed on the basis of economic performance in some autocracies, 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 examine this question with an original dataset on turnover among among high-level economic policy bureaucrats in Russia’s 89 regions between 2001 and 2012. Utilizing 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. Using subnational data allows us to analyze a large number of analytically comparable appointment settings, while simultaneously holding constant several existing explanations for variation in appointment strategies (e.g., variation in levels of political centralization).

All of Russia’s regions are electoral authoritarian regimes, but some are more competitive
than others. More competitive regions can be classified as competitive authoritarian regimes, while 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.

We propose two possible theoretical mechanisms to account for this result. First, in competitive autocracies, autocrats must expend considerable effort on maintaining a political machine that can help the regime win elections. The imperative of maintaining such a machine compels autocrats to favor political appointment criteria over economic ones. Second, leaders in competitive authoritarian regimes are more constrained in their cadre policies by narrow interests and business groups. Appointments are often the product of bargaining with these stakeholders, and the need to maintain these bargains limits the ability of competitive authoritarian leaders to make appointments on the basis of economic performance. In hegemonic authoritarian regimes, by contrast, leaders are afforded more flexibility to make appointments on the basis of performance, should they so desire.

Our findings suggest that semi-competitive elections may have side-effects that undermine economic development. This is not to suggest 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 on economic development. In this way, our research contributes to the growing body of literature that stresses the importance of institutional differences among authoritarian regimes (Gandhi 2008; Svolik 2012; Magalon 2006). 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, administrators, 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 officials that are appointed—see for example, the voluminous literature on generational change and ‘reds’ vs ‘experts’ in the Communist Party of the Soviet Union (Hodnett 1978; Moore 1960; Friedrich and Brzezinski 1956; Rutland 1993) and the literature on the ethnic basis of appointments in Africa’s dictatorships (Arriola 2012).¹

A second strand of literature, meanwhile, focuses on how performance in office affects career advancement (Landry 2008; Li and Zhou 2005; Reuter and Robertson 2012). 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. These

¹Scholars have also devoted significant energy trying to understand the formal mechanisms that govern authoritarian appointments, particularly in communist systems (Harasymiw 1984; Manion 1985; Burns 1987).
targets are then individualized for each official through personal “performance contracts,” which attach weights to the different indicators. As a number of scholars have found, these contracts almost always contain a number of economic performance criteria, and the promotion prospects of appointees are said to depend, in part, on their ability to fulfill the terms of these contracts (Tsui and Wang 2004; Whiting 2000; Edin 2003).

Indeed, there is substantial evidence that economic performance indicators are used in the evaluation of subnational officials in China. For example, Maskin et al. (2000) 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 (Li and Zhou 2005; Sheng 2009; Landry, Lu, and Duan 2015; Bo 2002; Guo 2007). Li and Zhou (2005) show that provincial officials—governors and party secretaries—are more likely to be promoted (or retained at the same level) when GDP growth in the province is strong. Sheng (2009) finds similar results but shows that growth only affected the promotion of governors, not party secretaries. Landry et al. (2015), meanwhile, find that economic performance matters much more for promotion prospects at lower administrative levels.

Of course, economic performance is not the only thing that matters in the evaluation of China’s subnational officials. Several studies show that both political loyalty and economic performance matter (Landry 2008; Jia, Kudamatsu and Seim 2013). So while economic performance is not the only factor that matters, with few exceptions, most of the literature considers economic performance to be at least one of the factors that determine career advancement in the Chinese governmental hierarchy.

To what extent is this practice of rewarding subnational officials for economic performance unique to China? Unfortunately, systematic studies of appointment criteria in other

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2Shih et al. (2012) 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.
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 (Armstrong 1959; Rigby and Harasymiw 1980; Willerton 1992). While not discounting the important role of political loyalty, others argued that effectiveness in meeting development and planning goals was also important (Hough 1969). And indeed, several quantitative analyses have shown that both political connections and economic development did, under certain conditions, matter (Reisinger and Willerton 1988; Markevich and Zhuravskaya 2011).

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 (2012) 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). Qualitative studies come to similar conclusions, emphasizing political connections with top leaders and successful vote mobilization as the key drivers of career success among governors (e.g., Turovsky 2009; Sharafutdinova 2010; Ivanov 2014). Unlike

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3Markevich and Zhuravskaya (2011) find that regional economic performance had a positive effect on career mobility among regional officials in those policy areas where planning authority was decentralized. This was always the case in agricultural sector, but was only the case in the industrial sector during the Sovnarkhoz reforms (1957-64).

