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How are national-subnational relations managed in a non-democracy? The growing literature on authoritarianism and hybrid regimes has paid increasing attention to the function of institutional frameworks within these regimes, including the role of institutions central to democratic governance, such as elections and legislatures. Tasks sometimes grouped under the heading of "elite management"--such as maintaining officials' loyalty to the regime and providing them with career paths--have received substantial analysis as well. Surprisingly, however, few works examine how regimes pursue such goals across different levels of government, a critical task whether the system is formally federal or not. Russia offers a rich site for examining this question. The relationship between the national regime (a.k.a., the Kremlin) and subnational politics was central from the beginning of post-Soviet Russia, and it was a major component in Russian President Vladimir Putin's construction of a stronger "vertical (dimension) of power" in the early 2000s.

Moreover, changes in how Russia's regional leaders are chosen provide something of a natural experiment. From 2000-2004, governors were chosen in elections that were competitive, flawed, but imperfectly influenced by the Kremlin (Moraski and Reisinger 2007). In the aftermath of the Beslan tragedy of September 2004,[1] Putin sought and received changes in federal law that ended gubernatorial elections. Beginning in 2005, Russia's federal president had de facto power to appoint and fire regional governors. Public protests against fraud in the December 2011 election for seats in the federal parliament, the State Duma, induced then-

[1]The incident, resulting in the deaths of over 340 schoolchildren and their parents and teachers, has been analyzed in numerous books and articles. See, for example, Phillips 2008; Tsagoev 2008; Gorenburg 2009; Ó Tuathail 2009.

President Dmitrii Medvedev to bring back gubernatorial elections, albeit in a manner that provides the federal leadership with substantial control over who can be on the ballot. The first round of elections occurred in October 2012. Thus, the Kremlin held direct control over who occupied the governorships for just under eight years.

What do we learn about politics between Russia's federal center and its regions from examining governors' tenures during the period of Kremlin control? The switch from elected to appointed governors certainly gave the Russian president substantially more bargaining power vis-à-vis the governors. Yet it would be a mistake to interpret the situation as entirely under the Kremlin's control. The regions' performance in the economic, social and political spheres remains crucial to the federal leadership's goals for the country. Also, the governors are important players in national politics, especially due to their role in promoting United Russia's success in national presidential and legislative elections (on this, see Reuter 2010). We use survival analysis of data from all of Russia's regions from 2005-2012 to estimate the factors influencing when a governor is replaced, including the region's size and ethnic composition, the governor's age, and aspects of the governor's administrative and political performance. We find that the Kremlin targeted its replacements on governors who could not deliver pro-Kremlin votes in federal elections. Yet this tool of political control over the regional leaderships did not prevent the weak showing of the Kremlin's party in the 2011 legislative election or the mediocre showing of Putin in the 2012 presidential election. The appointment era now looks more like a failed experiment than an inexorable tightening of authoritarian control over the country.

The Kremlin and the Regional Leaderships

From soon after Russia's independence in 1991, its constituent regions have been led politically by chief executives, usually referred to as governors.[2] Those regions designated as republics, which are named for a particular non-Russian ethnic group, can refer to their chief executive as a president, although the term governor generically covers them as well. Initially, republics had the right for their presidents to be chosen from within the region, either by the legislature or through a popular election. For the non-republics, President Yeltsin designated the executive leaders; frequently, he tapped those who had been the first secretary of the region's Communist Party branch or who were the head of the elected legislature for the region. By 1996, however, Yeltsin conceded the right for all governors to be elected by the voters of the region (Kirkow 1998; Solnick 1998). Popular election gave governors a source of legitimacy that increased their power vis-à-vis the federal center and led to a period in which many observers saw centrifugal forces as excessive, even threatening to Russia's statehood (Alexseev 1999; Stoner-Weiss 1999; Sakwa 2002; Domrin 2006). Putin made it a central goal of his first presidency to establish greater Kremlin control over the regions. Returning the selection of governors to the Russian president was a key part of his strategy.

In the 2005-2012 period, governors served as long as they maintained the confidence of the Russian president (helpful discussions of practices during this period include Turovskii 2009;

[2]The term *region* is used generically in both Russian and English to refer to any of the political units that are constituents (or subjects) of the Russian Federation. They form the first-level subnational units of Russia. Each region has one of six statuses: oblast, krai, city of federal significance, republic, autonomous okrug or autonomous oblast. A region's status is part of its official name: e.g., Tomsk Oblast or Zabaikalskii Krai. The cities of federal significance are Moscow and St. Petersburg. Each of these cities is surrounded by a separately governed oblast (Moscow Oblast and Leningrad Oblast, respectively). The republics and the autonomous regions are named after a non-Russian ethnic group - e.g. the Tatar Republic - and tend to have relatively small proportions of ethnic Russians. The "autonomous" regions are so called because each is located within a different region.

Ross 2010; Slider 2010).[3] That is, "losing the president's confidence" was an adequate reason for a governor to be dismissed prior to the end of his or her formal term. Although the president did not need to provide any reason for declining to nominate a sitting governor for a new term, the functional difference between providing no explanation and stating that one has "lost the president's confidence" is small. Under these rules, any governor could be fired at any time depending on the will of the federal president. Whether a governor left office at the end of a formal term or in the middle did not alter the political basis for that departure: a decision by the Kremlin.[4] Moreover, each additional week or month a governor remained in office also reflected a Kremlin decision, that is, the decision not to make a change.

Personnel Control and Replacement Under Non-Democratic Rule

Scholarship over the past decade has directed increasing effort to understanding the functioning of non-democracies: autocratic regimes of different types as well as regimes that are hybrids of democratic and authoritarian elements. Drawing particular attention has been the question of how formal participatory institutions such as elections, parties and parliaments help the regime's leadership maintain non-democratic control (see, e.g., Geddes 2005; Magaloni 2006; Brownlee 2007; Gandhi 2008; Gandhi and Lust-Okar 2009; Blaydes 2010). Among the important roles formal institutions can play is "elite management," restraining and rewarding political officials so that capable people are put into responsible positions and those capable people have paths for advancing. In her study of the PRI in Mexico, for example, Magaloni

[3]Those in office in January 2005 continued in office until the end of their term, when they needed a presidential nomination to be re-appointed. They also had the option of requesting an expression of confidence from President Putin prior to their term expiring. Those who sought and received it began a new four-year term immediately.

[4]Future research may wish to consider whether the means of dismissals are correlated with their timing. Turovskii (2010, 61), for example, distinguishes between "gentle" and "harsh" procedures for removing a governor.

(2006, 8) concluded that "Autocratic regimes reward with office those politicians who prove most capable in mobilizing citizens to the party's rallies, getting voters to the polls, and preventing social turmoil in their districts. The autocracy thus forces politicians to work for the benefit of the party and to have a vested interest in the survival of the regime."

The contrasting means of elite management is bureaucratic or corporate. That is, rewards--such as promotions to higher or more lucrative positions--and punishments are made without public participation by one or more officials at a higher place in the regime hierarchy. In single-party regimes, such as the Soviet Union or China, the party manages this function of "cadres policy." In the Soviet case, the rules about which level of the party controlled which job was known as the *nomenklatura* system (Harasymiw 1969; Fleron 1970; Rigby 1990; Willerton 1992), and memory of it remains for many of Russian current leaders. What has occurred over the past decade in Putin's Russia, then, is a swing from an electoral-based process for managing governors to a bureaucratic one and back to an electoral-based one.

While most recent work incorporates subnational leaders and lower officials into the analysis, they also mostly focus on those officials' role in the hierarchy of an overall national regime. The complexity of Russia's federal system challenges this way of approaching national-subnational dynamics. The extent to which elite management is centralized or "federalized" within a given regime will matter as well. The Soviet Union's *nomenklatura* system was a centralized system; it gave the Kremlin the formal right to make appointments to a range of positions within each subnational unit. The Kremlin could, at least formally, craft a nationwide policy via appointments or firings, including allowing the general secretary to build a nationwide team or network (Moses 1981, 1985; Clark 1989; Willerton and Reisinger 1991; Willerton 1992). During the 2005-2012 period, however, when the governors were brought into a bureau-

cratic form of control, officials within a governor's region were not part of bureaucratic control from the Kremlin. Even after Putin had succeeded in establishing his power vertical, he did not pursue a similar process. With significant variation across the regions, most of Russia's governors were tasked with elite management in their own region. Many sought bureaucratic control over the elites below them (ending mayoral elections, for instance), but for the most part they were not given it (Gel'man and Lankina 2008). In other words, regime-wide elite management was federalized rather than centralized.

