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What explains regional variation in election fraud? Evidence from Russia: a research note

Max Bader[a]* and Carolien van Ham[b]

[a]*Institute for History, Leiden University, Leiden, The Netherlands;* [b]*Center for the Study of Democracy, Twente University, Enschede, The Netherlands*

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The December 2011 legislative election was among the most fraudulent national elections in Russia since the communist period. The fraud, however, was not evenly spread across the country. Precinct-level election returns from the 83 regions of the Russian Federation suggest that the level of fraud ranged from minimal or small in some regions to extreme in some others, with moderate to high fraud levels in many regions in between. We argue that in an electoral authoritarian context like Russia, regional variation in fraud can be explained by differences in (a) the perceived need by regional authorities to signal loyalty to the center by "delivering" desired election results; (b) the capacity of regional authorities to organize fraud; and (c) the vulnerability of citizens to political pressure and manipulation. We test the effect of signaling, capacity, and vulnerability on electoral fraud in the 2011 legislative elections with data on the 83 regions of the Russian Federation. We find evidence for all three mechanisms, finding that the tenure of governors in office, United Russia's dominance in regional legislatures, and the ethnic composition of regions are most important for explaining regional variation in electoral fraud.

Keywords: Russia; elections; election fraud; regions

Introduction

The December 2011 legislative election was among the most fraudulent national elections in Russia since the communist period (OSCE/ODIHR 2012; Gel'man 2013). The fraud, however, was not evenly spread across the country. Precinct-level election returns from the 83 regions of the Russian Federation[1] suggest that the level of fraud ranged from minimal or small in some regions to extreme in some other regions, with moderate to high levels of fraud in many regions in between. The simple assertion that the 2011 election was highly fraudulent obscures this reality of regional variation.

What explains this regional variation in fraud levels? Research on previous elections in Russia has yielded a wide range of possible explanations, including governors' incentives to signal loyalty to the federal center, the capacity of regional leaderships to organize fraud, the level of urbanization, and the "ethnic" status of regions. The emerging comparative literature on election fraud and

*Corresponding author. Email: m.bader@hum.leidenuniv.nl

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election integrity, in addition, points to explanations such as the level of economic development and economic inequality that may also apply to the Russian elections (Birch 2011). This research note examines the merit of these and other explanations of the regional variation in electoral fraud, seeking to gain a closer understanding of why fraud is prevalent in some regions but much less so in other regions. The subnational comparative method that we adopt has the advantage of holding constant many variables – such as the electoral system and the dynamics of national political competition – that would vary in a cross-country study (Snyder 2001, 96). The case of Russia is particularly interesting for a study on the determinants of electoral fraud due to the country's size, heterogeneity, and availability of precinct-level election results. The research note also seeks to refine our understanding of subnational politics in Russia. Existing research has examined regional variation in, among other things, United Russia's dominance in regional assemblies (Panov and Ross 2013), United Russia's vote share (Reuter 2013), regional machine strength (Moraski and Reisinger 2010), and electoral system choice (Golosov 2013). An encompassing account of regional variation in electoral fraud, however, is still missing.

The research note is organized as follows: in the next section, we briefly discuss election fraud in Russia, and in a third section, we review the comparative literature explaining election fraud, developing our theoretical argument regarding the effects of signaling, capacity, and vulnerability. A fourth section discusses data and methods used, and in a fifth, we present our results. We conclude with a discussion of our results and suggestions for further research.

Election fraud in Russia

Electoral fraud has been defined as "deliberate wrong-doing by election officials or other electoral stakeholders, which distorts the individual or collective will of the voters" (Vickery and Shein 2012, 9); "deceptive or negligent interference with the electoral process that intends to prevent the outcome from reflecting the will of the people" (López-Pintor 2010, 7); and "clandestine and illegal efforts to shape election results" (Lehoucq 2003, 233).[2] Following these definitions, fraud is understood here as deliberate acts that are meant to distort electoral outcomes.

Electoral fraud has been part of every election in Russia since 1991. During the 1990s, however, fraud was mostly limited to a number of regions with an "ethnic" titular nation, i.e., the republics (Ordeshook and Myagkov 2008). Over the course of the 2000s, fraud in national elections gradually spread to a much larger number of regions, such that fraud likely became common in a majority of Russia's 83 regions (Ordeshook and Myagkov 2008; Moser and White 2013). The deterioration of electoral integrity in Russia reflects the growing authoritarian trend under President Putin (Gel'man and Ryzhenkov 2011).