4Reisinger and Moraski (2013) come to similar conclusions, finding that economic growth has no impact on gubernatorial reappointment, while mobilizing votes for the president and/or ruling party has a strong positive impact. In a comparative study of appointments in China and Russia, Rochlitz et al. (2015) find that governors from regions with well-performing economies are more likely to be promoted, but the same is not true in Russia.
in China, regional officials in most Russian regions do not sign performance contracts. 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 these performance criteria are actually utilized when making appointment decisions.

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. Rather most studies focus on identifying the appointment criteria that are used in a given country. This is understandable given the significant amount of data—not to mention multi-region expertise—that would be required to mount a successful cross-national study.

To be sure, several studies of economic growth in China and Russia touch on related issues, but most of these works offer accounts that simply negate the substantive issue under investigation here. For example, one prominent explanation for the divergent trajectories of post-transition economic development in China and Russia holds that China’s higher degree of centralization allowed central planners to set performance targets and make appointments on that basis (Blanchard and Shleifer 2001). In 1990s-era Russia, meanwhile, the inability of the federal center to control powerful regional elites limited the ability of the central state to set and enforce performance targets. If the state does not have effective control over appointments, then question of why performance based appointments are not used becomes moot. But, when central authorities do have the power to hire and fire officials, the question remains. Indeed, after Vladimir Putin’s recentralization reforms in the mid 2000s, the federal government regained the ability to appoint regional governors. So the question of why performance based appointments are rare in Russia remains unanswered.

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5 This 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).

6 Direct elections for regional governor were cancelled in 2004. They were reinstated in 2012, but by that
Other works focus on the opposite problem: too much centralization. A number of scholars have argued that the key to China’s rapid economic development is the fact that control over economic policy making is delegated to regional officials, who implement the same tasks—sometimes called an “M-form” hierarchy (Maskin et al. 2000; Xu 2011). This system is contrasted with the centralized planning system that prevailed in the Soviet industrial sector, where branch ministries were responsible for economic decision making across the country—sometimes called a “U-form” hierarchy. This may well help explain divergence between the Soviet Union and China, but it renders the question posed here irrelevant: if regional officials responsible for economic policy making do not exist, then performance based appointments make little sense. But gone are the days of Soviet-style, U-form branch ministries. Russia’s federal structure now resembles an M-form hierarchy—just as China’s does—and Russia and China have similar levels of fiscal decentralization (see Rochlitz et al. 2015).

Finally, some have suggested that the absence of performance-based appointments in Russia may be due to the fact that there is little turnover in the upper echelons of the Russian elite (Rochlitz et al. 2015). This is in contrast to China where term limits and norms of turnover are respected. Without opportunities for upward mobility, career concerns do less to shape behavior. 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 economic. And yet there is ample evidence that political performance is rewarded in Russia.

time the Kremlin’s control over electoral processes had grown significantly. Thus, even after the reintroduction of gubernatorial elections the Kremlin continues to exercise control over appointments through its de facto control of nominations, usually via its control over the ruling party, United Russia.
In sum, the question of why economic performance criteria are applied in some appointment settings, but not others, remains open. The next section examines how authoritarian regime type might affect this decision.

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 that are 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 (2009) 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. 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 (2009) 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. Geddes (1994) also argues that electoral competition can, under certain circumstances, lead to administrative reform. 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 them on a cronyistic basis. 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 (Kramer 1971; Fiorina 1981). 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 (Weaver 1987).

However, accountability mechanisms—e.g., elections, parties, civil society, the media, and the like—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 (Miller 2015). Thus, one possibility is that performance-based appointments will be more prevalent in competitive authoritarian regimes than in more closed regimes.

And yet, there are also good reasons to think that the specific nature of authoritarian elections might undermine the incentives of incumbents to pursue to performance-based appointment strategies. For one thing, because autocrats in competitive authoritarian regimes have to expend great effort engineering election results and subnational officials are key players in this, they may prioritize political criteria over economic ones.