During the 2005-2012 period, then, integrating the governors was critical to the effectiveness of the Russian political regime. By integration, we mean that 1) the governors should bend their efforts toward priorities of the national regime, including deferring to the national regime's needs when those conflict with the governor's personal priorities or ambitions, and 2) the governors holding office must be effective at regional governance. With regard to the former, Russia's national regime in comparative perspective lacks either of two sources of elite cohesion that research suggests are highly important. One is a shared ideology that can overcome short-term incentives for cadres in an organization to defect (Hanson 2010; Levitsky and Way 2010; Slater 2010). The other is the elite bond that can arise when most of its members participated in a common period of violent struggle (Levitsky and Way 2012). In addition, Levitsky and Way's (2010, 26) case studies suggest that shared ethnicity sometimes can provide sufficient bonds among key elites to undergird a durable regime. In Russia's federal system, however, ethnic cohesion among elites occurs at the level of certain regimes (the republics and autonomous okrugs) but not for the ruling elite as a whole.

Without significant non-material links binding together Russia's elite, Russia's regime relies to a comparatively greater extent on the also common practice of pursuing elite cohesion

by dispensing patronage or spoils (Geddes 2005; Magaloni 2006; Brownlee 2007; Gandhi 2008; Gandhi and Lust-Okar 2009; Blaydes 2010). A system such as this faces the problem, of course, that the pursuit of material gain on the part of the subordinates can conflict with effectiveness at policymaking and implementation. In addition, patronage-based systems encourage a subordinate, such as a governor, to build his or her own political machine at the subnational level, potentially strengthening his or her ability to resist the top level of the regime. During the roughly a decade in which gubernatorial elections were first held, the latter issue gained greater salience because of the added legitimacy given to a governor who was popularly elected. The elimination of gubernatorial elections was a reform directed precisely at removing governors' ability to resist the Kremlin's aims.

What drives the pattern of gubernatorial tenures from 2005-2012? Gubernatorial replacements, not counting those caused by an incumbent's death, occurred 10 times in 2005, 4 in 2006, 8 in 2007, 8 in 2008, 10 in 2009, 19 in 2010, 6 in 2011 and 19 in 2012 through June.[5] Although scholars have only begun to tackle this question, the Kremlin's continued reliance on national elections as a source of its legitimacy has made the electoral process a natural starting point for understanding appointments and dismissals. Turovskii (2010, 67) even suggests that thinking of appointments as elections with a restricted set of voters (i.e., the president and his inner circle) is a useful analogy. With political actors in the center controlling the governors' fates, Turovskii submits that the primary determinants of replacement are the governors' abilities to provide electoral results favorable to the Kremlin and to consolidate the regional elite. Similarly, Blaydes (2010, 58-63) finds that President Mubarak of Egypt made decisions about firing or retaining provincial leaders following the 2005 parliamentary elections based on how well or

[5]Information on the sources of all our data is in the Appendix.

poorly the opposition (the Muslim Brotherhood) performed in that region's voting, controlling for the Muslim Brotherhood's prior activeness in the region. Indeed, in the absence of any mechanisms for popular input, Turovskii (2010, 69-70) contends that neither the personal popularity of a governor nor the socioeconomic situation in a region matters much.

Sharafutdinova (2010) offers an account that resembles Turovskii's. While the appointment process, theoretically, provides the Kremlin greater control over regional executives, she doubts its effectiveness. From her perspective, the primary goals of the appointment process are "vote delivery" and "societal manageability," and it is these considerations that drive gubernatorial replacements (ibid, 682). Moreover, since governors are largely left alone as long as these two goals are met, Sharafutdinova argues that the Kremlin has missed an important opportunity to link accountability to the quality of governance.

Although electoral results and societal stability may be prevailing considerations for the Kremlin, the relative weight of these two considerations seems to have varied over time and probably varies from region to region. Turovskii (2010), for example, examines the changing frequency of gubernatorial replacements and concludes that the appointment era had, at the time he was writing, evolved in three stages: 1) inertia, when most incumbents were reappointed; 2) experimentation, when the president experimented with instilling some new blood into the regions in the form of outsiders; and, most recently, 3) replacement, as the center has become more confident in its ability to control the situation in the country. In a qualitative assessment of appointment dynamics across these three stages, Turovskii (2010, 63) draws conclusions that are broad sweeping and insightful. Among them are assertions that, early on, dismissals were largely confined to sparsely populated regions notorious for poor governance, public flogging was the exception, and generating some public effect was not a motivation for replacements.

Moreover, he contends that once the Kremlin moved out of the inertia phase and into the experimentation stage, the potential risks of change were initially offset by focusing on regions with passive populations and high public confidence in the center (ibid, 72). Turovskii's assertion that caution characterized the first two stages of the appointment process complements Sharafutdinova's (2010, 683) view that the appointment process was not solely driven by a desire to maximize power: If it had been, then Russia's most powerful regional barons would have been replaced first.

Previous studies, then, suggest that a governor and his or her allies at the regional level can influence both the president's desire to install someone else and the cost to the president for making a change. As Gel'man and Ryzhkov (2011, 453) note, "[D]espite the numerous cases of forced resignations of regional governors . . . the hierarchy of the 'power vertical' is far from an army-like chain of command, and it operates according to a different logic." Both explicit and tacit bargaining occurs between the Kremlin and the governor.[6] Understanding this bargaining requires attention not only to the formal institutional rules, which constrain the governors substantially and the president hardly at all, but also to informal power relations and other contextual constraints. Formal and informal influences do not simply coexist; they can be in tension. Chebankova (2010, 2), for instance, sees a "growing rift between the erected institutional structures [of Russian federalism] and the functioning processes taking place within them." Meanwhile, the low supply of sufficiently qualified and trustworthy replacements not only represents the kind of contextual constraint that initially tied the president's hands (Turovskii 2010, 66), but

[6]On such bargaining in the Yeltsin period, see Solnick 1996; Filippov and Shvetsova 1999; Treisman 1999; Alexseev 2001; Soderlund 2003.

that also may keep the Kremlin from being able to hold governors accountable for the quality of governance in their regions (Sharafutdinova 2010, 673).

As these comments suggest, our theoretical approach focuses on the relative power resources of different actors pertinent to a governor staying in office or being replaced. Although the research question is *when* the Russian president replaces a governor, we are assuming that presidential choices reflect a process of explicit or tacit (to them) bilateral bargaining and competition between the Kremlin and each regional governing team. If this assumption is correct, the pattern of gubernatorial change/retention ought to reflect cross-regional differences in the factors that affect decision making. We are not investigating differences among the actors in their ideologies, personalities or propensity to take a certain kind of action, as a behavioral approach would. We do not examine the impact of shared cultural norms. Although formal institutions and the rules that generate them will always shape the distribution of power resources among actors, we do not examine the influence of any one formal institution or set of institutions. Indeed, what gives rise to our research question is the set of rules governing presidential control over gubernatorial retention and appointment. These rules provide the Russian president with tremendous power vis-à-vis each governor. However, they are the same for each of the bilateral relationships between the Kremlin and a regional leader. For our purposes, then, they are not variables nor, therefore, do they constitute an explanatory factor in our approach. As we will discuss below, the factors we examine flow from thinking about the relationship of power resources and the resulting Kremlin strategy.

Why are the Governors Replaced When They Are?

While previous work provides qualitative and impressionistic accounts of the considerations driving the gubernatorial appointment process in Russia, scholars have yet to apply meth-

ods that allow them to analyze the relative effects of rival explanations. The exception is Reuter and Robertson (2012), who undertake to assess the impact of the election motive relative to factors that one might associate with quality of governance. Yet their logistic regression analysis of annual data does not allow them to consider why a governor is replaced *when* he or she is replaced, a question at the crux of the matter.