Russians went to the polls in December 2011 to elect the sixth convocation of the State Duma. The legislative election was won by the ruling United Russia party, which is affiliated with President Putin, with 49% of the vote, and turnout was reported at 60%. Since the election, a flurry of research has produced insights

into the scope, geographical distribution, and nature of fraud committed in the election. Much of this research is based on "election forensics," i.e., statistical analyses of vote and turnout results to detect deviations that might point to fraud, drawing from precinct-level data published on the website of the Central Election Commission of Russia and subordinate election commissions. Election forensics analyses of the 2011 election reveal a high degree of anomalous turnout, not just in regions that are notorious for reporting incredible election results (such as Tatarstan and Chechnya), but across Russia (Shpil'kin 2011; Enikolopov et al. 2013; Gehlbach 2012). For almost every polling station with anomalously high turnout, the party that benefits most from the surplus of votes is United Russia, whereas for all other parties turnout shows no discernible correlation with vote share. The vote share of United Russia is thus higher as turnout is higher (Klimek et al. 2012). The implication is that both reported turnout and the reported result for United Russia are associated with the incidence of fraud; the higher the turnout and the better the result for United Russia, especially relative to other polling stations in the same administrative unit, the more likely it is that fraud has been committed to achieve the high turnout and the strong result for the ruling party and Putin (Shpil'kin 2011).

As noted, there has been great regional variation in the level of electoral fraud. Consider the distribution of turnout in three diverse regions, mapped below: the Republic of Karelia, the city of Moscow, and the Republic of Mordovia. In a fraud-free election, the distribution of turnout would likely correspond with a normal distribution (Ordeshook and Myagkov 2008; Shpil'kin 2010). Turnout for the 332 polling stations with at least 500 registered voters in Karelia averages 49% and is almost normally distributed. The distribution for the 3208 polling stations in Moscow, with average turnout of 61%, by contrast, is highly skewed. Much of the turnout on the right side of the peak of the curve, consequently, can be considered anomalous. The distribution of turnout in Mordovia finally suggests an extreme degree of fraud. The 382 polling stations in Mordovia with at least 500 registered voters reported an average turnout of 94% (Figure 1).

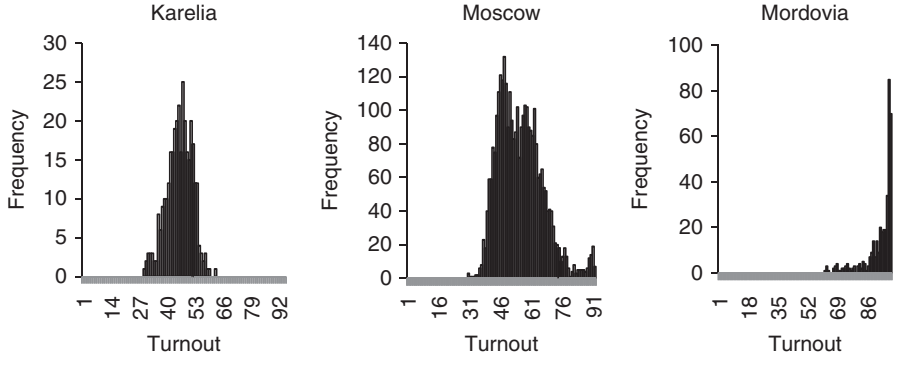

Figure 1. Regional variation in electoral fraud in Russia.

Explanations for fraud

The literature on election fraud, and on elections and subnational government in Russia, yields various possible explanations for the differences in fraud levels. The expanding literature on election fraud and election integrity identifies various explanatory factors, such as socioeconomic structure, electoral institutions, and electoral competition, as well as the role of international actors such as international election observers (Birch 2011; Van Ham 2013). The advantage of the subnational comparative method that we adopt here is that many of these variables, such as the electoral system and the dynamics of national political competition, are held constant, allowing us to focus our analysis on a more limited number of explanatory variables. Moreover, considering regional variation in electoral fraud allows us to develop and test hypotheses about the causal mechanisms that are at work in an electoral authoritarian regime such as Russia. We argue, building on both the comparative and the Russia-specific literature, that in an electoral authoritarian context, regional variation in fraud can be explained by differences in (a) the perceived need by regional authorities to signal loyalty to the center by "delivering" desired election results; (b) the capacity of regional authorities to organize fraud; and (c) the vulnerability of citizens to political pressure and manipulation.

Signaling

A first explanation that focuses on the role of regional authorities argues that governors and mayors use elections to signal loyalty to the federal authorities. According to Kalinin and Mebane (2010, 1), "[T]he signaling strategy was employed by regional governors to signal about their loyalty to the Center by means of fraudulently augmented turnout and to get certain rewards in exchange, such as political survival or post-electoral transfers." In addition to receiving rewards for getting the right electoral results, regional leaders can also be punished for failing to deliver. As Gel'man (2010, 8) notes, "The capacity to control subnational electoral politics by any possible means, rather than effective performance was the best predictor of survival of appointed governors and city mayors." The signaling strategy is believed to have become increasingly common. Moraski and Reisinger (2010, 2) find that "electoral deference spread over time across Russia's regions through a process of learning: Other regions witnessed the behavior of deferential leaders, perceived the likely benefits of such action, and changed their behavior accordingly."

Capacity

A second explanation that focuses on the role of regional authorities in electoral manipulation stresses the capacity of the regional administrations to provide the "right" results. Reuter (2013) characterizes regional leaders as vote brokers and finds that there is a relation between the strength of the political machine of

governors and election results of the ruling United Russia party. Reisinger and Moraski (2010) similarly argue that regional leaders use their political control to produce favorable results for United Russia and for the Kremlin-backed presidential candidate.