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 (Magaloni 2006; Simpser 2012). But securing comfortable vote margins is no easy task. Elections and voters have to 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 (see Levitsky and Way 2010). 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 economic and fiscal policy. Officials must calibrate electoral spending cycles, target social spending to reward supporters and punish opponents, and calibrate vote buying campaigns (e.g., Magaloni 2006; Akhmedov and Zhuravskaya 2004; Pepinsky 2007). Furthermore, officials in competitive authoritarian regimes must cultivate relations with powerful elites in order to enlist the latter’s support in managing voters. Prominent politicians, opposition figures, traditional leaders, local strongmen, landlords, oligarchs, prominent businessmen and other such opinion leaders may be bought off with access to rents and spoils.

7Subnational 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.
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 (2014) find that regional officials use various carrots and sticks to induce employers to turn out their employees to vote.

In sum, then, winning elections in competitive authoritarian regimes requires effectively managing a political machine. This machine must be constantly maintained, even outside of election cycles. Subnational officials, including those with responsibility for managing the budget and economic policy, must exert effort to manage relations with elites, co-opt civil society, calibrate electoral subversion, respond to particularistic pressures, and maintain clientelistic networks.

In more closed autocracies, by contrast, opposition is circumscribed and subject to systematic repression. This means that that 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 with which to challenge the regime. Thus, subnational officials are less likely to be charged with overseeing the various manifestations of machine politics described above.

So how might 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 political machines may be assigned a higher priority than economic development. This is similar to the view espoused by Rochlitz et al. (2015) 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.

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8To be sure, physical repression requires political calibration, even in closed autocracies. But that is a task typically handled by the security services, not subnational officials, and certainly not by those responsible for economic policymaking.
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” (p. 27). It is possible that the political imperatives of maintaining a competitive authoritarian regime may lead regime leaders to eschew a cadre policy that would help promote economic development. Subnational officials, including those responsible for making economic policy, may be judged on the basis of political criteria, not economic ones. 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.

In fact, the problem could go even deeper. The political machines that undergird competitive authoritarian regimes are oiled by distortionary economic policies. Electoral spending cycles, patronage spending, rent-seeking, and prebendalism are bad for the economy, but they are a necessary evil for regime leaders. Hence, making good economic policy is not only a lower priority, but may even be politically dangerous.

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 positively correlated. 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 may often win out.

One may be tempted to see parallels between this argument and Egorov and Sonin’s (2011) model of the loyalty-competence tradeoff in authoritarian appointments. According to Egorov and Sonin, dictators prefer loyal subordinates over competent ones because the

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9Autocrats prefer, ceteris paribus, that their economies grow because it increases their own income and contributes to long-term regime stability (Olson 1993). 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.
latter pose a graver threat of rebellion. They predict that a dictator’s preference for loyal
subordinates goes up when dictators are “weak relative to potential challengers” (p. 915).
When weak, the dictator is more fearful of elite conspiracy and therefore seeks to elimi-
nate potential challengers. The application of this proposition to the present setting is not
straightforward, however. One might argue that competitive authoritarian leaders are in a
weaker position than dictators in closed autocracies because political competition and op-
portunities for anti-regime collective action are greater in the former (Lindberg 2006, 2009).
At the same time, some have argued that the holding of elections stabilizes authoritarian
rule (Lust-Okar 2009; Gandhi and Przeworski 2007).\textsuperscript{10} However, whether semi-competitive
elections stabilize or undermine these regimes, it seems clear that these regimes would be
vulnerable to opposition challenge without concerted management of the electoral process.
Therefore, if one were inclined to reinterpret multi-party elections as a latent source of weak-
ness that raises the political stakes and increases the need for ‘loyalty-based’ appointments,
then the above-stated argument would be consistent with the Egorov and Sonin model.
However, it is not clear that the tradeoff between competence and loyalty is mirrored in the
tradeoff between appointments based on economic performance and appointments based on
political performance. Competency in running a political machine could be just as threat-
ening to a dictator as economic competency, perhaps even more so. Therefore, while shares
features in common, the Egorov and Sonin model is not a close analogue to the argument
presented above.