The timing and manner of the replacements varied widely. To illustrate, consider two cases. On January 22, 2010, Mintimer Shaimiev, the leader of the Republic of Tatarstan (a constituent region of the Russian Federation), announced that he would step down from the Republic's presidency at the end of his term, in March. Shaimiev had been Tatarstan's leader since before the end of the USSR, becoming the Communist Party first secretary in 1988 and then president in 1991. A few days after Shaimiev's announcement, Russian President Dmitrii Medvedev, on Shaimiev's recommendation, nominated a close Shaimiev ally to become Tatarstan's next leader. When Shaimiev stepped down, he took over a newly created post of State Advisor, which gives him wide-ranging powers. He even kept his same office in the presidential building! (For details, see Pavlov 2010.)

On October 16, 2008, President Medvedev announced that he was dismissing the governor of Amur Oblast, Nikolai Kolesov. Kolesov had been appointed Amur's governor by Putin in May 2007. Kolesov was brought in from Shaimiev's region of Tatarstan, some 4,700 miles away, in the aftermath of a corruption scandal against the previous governor of Amur. He had no experience in Amur and no supporters among the regional elite (Petrov 2008). Kolesov promised to increase economic growth, reverse the trend of out-migration and improve trade ties with neighboring China. He was unable, however, to make good on any of these intentions. Beyond his outsider status, he alienated many in Amur with his lavish lifestyle financed by the

regional budget (Ostrovskaia 2008). The redecoration of his office was said to have cost $3-5 million. A large personal dacha was constructed in protected sensitive forest area. Local politicians began lobbying the Kremlin against him, and corruption lawsuits were initiated. By the fall of 2008, Kolesov had become too much of a liability to the Kremlin. Less than a year and a half after having dispatched Kolesov to Amur, the Kremlin dismissed him.

Shaimiev's 22 years as regional leader contrasts sharply with Kolesov's 16 months. Indeed, Kolesov's term is dwarfed by the 62 months Shaimiev had governed since 2005, when the federal presidency began appointing and dismissing regional leaders, or governors. The tenures of Russia's appointed governors vary between the length of Shaimiev and the brevity of Kolesov.

Although the law gave the Russian president during 2005-2012 the authority to end a governorship at any time, whether to do so was a sensitive political question. Medvedev's decision about Moscow's mayor, Yuri Luzhkov, for example, came after months of speculation about whether it would happen. The president's decision naturally would have been influenced by numerous factors pertaining to the region, the situation in the country as a whole, the president's own political standing and, of course, the governor him- or herself. For insights into the politics of presidential control over gubernatorial power, one must examine the entire pattern in search of those factors that clearly promote or retard Kremlin action. This pattern comprises not simply whether a governor was fired or not re-appointed in a particular year. It also includes the ongoing maintenance of governors in office. Because the president could oust a governor at any time, regardless of the incumbent's stated term length, opting to keep or remove someone from office was a continuous process. Survival, or event-history, analysis is the proper technique for

examining a pattern of data having this over-time character (Box-Steffensmeier and Jones 2004; Blossfeld, Golsch and Rohwer 2007; Golub 2008; Mills 2011).

Thus, with information on the governors, the regions and the national situation, we use event-history analysis to see what factors influence the survival of a governorship. We examine the pattern of gubernatorial replacements and non-replacements, month-by-month, from 2005 through June of 2012. We then employ multivariate models incorporating factors that a) bear on the Kremlin's desire to replace the incumbent governor, b) bear on the Kremlin's political readiness to make a replacement, and c) provide important controls.

Before turning to the data analysis, we review the initial expectations we have about regional characteristics, the incumbent governor's personal characteristics, his or her political performance from the Kremlin's perspective, and his or her administrative strengths or weaknesses. The various factors in these categories ought to, all else being equal, give the Kremlin incentives for or against making a replacement.

Time. Over the seven and a half years from which we draw our data, one would expect the frequency of replacements to increase from the third quarter of 2008 on, when the global economic crisis began to harm Russia's economy. As the economic pain grew, so did social discontent. Public dissatisfaction with poorly performing governors was rising, and having a regional governing team that could maintain social stability was of growing importance. Also, the Kremlin itself needed to show that it was responding to the economic downturn. Replacing governors, therefore, had particular value.[7]

[7] The onset of the economic crisis falls too close in time to the start of the Medvedev presidency to be able to treat his tenure in office as a time-related factor. Medvedev began his presidency in early May of 2008, and only a few months later the economic downturn began. Although we derive our expectation of more frequent replacements over the last three years from the country's economic problems, Medvedev occupying the presidency might also be relevant. We cannot, though, disentangle the two.

In addition, the rise of public protests following the fraudulent federal legislative election in December 2011 could be expected to have produced more changes, as part of the overall strategy to quell the discontent, particularly with Putin's campaign for the March 2012 presidential election getting underway during the same period. At the same time, upon returning to office, President Putin likely had an interest in making his personal presence and preferences known. Given the announced return to direct elections, President Putin's reshuffling of the gubernatorial corps likely took on a greater sense of urgency, thus yielding more replacements than may have occurred otherwise.

Regional Characteristics. One would expect the Kremlin to exhibit more care in making a leadership change in the more nationally important regions, since a poorly managed change could cause greater harm than doing nothing. We will measure national importance with a region's total population.[8] The more populous regions, in other words, should see fewer gubernatorial changes.

One should also expect that the predominantly ethnically non-Russian regions will see fewer leadership changes than those with ethnically Russian populations. The former are of extra sensitivity to the Russian leadership, albeit in a different sense than are the economically vital regions. Replacing such a governor might lead to public outcry as an attack on the control of the region by that region's titular ethnicity, especially when an ethnic Russian is brought in to be the new governor. The regions with sizable non-Russian populations have the status of republics or autonomous regions. Within that subset of the regions, though, there are variations

[8]A different way of measuring regional importance to the Kremlin would stress contribution to the national economy. Regions' population sizes are highly correlated with their gross regional product (Kendall's tau-b=.62). We opt to employ population because a few resource-rich regions such as Khanti-Mansiisk rank very high in gross regional product despite their small population size. Other than their resources, there is little to suggest that such regions are of high importance to the national leadership.

in the proportion of the population that is non-Russian. We will use the percent of ethnically non-Russian residents in a region rather than categorical variables distinguishing regional statuses.

Characteristics of the Incumbent Governor. Several characteristics of the governor and his or her past experiences will be relevant. Those who came into office prior to 2005, especially those whose control of the regional machine is evidenced by strong electoral victories, owe their loyalty less exclusively to Putin and his team in the Kremlin than do those appointed later. Also, longer-serving governors should have more ways to resist a Kremlin move against them. Countering these possibilities, however, is the very fact that the Kremlin will see its own appointees as inherently more trustworthy and right-thinking. Moreover, quite a few of the governors who took office prior to 2005 actually began serving, like Shaimiev, well before then, going back to the early 1990s or earlier. The very length of their tenure means their age is high and the likelihood of stagnation is also higher. For both of these two reasons, the pre-2005 group would be more of a target of the Kremlin. Older governors should be more vulnerable to replacement because they may appear to the Kremlin as less dynamic or flexible. However, to the extent that higher age carries political experience in that region, we expect replacements to be fewer.

The Incumbent Governor's Administrative Record. As the Kremlin examines the merits of retaining or replacing a particular governor, it must give strong weight to the successful management of the region by the governor and his or her team. The president and other central leaders would like all the regions to exhibit social stability, economic growth and the absence of serious infighting among the elites (Gel'man and Ryzhenkov 2011, 454). The Kremlin's interest in replacing a governor, therefore, should rise in response to such indicators as economic decline, rising crime, or worsening health statistics. Tracking the regions' economic, social and adminis-

trative success is the goal behind the Kremlin's effort since 2007 to gather systematic data on regional performance (Reuter and Robertson 2012).

The Incumbent Governor's Political Performance. As the observers cited above have noted, the Kremlin expects more from a region's leadership than just successful governance of the region. Governors are also expected to provide effective support for the vertical of power, that is, for the nationwide strength of the Kremlin's party, United Russia, and for the regime more generally. The success of United Russia candidates in both regional and federal legislative elections is a criterion by which governors are judged. So, too, of course is the success of Kremlin-backed candidates in the presidential elections. We therefore expect that, all else being equal, governors of regions in which the Kremlin's party or candidate fares well electorally will be safer from replacement.

Patterns of Gubernatorial Survival, 2005-2012

Our dependent variable is, for each governor, the number of months until he or she is removed from office. The beginning month is January 2005 for those who were governing at the time that the new system took effect or, for those appointed subsequently, their month of appointment. We have collected data through the end of June 2012.[9] Out of the 177 governorships analyzed, the 83 governors still in office at the end of June 2012 become "right-censored" cases. This designation allows the survival analysis procedure to note that the governorships continue yet to draw information from the number of months they were in office through June 2012. We also code as right-censored three governors who died in office,[10] one governor who

[9] Although a few replacements have occurred after this date, President Medvedev signed the bill on gubernatorial elections in May 2012 and it came to effect on June 1, 2012 (see Gubernatory.ru 2012).

[10] The three governors who died in office are Mikhail Yevdokimov of Altai Krai, Viktor Shershunov of Kostroma, and Igor Yesipovsky of Irkutsk.

resigned for health reasons and died within weeks,[11] and six governors who headed regions that merged with larger regions since these governors left office for reasons exogenous to the appointment process.[12] The total number of other, not right-censored, cases is 94.[13]

In support of our point about the institutional change in 2005 not providing the Kremlin with carte blanche is the overall infrequency of gubernatorial turnover. During the seven and a half years our data cover, the average number of changes in the governor was 1.06 per region. Excluding a flurry of 16 replacements after Putin's re-election in 2012 and before the appointment-era rules ended, that average is .88, less than one per region. For a given region in a given year, the chance of a turnover was .15, about one in six. With the Kremlin holding all the formal levers and having many reasons to prod regional leaderships, one might have expected a greater frequency of replacement.

Still, 94 governors were removed over the seven and a half years, and some periods showed higher rates of change than others. Before turning to the survival analysis proper, we want to indicate these patterns. Figure 1 shows a histogram of the number of regions in each three-month period experiencing a changeover in governor. Quarters in which federal elections occurred are in green. With regard to our expectation that replacements would be relatively more frequent from the third quarter of 2008 on, we find instead that the pattern is only somewhat higher, and the variability in both periods is more striking than the difference between

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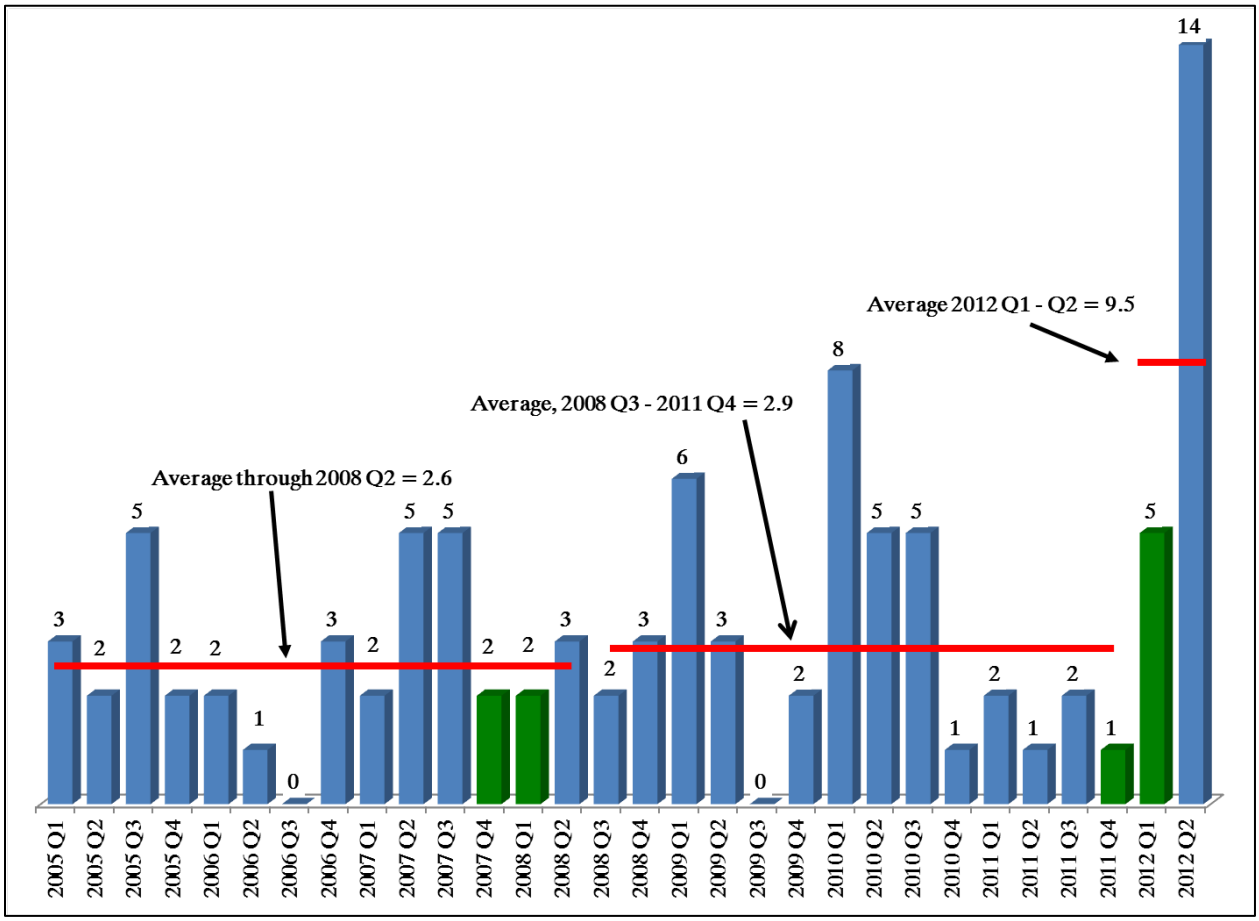
[11]Valerii Kokov of Kabardino-Balkaria.

[12]These governors are Gennady Savel'yev (Komi-Permyak), Boris Zolotarev (Evensk), Oleg Budargin, (Taimyr), Valery Maleyev (Ust-Orda), Bair Zhamsuyev (Agin-Buryat), and Oleg Kozhemyako (Koryak).

[13]Since we are interested explicitly in whether governors "survive" as governors, as opposed to as politicians within the regime, we do not right-censor governors who received promotions to higher office (cf. Reuter and Robertson 2012, 1028). Promotions have been a means of coaxing governors to give up office without disrupting elite stability, e.g., Dagestani leader Magomedov being dismissed as governor but appointed as a presidential aide in January 2013, and some have likely indicated that the Kremlin deemed the politicians as valuable to the regime but poor regional managers. In either case, they reflect a Kremlin judgment not to retain them in their posts.

them. Because replacing a governor is a sensitive political issue with numerous specific considerations that the Kremlin must weigh, we might have expected to find no discernible trend in the frequency of changeovers. Those quarters in which more than three replacements occurred suggest that change has been a particular Kremlin priority during certain periods. There were two such quarters preceding the December 2007 legislative elections. The first three quarters of 2010 saw eighteen changes, a period when Medvedev was seeking to rejuvenate the gubernatorial corps.

FIGURE 1: FREQUENCY OF GUBERNATORIAL CHANGEOVERS BY QUARTER, 2005 THROUGH MID-2012



These changes are notable in light of Sharafutdinova's (2010) concern that the appointment process has not been used to improve governance. Although, by the third quarter of 2010,

Russia's economy was rebounding strongly from the global economic recession, regional experiences varied widely (Bogetic et al. 2010). Following Putin's re-election in March 2012, 18 replacements were made as the Kremlin prepared for the return of gubernatorial elections that fall. With the exception of the 2010 and 2012 periods of heightened activity, however, the nationwide frequency of turnover seems less reflective of Kremlin goals than of reactions to the situation in individual regions.