This line of argument also shares features in common with the state-led development
literature, which emphasizes how the insulation of bureaucrats from particularistic electoral
pressures and the associated demands for patronage can give bureaucrats the opportunity
to pursue pro-growth politics (e.g., Haggard 1990; Wade 1990). This explanation has been
used to explain the economic miracle of the Asian Tigers under authoritarian rule. How-

\textsuperscript{10} Others find no relationship or evidence that elections both weaken and strengthen these regimes (e.g.,
Brownlee 2009; Pop-Eleches and Robertson 2015).
ever, the argument presented above differs in its mechanisms. According to the mainstream state-led development perspective, particularistic pressures have two deleterious effects on economic development. First, demands for immediate consumption drive up wages and deter investment. Second, they undermine the quality of the street-level bureaucracy, where jobs become political currency. This research, by contrast, is more narrowly concerned with appointments, so the first does not apply. Furthermore, the focus here is on high-level officials and the factors that lead competitive authoritarian leaders to eschew performance-based appointments for top officials are different from the factors that are said to increase the prevalence of patronage among the street-level bureaucracy (i.e., popular demands for patronage jobs).

However, this insulation from particularistic pressures may still be relevant at the elite level. Competitive authoritarian regimes allow multiple interests to exist, organize, and vie for influence over public policy. Limits are placed on competition among these groups, but special interests, such as business, that are interested in influencing public policy can do so by ensuring that like-minded bureaucrats are installed in positions of power. To the extent that these appointments are the product of compromise with various special interests, competitive authoritarian leaders will find it costly to re-coordinate stakeholders around a new compromise figure in the face of an economic downturn. In other words, there are constraints on competitive authoritarian leaders that may prevent them from exercising their own discretion to fire a poor-performing bureaucrat. By contrast, autocrats in more closed regimes are less constrained and can exercise their discretion to fire a poor-performing bureaucrat.

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11 This assumes that these narrow interests extract benefits from government that are sufficient to outweigh their own dissatisfaction with an economic downturn.
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 utilizing 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 sub-national 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.’

Vice governors are appointed by the governor in all regions, with regional legislatures playing a limited role in confirming these appointments. Furthermore, United Russia

\[12\] The formal titles of these '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.

\[13\] In 27% of regions, all vice governors must be approved by the legislature. But in 37% of regions, the
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 interviews with regional governors and vice governors suggest 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. 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 2 or 3 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

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(UR) 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.

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. 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. 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 the 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

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15 *Kto pravit v Rossisskoi Federatsii: Spravochnaya Various Years. Moscow: Maximov Publications*
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, adopt two strategies to expand our data frame. First, we also analyze turnover among ministers for economic development, where such data is available.\textsuperscript{16} 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 sections shows that results are qualitatively similar using several different configurations of these subsets.

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 \textit{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. 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.\textsuperscript{17} For most vice governors, a vice

\textsuperscript{16}Using the Maximov data, we are able to identify such a minister for fifty-eight percent of region-years.

\textsuperscript{17}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 (\textit{pravitel’stvo}), a seat in the State Duma or Federation
governorship is a peak-of-career position. As we discuss in the appendix, our results are robust when we model these 41 promotions directly (using an ordered logit model).

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 in 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 fast growing regions to help burnish their credentials (Xu 2011, p. 1104). In the Russian regions, 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 Foundation Moscow (Petrov and Titkov 2013). 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

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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.

19
in this paper, we separate 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. These individual scores are then summed to create a *Regime Type* score, ranging in the data from 11 to 33. See Figure A1 in the Appendix for a map showing the spatial distribution of this variable as of 2010.

In recent years, scholars of comparative politics have devoted increasing attention to variation in subnational regime type (e.g., Gervasoni 2010; Gibson 2013). Russia is ripe for such analyses, as its regions display considerable variation in levels of competitiveness (Sharafutdinova 2006; McMann 2006; Remington 2011). All of Russia’s regions are electoral authoritarian regimes, but there is significant variation in their level of competitiveness. 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. Howard and Roessler (2009) 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 (109).” Russia’s competitive authoritarian regimes are more open, but these regimes are still autocratic because the in-

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19Since 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 (c.f. Remington 2011; McMann 2006; Lankina and Getachew 2006) 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)

20See Munck (2006) for more on the hegemonic authoritarian concept.
cumbent uses various illiberal means "to create an uneven playing field between government and opposition" (Levitsky and Way 2002, p. 53).\textsuperscript{21}

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 \textit{Lagged Econ Growth}.

\textbf{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 composition of their cabinets 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. \textit{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.\textsuperscript{22} Results are unchanged if we use only the first year after a change of governor.

\textsuperscript{21}See Panov and Ross (2013) 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.