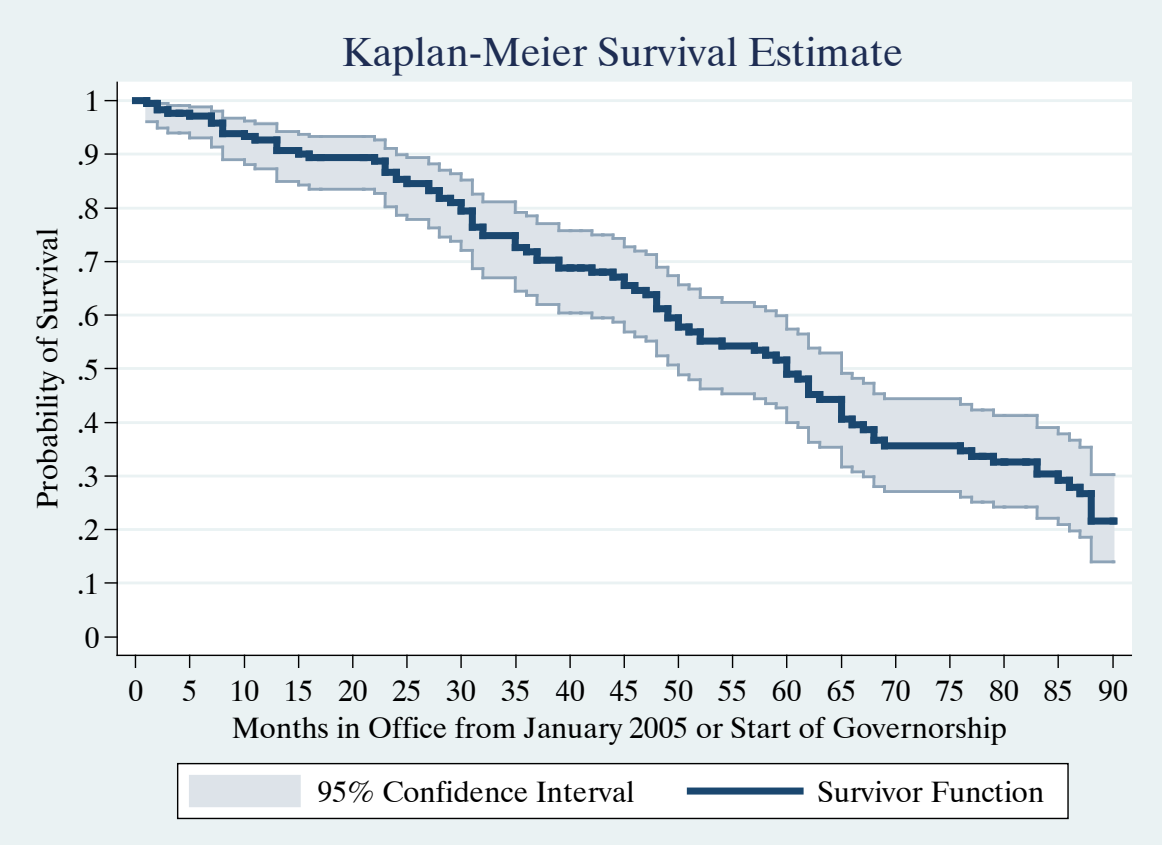
What, though, makes it likely that a given governor will continue in office or be removed during a particular month? The survival analysis techniques allow us to understand this. Figure 2 shows the slope of the survivor function, along with bands indicating the 95 per cent confidence interval. Governors remaining in office for the entire period from January 2005 through June 2012 have tenures of 90 months, the maximum "survival" length. The probability of survival is one, by definition, at the very start of a governorship. From there, that probability can only decline. Thus, survivor functions slope downward. In other words, longevity in a governorship lowers the odds of continuing in office. Those in office for less than two years have a 90 per cent or more likelihood of continuing in office. Those in office for over five years have less than a 57 per cent likelihood. For those with the maximum tenure of 90 months, the likelihood is 40 per cent. Among all governors during this period, their tenure lasts on average 42.8 months (median=42). In other words, roughly three and a half years.[14]

One can see from Figure 2 that the odds of a governor remaining in office decline (the slope of the survivor function declines) noticeably from about 31 months through 50 months,

[14]This neglects a governor's time in office prior to the appointment era. The hazard of being fired by the president only begins in 2005, and that is what we seek to explain. We do, however, use length of time in office prior to 2005 as an explanatory variable below.

then again between 60 and 68 months and from 83 months on. For those governors who had been in office in January 2005 and remained so, Medvedev takes over as Russian president in

FIGURE 2: SURVIVOR FUNCTION FOR GUBERNATORIAL TENURE, JANUARY 2005- JUNE 2012

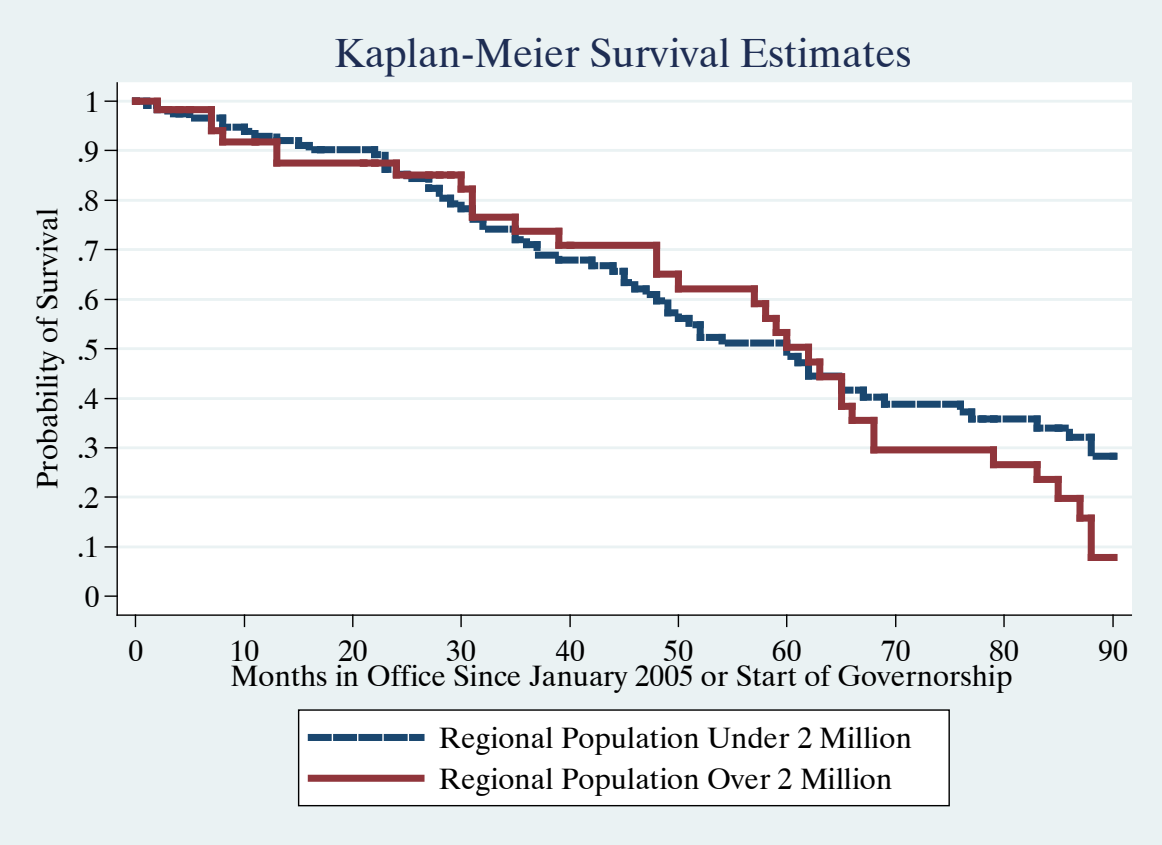


their 41st month and the economic crisis begins in their 44th month. To some extent, then, the downward slope from 31-50 months reflects an upsurge of replacements during the run-up to and the aftermath of the 2007-2008 election cycle. The fiftieth month for governors in office since the start of the appointment era is February 2009, when the governors of four regions--Orel, Pskov, and Voronezh Oblasts and the Nenets Autonomous Okrug--were replaced on the same day. For that same group of governors, their fifty eighth month in office is October 2009 and their sixty seventh is July 2010. Replacements picked up speed during this period. Fifteen governors are replaced during this period, fourteen of whom began their tenure prior to the appoint-

ment period, including such powerhouses as Shaimiev of Tatarstan and Eduard Rossel of Sverdlovsk. As noted earlier, Turovskii (2010) depicts this as a time of greater Kremlin confidence in its ability to successfully replace governors. The large number of replacements in the final months of the appointment period affect the final downward turn in slope at the right of Figure 2.

The same type of graphs can depict differences in governors' survival probability based on different values of key variables. For instance, we can check whether the data support our expectation that governors of more populous regions had higher survival rates because of the risk to the national well-being of turnover in key regions. We divided regions into regions with

FIGURE 3: SURVIVOR FUNCTION FOR GUBERNATORIAL TENURE, BY REGIONAL POPULATION

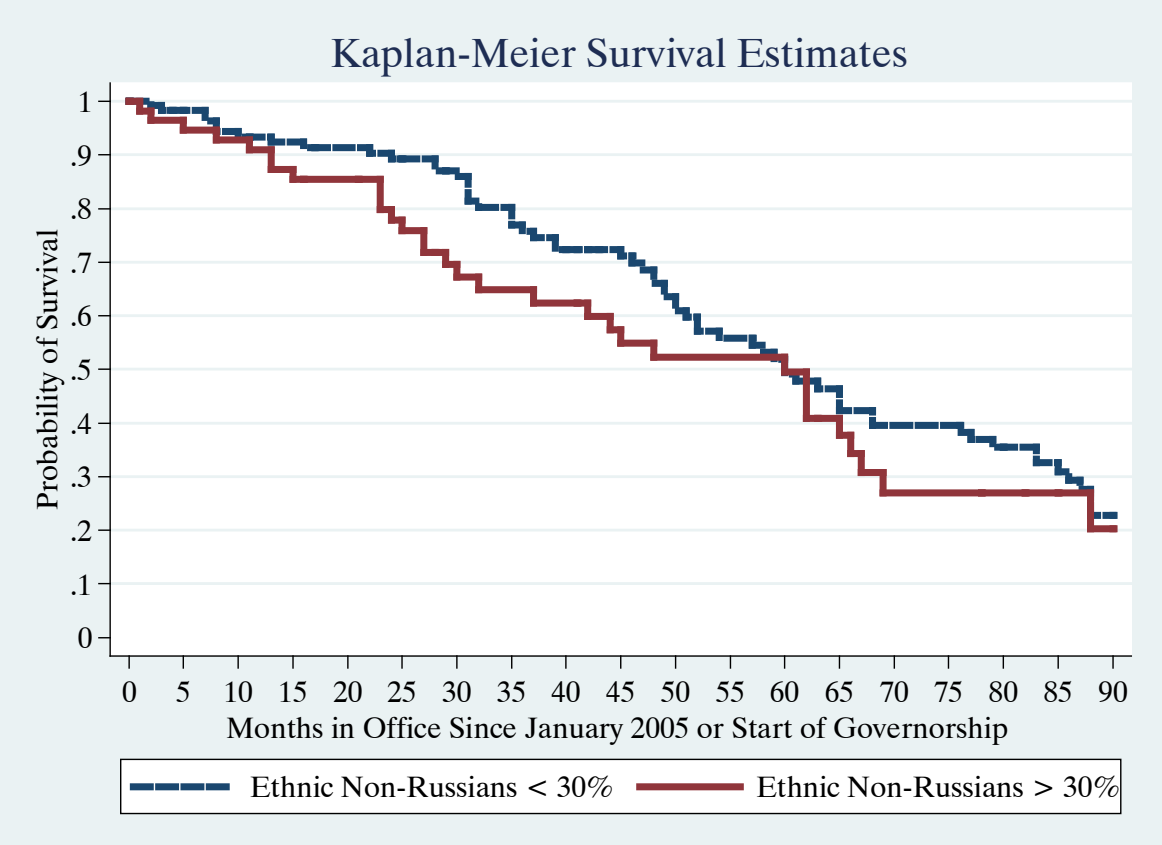


populations in 2005 of below or above two million.[15] Figure 3 shows a fairly steady decline in Russia's less populous regions relative to its more populous ones with the line capturing the latter demonstrating two sharp declines, one between the 57th and 68th months and another from the 79th through the 88th month. Governors from less populous regions were more likely to be removed during their third through fifth years in office, indicated by the blue lying below the red line for months 35-60. Of the governors from less populous regions who survive beyond their fifth year, their chances of being replaced are actually lower than for governors of more populous regions.

Do the governors in regions whose residents are predominantly non-Russian ethnically have higher rates of survival (i.e., lower turnover) because of the greater prospect of social resistance or political-machine resistance in those regions? To distinguish the two groups of regions, we use 30 per cent of the regional populace being non-Russian as the cut-off point. (All regions above 30 per cent have a constitutional status of republic or autonomous okrug.) Figure 4 shows the survivor functions for each group. The line for the predominantly Russian regions is higher at every number of months in office, at times substantially so. In these charts, a lower line indicates a lower probability of survival in office. The bivariate pattern in Figure 4 does not suggest extra resources lay in the hands of the ethnic regions' governors. They were actually replaced at a higher rate than other governors. We will examine other patterns in the data before attempting to explain this.

[15]This is the next round number above the mean of 1.62 million. Twenty-one of our 146 cases are in regions with two million or more residents.

FIGURE 4: SURVIVOR FUNCTION FOR GUBERNATORIAL TENURE, BY ETHNIC COMPOSITION OF REGION



The Kaplan-Meier estimates shown in Figures 3 and 4 illustrate how size and ethnic composition, two key dimensions on which Russia's regions vary, have a bivariate impact on the probability of survival. We turn now, though, to multivariate analysis so that we can examine the impact of size and ethnic composition along with characteristics of the governor and his or her performance. To estimate our models, we use the Cox proportional hazards technique, a partial likelihood method (Blossfeld, Golsch and Rohwer 2007, 223-246; Cleves, Gould and Guttierrez 2010, 129-228; Mills 2011, 86-113). We begin by examining the results of models that relate only to the Kremlin's interest in replacing a governor. We then introduce explanatory variables that indicate a governor's ability to resist being replaced, allowing us to contrast the relative influence of the two types of factors.

Although observers of Russian politics have reason to be interested in whether the lengths of gubernatorial appointments under Presidents Medvedev and Putin have varied, the observation of such an effect cannot be conclusive since the change in presidential leadership coincided with the onset of the global economic downturn. Thus, to the extent that one witnesses a different pattern in gubernatorial fates before and after May 2008, one cannot speak definitively about the precise cause of the variation. It may result either from different political personalities or different political incentives.

Still, it is clear that the onset of economic crisis *and* a new presidency initiated a new period in the appointment era and that the prospects for gubernatorial survival (i.e., staying in office) should differ across the two periods. An intuitive approach for capturing this variation would be to add a dichotomous variable to the multivariate analysis to distinguish governors who served after April 2008 from those who served only under Putin. The problem with such an approach, however, is that it distorts the effects of the new presidency and economic crisis on gubernatorial survival because we are interested in the *total* number of months that *all* of Russia's appointed governors have survived rather than how long a subset of governors—those in office during the Medvedev presidency and the economic crisis—have survived. A few specific examples illustrate the difference.

For the period under investigation, Governors Malakhov (from Sakhalin), Potapenko (Nenets) and Misharin (Sverdlovsk) served 31, 32 and 30 months, respectively. However, Malakhov's tenure was all during the Putin era—that is, he lasted for 31 months under Putin. Potapenko, on the other hand, survived 23 months under Putin, but lasted only nine months under Medvedev. Meanwhile, Misharin's entire tenure was only under Medvedev. A dummy variable distinguishing governors serving only under Putin from those serving under Medvedev

could capture the contextual differences between when Malakhov and Misharin were in office. However, it would fail to adequately distinguish Potapenko's experience from Misharin's since both served, partially or entirely, under Medvedev and during the economic crisis. Worse yet, the dummy variable would take on undue explanatory power. By definition, it distinguishes Putin-appointed governors who failed to survive into the Medvedev era not only from Medvedev's appointees *but also* from Putin-appointed governors whose tenures continue beyond Putin's presidency. As a result, the variable gives Putin full credit for the governors he fired but no credit for those who "survived" him. Even worse, our focus on total time in office means that the Putin-era tenures of these governors are carried over into the Medvedev era, thus inflating the survival rates of Medvedev-era governors. Returning to our examples, although Potapenko survived longer under Putin than Medvedev, the dummy would treat Potapenko as a *Medvedev* survivor with 32 months in office, crediting Medvedev not only with Potapenko's nine months during his presidency but also with the 23 months Potapenko served under Putin!