\textsuperscript{22}As 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 do not feel sufficiently sure of themselves to immediately replace the old governor’s team of officials and therefore wait for some time before installing their own officials.
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. 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 (2010) suggest including a linear time variable \( tenure_{it} \) as well as its quadratic \( tenure_{it}^2 \) and cubic \( tenure_{it}^3 \) terms.

\[ \text{23In the next section, we also explore a model that interacts Resource Extraction as Pct GRP with regional regime type} \]
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.

We estimate the following regression:

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

where \(\alpha_r\) is a set of region-level random effects (i.e., varying intercepts); \(\mathbf{X}_{rt}\) is a matrix of region-year control variables including Log GRPpc and Percent Russian; \(\tau\) is a vector of year dummy variables, and \(\epsilon_{it}\) 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

\[24\] To obtain average marginal effects, the marginal effect of a variable is first computed for each observation in the sample. The average of those computed marginal effects is the average marginal effect for a variable. Another approach to calculating marginal effects is to calculate the marginal effect for an “average case.” Usually this means calculating a variable’s marginal effect for the hypothetical case when all other variables are held at central values. Recent work in political methodology has argued for displaying substantive results as AMEs, because AMEs more closely approximate the goal obtaining “estimates of the average effect in the population.” (Hammer and Kalkan 2012).
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 that heterogeneity it is first worth noting some of the results on the control 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 $\log \text{GRPpc}$, but the other control variables have no effect on rates of turnover among economic vice governors. Regime Type also has no effect.

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
### Table 1: Main Results

<table>
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<th>(5)</th>
<th>(6)</th>
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<td>-0.013**</td>
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<td>-0.043**</td>
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<td>(0.023)</td>
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</table>

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. The narrow subset includes vice governors with policy portfolios that correspond to “the economy” or “economic development” and ministers for economic development. The broad subset includes these individuals as well as vice governors with policy portfolios related to budget and finance, employment, industry, entrepreneurship, and trade.

A 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 ones. In the broad subset of data, the probability of economic vice turnover in hegemonic authoritarian regimes (where Regime Type equals 15, the 10th percentile in the data) when economic growth is -6% (the 10th percentile in the data) is 23%. 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 give year is already low, this repre-
sents a significant effect in hegemonic authoritarian regimes. In those 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 among economic vice governors.

![Figure 1: Marginal Effect of Econ Growth on VG Turnover, Conditional on Regime Type](image)

6 Robustness

In Table 2 we explore several alternative specifications. 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. Additional robustness checks are shown in an online appendix, Tables B1 and B2. In Model 26 For 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,
2, we drop the entire North Caucasus region from our analysis. Political dynamics in these regions are very different from in the rest of Russia and political instability in the region makes growth rates volatile. With this robustness check, we seek to make sure that our results are robust to excluding this atypical region. They are. Model 3 drops another set of atypical regions from the analysis–autonomous okrugs. These regions are typically quite small in terms of population and have economies that are intimately 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 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.

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unless otherwise stated
Table 2: Robustness Checks

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<th>(4) Turnover</th>
<th>(5) Turnover</th>
<th>(6) Turnover</th>
<th>(7) Turnover</th>
<th>(8) Turnover</th>
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<td>0.191***</td>
<td>0.192***</td>
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<td>-0.011***</td>
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<td>(0.039)</td>
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<tr>
<td>Regime Type X Lag Econ Gr</td>
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<td>0.001**</td>
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<td>0.001**</td>
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Observations: 2,054 1,914 1,952 2,070 872 2,082 1,695 1,628 558
Subset: Broad Broad Broad Broad Broad Mod Broad Mod Broad Mod Ministers
Number of Regions: 87 80 80 88 88 88 88 87 83

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

Coefficients shown are average marginal effects. Year FE and tenure cubic polynomial not shown. All models contain modifications of the results from Model 6 in Table 1. Model 1 drops Ingushetia from the analysis, Model 2 drops all republics in the North Caucasus, Model 3 drops all autonomous okrugs. Model 4 adds an interaction between Regime Type and Lagged Economic Growth. Model 5 uses an alternative, continuous dependent variable, the share of all economic vice governors/ministers who turn over in a given year. Models 6–9 are alternative subsets.
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.\footnote{For 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.} 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, and they are.

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 a political 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 a political 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 a political 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 does 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 restrain 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 (Libman 2011; Remington 2011). Future research should do more to establish, in a comparative context, the impact of performance-based appointments on economic growth.