Of course, we still need to distinguish between the fate of governors under President Putin and under President Medvedev. We just wish to do so without adding a biased explanatory variable to our multivariate model. Fortunately, survival analysis permits just such an option. In a right-censored Cox proportional-hazard model, the left-hand side is the survival object and is created by a survival function that considers the length of time to the event in question with an observed event receiving the value of one and a censored observation receiving 0 (Fox 2002, 3). In our analysis, time is the total number of months in office until the governor is fired (1) or right-censored (0). The right-side of the equation of a Cox proportional hazard is the same as that of a linear model. Survival analysis also provides the option of adding a cluster function to this side of the equation. The cluster function allows one to capture a natural or artificial clus-

tering of subjects that could likely result in non-independent observations, such as mice from the same litter (Gharibvand and Liu 2009, 1). Our multivariate analysis, then, uses a cluster that separates the governors into two categories: governors who were removed under Medvedev and those removed or right-censored under Putin (before or after Medvedev). Doing so allows us to estimate the effects of the covariates that interest us while controlling for dependence among these observations.

Table 1 presents our multivariate analysis, which includes three reduced models and one full model. The three reduced models allow us to assess step-by-step the effects of regional characteristics, gubernatorial performance, and the governors' ability to resist replacement on the governors' survival rates. For each model, we present, in separate columns, the hazard ratio (exponentiated coefficient) and robust standard error for each independent variable. Estimated

TABLE 1: COX ESTIMATIONS CLUSTERING GOVERNORS BASED ON THE PRESIDENT(S) THEY SERVED

	Reduced Model 1		Reduced Model 2		Reduced Model 3		Full Model	
	Hazard Ratio	Robust S.E.	Hazard Ratio	Robust S.E.	Hazard Ratio	Robust S.E.	Hazard Ratio	Robust S.E.
Regional Characteristics								
Population (standardized)	0.956	.057					1.182***	.041
Percent Non-Russian	1.005***	.001					1.002	.003
Performance								
Crime Rate Change			1.035***	.005			1.033***	.006
Life Expectancy Change			0.962	.046			0.921+	.045
GRP per capita Change			1.017	.001			1.019***	.002
Recent Presidential P.O.E.			0.884***	.003			0.526***	.125
Ensconced								
Prior Tenure (Months)					1.005	.005	1.004	.003
Governor's Age					0.981***	.002	1.003	.023
Interaction Term								
Non-Russian*Pres. P.O.E.							1.008***	.000
N=	177		143		177		143	
Likelihood ratio test	2.11		49.92		5.39		60.11	
p=	.349		.000		.068		.000	
Score (logrank) test	2.22		76.50		5.60		89.14	
p=	.329		.000		.061		.000	

Notes:

+ and *** indicates significance at the .10, and .001 levels, respectively, for two-tailed tests.

P.O.E.=The percent of a region's eligible voters having voted for the Kremlin's candidate, either Putin or Medvedev, in the most recent presidential election. We standardized these using the mean and standard deviation of the election in which they occurred.

hazard ratios greater than one indicate an increased hazard of having the event, i.e., gubernatorial replacement (Mills 2011, 94). Estimated hazards less than one indicate a decreased hazard. Hazard ratios of one indicate no association between the covariate and hazard. The final four rows of Table 1 present two common goodness-of-fit estimates for Cox proportional hazard models, the likelihood ratio test and the score (logrank) test as well as their significance levels.

In the first reduced model, the standardized population size of a region does enhance gubernatorial survival. The hazard ratio is lower than 1.0 and is statistically significant at the .001 level. By subtracting one from the hazard ration and multiplying that by 100 (Mills 2011, 95), we learn that, holding the region's ethnic composition constant, a one-unit increase in the standardized population size results in a four percent decrease in the hazard to the governor: (.956-1)*100 = -4.4. The percentage of non-Russians in a region has a statistically significant but modest positive impact. According to the exponentiated coefficient, a one percent increase in the percentage of non-Russians results in a .4 percent increase in the hazard, hold population constant. Comparing this result to Figure 4, we see that controlling for population reduces the extent to which the governors of ethnically non-Russian regions were at risk of being removed. These two variables by themselves, however, do not provide adequate goodness-of-fit.

The second reduced model in Table 1 presents the results when only gubernatorial performance variables are included in the model. We present these equations separately, rather than in an additive fashion, due to high collinearity between the percentage of non-Russians in a region and the support for the Kremlin-backed candidate in the most recent presidential election. Since we are greatly interested in how electoral performance (i.e., producing electoral support for

the Kremlin) affects gubernatorial survival, it seems best to start with a model that directly taps that dynamic and that would cut closest to home for the Kremlin, presidential elections.[16]

To capture the governors' administrative performance, we calculate the percent change in several measures of regional standard of living for the two years preceding when the governor is dismissed, when possible. We use three indicators of quality of life change: overall crime rate, life expectancy, and gross regional product per capita (GRP).[17] The data on crime and life expectancy are not yet available beyond 2011 and for gross regional product, beyond 2010. We therefore use the most recent two-year period. Because the data are annual, we use the previous full year's number as the numerator if the governor's departure occurs prior to July 1, and the year of the departure, if it occurs in the second half of the year. We expect annual increases in the crime rate to increase the hazard of replacement while increases in life expectancy and gross regional product per capita to lower the hazard. To capture political performance, we begin by calculating the percentage the region's eligible voters (P.O.E.) which voted for the Kremlin's candidate (Putin or Medvedev). By using all eligible voters as the denominator, we incorporate the influence of different turnout levels (see the Appendix for more information). Because the elections in 2004, 2008 and 2012 were at different stages of Putin's efforts to construct a nationwide regime and differed in the average levels of P.O.E., what constituted a particularly high or low level of P.O.E. varied by election. We therefore standardized the P.O.E. scores within elections to reflect that a score of, for instance, 60% had a different meaning in 2004 than in 2008 than in 2012.

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[16] We also have data on the percentage of eligible voters in a region tallied as supporting United Russia in the most recent national legislative election preceding each governor's dismissal (or June 2011). The results mirror those when using presidential elections.

[17] For cases where data are missing for the governor's last year in office, we use data from the most recent year available during the governor's tenure.

Our second reduced model is significantly stronger than the first. It also provides support for the expectation that a governor's performance in office influences his or her survival. The hazard ration for change in crime is significant and positive; it indicates that a unit increase in the region's crime rate exposes a governor to a 3.5% higher likelihood of removal. Life expectancy increases reduce the hazard to the governor, as expected. The effect of positive economic change, however, goes against the expectation, causing a small increase in hazard in this model. The strong impact in this model comes from the measure of the governor's political performance, whether that governor's region delivered high or low levels of votes for the Kremlin candidate in the most recent presidential election. A one-unit increase in this measure raises the likelihood of removal by almost 12%.

The third reduced model estimates the ability of more ensconced governors to resist replacement. As previously discussed, governors who served prior to 2005 did so by winning a popular election, which suggests that they possessed their own basis of legitimacy (either among the population, among regional elites, or both). While age and prior tenure are certainly correlated (Pearson r = 0.512), we include age of the governor in the model because those serving in office prior to the appointment era were not necessarily so old as to justify removal on the basis of age-related factors. Including age in the model, then, allows us to differentiate more carefully among the governors and to attain a more accurate estimate of the impact of prior tenure. It turns out that prior tenure has little impact while age has a statistically significant but modest impact. The impact of age goes against the expectation that older governors would be at higher risk. In this model, each additional year of a governor's age reduces his or her risk by about 2%. This model does not, however, include the variables shown to matter in the earlier models, so these patterns may reflect that misspecification.

The final equation in Table 1 presents the full model. Simultaneously including indicators for the regional characteristics, gubernatorial performance, and the degree to which governors are ensconced in their regions produces a model with the best goodness-of-fit measures so far. Both the likelihood ratio test and the score (logrank) test attain significance at the .000 level.

Besides including all of the variables examined previously, the full model adds an interaction term: the percent of the region's residents who are ethnically non-Russian multiplied by the standardized percentage of the region's eligible voters having voted for the Kremlin candidate in the most recent presidential election. Including the interaction term and its components in the model allows us to determine whether a synergistic relationship might exist between the percentage of non-Russians from a region and the level of support from the region for Kremlin-backed presidential candidates. Remember, our expectations were that the Kremlin would move more cautiously in regions with more non-Russians and would more likely reward governors overseeing high levels of pro-Kremlin electoral support. The results of the full model appear to justify the inclusion of the interaction term. Its hazard ratio is statistically significant with governors from regions producing highly deferential election results and with higher percentages of non-Russians more likely to be removed from office. Interpreting the fixed effects for the interaction term is less straightforward than for the other variables in the analysis. With all other covariates held constant, the *product* of a one percent increase in the standardized percentage of eligible voters for the Kremlin-backed candidate and a one percent increase in the percentage of non-Russians yields just under a one-percent increase in the likelihood of gubernatorial removal. While the increase initially may seem trivial, since increases in the components of the interaction effect have a multiplicative effect on the term itself, they also have a multiplicative effect on the hazard ratio. In this case, the function for converting the interaction effect into the hazard ratio

involves multiplying the product of the two components' increases by a factor of ten [x*(.8)*(.8) = 6.4 where x=10]. So, for example, a 10 per cent increase in both components should yield a 640 per cent increase in the hazard.