---

28 In fact, Libman (2011) 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.
References

Armstrong 1959

Arriola 2012


Brownlee 2009

Burns 1987


Edin 2003


Friedrich and Brzezinski 1956


Gandhi and Przeworski 2007

Gandhi and Vreeland


Jia, Kudamatsu and Seim 2013


Landry, Lu, and Duan 2015


Levitsky and Way 2010


Lindberg 2006, 2009
Lust-Okar 2009

Manion 1985

Markevich and Zhuravskaya 2011


Miller 2015


Pepinsky 2007


Pop-Eleches and Robertson 2015


Rochlitz et al. 2015

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Sheng 2009


Simpser 2012


Tsui and Wang 2004

Turovsky 2009


Whiting 2000


Xu 2011

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>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>P50</th>
</tr>
</thead>
<tbody>
<tr>
<td>VG Turnover</td>
<td>1119</td>
<td>.24</td>
<td>.43</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Governor Turnover</td>
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<td>.42</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Lagged Econ Growth</td>
<td>1103</td>
<td>105.09</td>
<td>7.01</td>
<td>77.2</td>
<td>160.4</td>
<td>105.3</td>
</tr>
<tr>
<td>Log GRPpc</td>
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<td>.88</td>
<td>8.96</td>
<td>14.94</td>
<td>11.63</td>
</tr>
<tr>
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<td>.24</td>
<td>.01</td>
<td>.97</td>
<td>.85</td>
</tr>
<tr>
<td>Regime Type</td>
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<td>21.25</td>
<td>4.75</td>
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<td>33</td>
<td>21</td>
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<tr>
<td>Resource Extraction as Pct GRP</td>
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<td>1.8</td>
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Table A2: Descriptive Statistics (Broad Subset)

<table>
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<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>P50</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0</td>
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<td>0</td>
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<tr>
<td>Governor Turnover</td>
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<td>.42</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Lagged Econ Growth</td>
<td>1639</td>
<td>105.2</td>
<td>6.99</td>
<td>77.2</td>
<td>160.4</td>
<td>105.4</td>
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<td>Log GRPpc</td>
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<td>11.6</td>
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<td>Percent Russian</td>
<td>1659</td>
<td>.76</td>
<td>.23</td>
<td>.01</td>
<td>.97</td>
<td>.86</td>
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<tr>
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<td>20.98</td>
<td>4.67</td>
<td>10</td>
<td>33</td>
<td>21</td>
</tr>
<tr>
<td>Resource Extraction as Pct GRP</td>
<td>1650</td>
<td>9.24</td>
<td>15.36</td>
<td>0</td>
<td>78.6</td>
<td>1.9</td>
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<td>2.87</td>
<td>2.23</td>
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In Figure A1 we display the geographic distribution of our Regime Type variable across Russia in 2010.

B1 (intended for online publication)
Appendix B: Additional Results

In this section we show additional results using alternative measures and alternative modeling decisions. Table B1 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 s/he retrains office, and 2 if s/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.
In Table B2 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 B2:** Robustness: Extreme Values and Alternative Modeling Approaches

<table>
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<tr>
<th>VARIABLES</th>
<th>(1) Turnover</th>
<th>(2) Turnover</th>
<th>(3) Turnover</th>
<th>(4) Turnover</th>
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<td>0.206***</td>
<td>0.235***</td>
<td>0.201***</td>
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<td></td>
<td>(0.020)</td>
<td>(0.020)</td>
<td>(0.027)</td>
<td>(0.019)</td>
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<tr>
<td>Lagged Econ Growth</td>
<td>-0.011**</td>
<td>-0.016***</td>
<td>-0.012***</td>
<td>-0.013***</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.006)</td>
<td>(0.004)</td>
<td>(0.005)</td>
</tr>
<tr>
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<td>-0.058**</td>
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<tr>
<td></td>
<td>(0.022)</td>
<td>(0.021)</td>
<td>(0.022)</td>
<td>(0.023)</td>
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<td></td>
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<td>(0.044)</td>
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<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.001)</td>
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<tr>
<td>Regime Type</td>
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<tr>
<td>Regime Type X Lag Econ Gr</td>
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<td>0.001**</td>
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<tr>
<td></td>
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<td>(0.000)</td>
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<tr>
<td>Regime Type (full measure)</td>
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<td></td>
<td>-0.062***</td>
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</tr>
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<td></td>
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<td>(0.023)</td>
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<tr>
<td>Regime Type (full) X Lag Econ Gr</td>
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Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1