In the full model, we find that the governors of larger regions are more at risk of being removed: 18% higher for each standard deviation of population size. The region's ethnic composition has only a minor impact, when controlling for the other variables in the model. The measures of the region's socioeconomic performance remain little changed from Reduced Model 2, including the unexpected result that an improved economic situation is associated with a modestly higher chance of being removed. The measure of political performance becomes even stronger than in the previous model, now indicating that a unit change in support for the Kremlin is associated with a 47% lower risk of removal. Neither of our measures of the governor's political roots in the region are statistically or substantively significant in the full model.

Our full model provides support for understanding the Kremlin's decisionmaking as based primarily on a governor's performance in office, more so than on the governor's personal situation or the region's characteristics. Moreover, the type of gubernatorial performance that has shaped the Kremlin's choices most strongly is, by a wide margin, the governor's ability to provide the Kremlin with strong voting results in federal elections. This is not to deny that some governors were removed during the 2005-12 period because the level of regional governance had sharply deteriorated. The patterns we find, though, strongly suggest that the Kremlin was focused on how well the regional leaderships were playing their assigned roles in maintaining the national-level political regime's control of the political space. We find little to suggest that, overall, the Kremlin treated governors with stronger roots in their region more carefully. Instead, the kid gloves with which Shaimiev was treated likely reflects Tatarstan's continual

delivery of high POE: high levels of voter turnout and pro-Kremlin voting in federal elections. Given the weight the Kremlin assigned to governors' political performance, the positive hazard rate for a region's population size likely reflects how important it was for the Kremlin to replace an ineffective governor of a populous region with a governor who could do a better job at harvesting the large number of potential votes there.

Creating an effective vertical of power has been at the heart of Putin's efforts to construct and maintain a political regime that can control a large, widespread and socially complex country. He did not want to or could not create a regime based solely on a single party that penetrates all the regions. United Russia provided an electoral vehicle for controlling legislatures, but it was federalized in the sense that, in many regions, it rested on machines the governor had previously established. In addition to consolidating the position of a ruling party, Putin sought to provide carrots and sticks to incentivize regional leaderships in the desired direction. Prior to 2005, the Kremlin's efforts to influence the outcomes of gubernatorial elections had proven modest (Moraski and Reisinger 2007). The decision to end the elections was likely related to this difficulty in controlling regional elites and policies when governors were elected. The switch to a bureaucratic mechanism of control over the governors certainly amplified the Kremlin's voice when it told governors what it wanted. What it wanted, our results suggest, was good election results.

Despite this, the 2011-2012 federal election cycle demonstrated that, in many regions, the leaderships were politically weak or inept or both. Medvedev's announcement that gubernatorial elections would be reinstated was seen as a concession to the social forces that had become highly disgruntled. In addition to that, however, the context for the return to elections should be understand as a sense that seven years of stronger Kremlin control over regional leaderships had

not definitively strengthened the vertical of power. A new tack was in order. How interesting, then, that the new mechanism for controlled gubernatorial elections was hardly in place before a move began to return some regions to presidential appointment, with the corresponding law signed in April, 2013. It remains unclear what trusses and struts can solidify Russia's vertical of power.

Conclusion

We asked why Russia's governors were replaced when they were and tackled this question using data on all governors of Russian regions who were in office during the period from January 2005 through June 2012. Using statistical techniques known as survival or event-history analysis, we examined the tenures of those who left the governorship during this period as well as those for whom we do not know when their tenure will end, because they remain in office at the end of the period we study. Although the Russian president changes from Putin to Medvedev and back during this period, the two politicians are closely allied and represent a single presidential administration. Thus, the patterns we find over the seven and a half years shed light on the Kremlin's strategies and its relations with regional leaders.

When governors were replaced during the 2005-2012 appointment period was influenced by a combination of factors: the region's size and ethnic composition and aspects of the governor's administrative and political performance. The Kremlin took advantage of its ability to fire a governor relatively rarely, reflecting the political complications associated with doing so, even if the Russian president had the formal power to do so. Replacements were more frequent in some periods than others, notably in the run-up to a federal election cycle or when the appointment rules were about to end in favor of a new form of elections. The hazard to a governor of being replaced in a given month was most strongly affected by how well the governor had per-

formed politically. Regional importance and socioeconomic performance were also considerations, but less powerful when controlling for political performance.

Even during a period when the law gave Russia's central executive authorities bureaucratic control over the governors, the Kremlin faced a complicated challenge of elite management throughout the country. The Russian president had the upper hand but not political carte blanche. Power plays and some form of bargaining must underlie the patterns our analyses reveal. Seven and a half years of presidential appointments failed to solve the challenge of effective elite management in a non-democratic regime. The complexities of Russia along with the absence of a unifying ideology or party structure raise the question of whether it can be solved.

Appendix: Data Sources and Variable Construction

Our information on the names and tenures of the regional leaders comes from Rulers.org (2013), modified and augmented by media reports from a variety of sources. The governors' birthdates are taken, when possible, from the official website of the governor or the regional executive branch, augmented as necessary from other sources. Data on regional population size, gross regional product, crime rates and life expectancy all come from *Regiony Rossii* (Russian Federal State Statistics Agency various years). Data on the ethnic make-up of the regions come from the 2002 and 2010 censuses (Russian Federal State Statistics Agency 2005, 2012).

Our measure of the governor's political performance is based on federal election results. We calculate the votes received by the Kremlin's candidate or party as a percentage of the total *eligible* voters in that region. Data on regional voting and number of eligible voters come from Golosov (2008) and the Russian Central Electoral Commission (Central Electoral Commission of the Russian Federation 2012b, 2012a). The Kremlin's candidates were Putin in 2004 and 2012 and Medvedev in 2008. The pro-Kremlin party was United Russia in 2003, 2007 and 2011.

Using the percent of all eligible voters is a way to incorporate both high vote totals and high levels of turnout. Regions that produced high turnout were doing the Kremlin a favor both because some of Russia's federal elections required certain turnout levels to be valid and to enhance the democratic legitimacy of a victory. From 2003-2008, achieving high levels of turn-out was a stated aim of the Kremlin. In some elections in the 2000s, quite a few regions pro-duced turnout above 80 per cent and, among those voters, pro-Kremlin totals also above 80 per cent. Ingushetia, for instance, reported 98 per cent voting for Putin in 2004 with 96 per cent of the republic's eligible voters turning out. Clearly, totals of this sort cannot reflect public choice, whatever the level of Putin's popularity. By contrast, take Orenburg Oblast. Its turnout of 62 per cent was at the median for the regions. It gave Putin 59 per cent of the votes, a dominant

victory in most settings but well below the mean. Calculating the votes for the Kremlin candidate or party as a percent of all eligible voters in the region is an arithmetically simple way to allow both voting and turnout to influence the region's score. Ingushetia's score on the measure of pro-Kremlin votes as a percent of all eligible voters in that election was 94.4. Of all eligible voters in Orenburg, by contrast, Putin received 37 per cent. For all the regions in 2004, pro-Putin votes as a percent of eligible voters ranged from 30.5 per cent to Ingushetia's 94.4 per cent. The mean was 47.8, and the median 42.9. (The median is much lower because a few regions have very high scores.) Given the fluctuation in the percentage of eligible voters from presidential election to presidential election, we standardize it as a way to capture the governors' political performances relative to that of other governors at the time.

Our measures of the pro-Kremlin percent of eligible voters, calculated from published election results, correlate well with experts' ratings of the different regions' degree or absence of democracy. The Carnegie Moscow Center gathered both quantitative measures and expert evaluations of each region's democratic characteristics on numerous dimensions (Petrov and Titkov 2008). The percentage of eligible voters is strongly correlated in the expected direction with all three Carnegie measures in every election from 2003-2008.

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