Vulnerability

Finally, a third explanation focuses on citizens' vulnerability to political pressure and manipulation. Especially citizens in more precarious socioeconomic conditions, citizens in rural areas, citizens that depend on the state for their job, and citizens with less access to information about politics may be more easily persuaded to engage in multiple voting, voting for the "right" party, etc. Specifically, we would expect electoral fraud to be more prevalent in regions with a higher share of poor people, rural voters, people with a non-Russian ethnic background, people employed in state-owned enterprises, and people without access to the Internet.

Socioeconomic factors

Regarding the influence of socioeconomic factors, in studies of electoral fraud outside Russia it has been found that weaker economic development and economic inequality increases the frequency of vote-buying, and electoral malpractice in general (Brusco, Nazareno, and Stokes 2004; Bratton 2008; Ziblatt 2009). Vote-buying specifically seems to be targeted at poor voters and voters with low levels of education (Bratton 2008; Birch 2011).

The impact of the degree of urbanization and ethnic background on the incidence of electoral fraud in Russia has been confirmed in several studies. According to Panov and Ross (2013, 748), "it is conventional wisdom that rural voters and non-Russian ethnic groups are much more vulnerable and sensitive to administrative pressure and authoritative demands because of their dependence on local authorities and their paternalistic orientations." Ordeshook and Myagkov (2008) find that much of the electoral fraud that took place during the 1990s was concentrated in the "ethnic" republics rather than in the more ethnically Russian regions. The ethnic factor is still seen as a determinant of electoral fraud after the 1990s (Myagkov, Ordeshook, and Shakin 2009; Goodnow, Moser, and Smith 2012). Ordeshook and Myagkov (2008) also find that, in a number of elections, electoral fraud was more widespread in rural areas than in urban areas. Studies of electoral fraud outside Russia have equally found that electoral fraud is more common in rural areas (Hicken 2007; Bratton 2008).

Another group that is seen as vulnerable to manipulation in elections are people who work for firms that are owned or controlled by the state. According to Frye, Reuter, and Zakonyi (2012, 32–33), "[L]arge, financially dependent firms in sectors characterized by asset immobility or slack labor markets whose managers are 'core' supporters of the regime are especially likely to mobilize their workers."

Finally, it has also been argued that more informed citizens – i.e., citizens with better access to (independent) information – are less vulnerable to electoral manipulation (Birch 2011; Van Ham 2013). Although likely partly picked up by the differences in media access between rural and urban regions, the degree of Internet use may be influential here as well. Reuter and Szakonyi (2013) have found that Russians who use social media that feature political discussions among their users, such as Twitter and Facebook, were much more aware of electoral fraud than voters who did not use these social media.

In the next sections of the paper, we test the effects of signaling, capacity, and vulnerability on electoral fraud in the 83 Russian regions during the 2011 legislative elections.

Data and methods

Electoral fraud has been measured in many ways, ranging from coding of election observation reports, historical and media sources to expert and citizen surveys (Van Ham 2014). Assessments of electoral fraud based on "election forensics" – statistical analyses of vote and turnout results at the local and regional levels within a country to detect deviations that might point to fraud – are also increasingly employed (Mebane 2007, 2013; Alvarez, Hall, and Hyde 2008; Myagkov, Ordeshook, and Shakin 2009; Beber and Scacco 2012; Klimek et al. 2012; Levin and Alvarez 2012).

In this paper, we use the election forensic technique proposed by Moser and White (2013), which views anomalous turnout as a proxy for fraud. Although this is not necessarily the case for vote shares, it seems reasonable to assume that turnout in a non-fraudulent election would follow a normal distribution (Ordeshook and Myagkov 2008; Klimek et al. 2012). Hence, the degree to which turnout results in each region deviate from a normal distribution could be indicative of fraud. Moser and White (2013) propose to take turnout levels that are higher than mean overall turnout in the election plus one standard deviation as "anomalous."[3] We follow the same approach, which in the case of the 2011 legislative elections means that polling stations with turnout more than 76% were coded as having anomalous turnout.

We use precinct-level data from the website of the Central Election Commission of the Russian Federation. We exclude polling stations with less than 500 registered voters, as this filters out the overwhelming majority of special polling stations (e.g., vessels, hospitals, prisons) that in many cases report anomalous turnout for reasons other than fraud. Average turnout for the 62,442 precincts is 59.5%, with a standard deviation of 16, hence the cutoff point at 76%. We subsequently calculated the proportion of polling stations in each region that reported turnout levels more than 76% (and for the alternative dependent variable, more than 92%). Table A in the online Appendix shows the data for both dependent variables per region. As expected, we find strong variation among regions, with Karelia and the Magadan region reporting no polling stations with turnout more than 76%, while the republics of Chechnya, Kabardino-Balkaria, and

Karachaevo-Cherkessia have almost *only* polling stations with turnout more than 76%. Figure 2 shows the geographical distribution of anomalous turnout in the 2011 election, whereas Figure 3 shows the expected relation between the level of anomalous turnout and the vote share for the United Russia party.

Turning to the independent variables, we measure signaling, capacity, and vulnerability in the following ways. To measure signaling, or the incentives for regional leaders to "deliver" election results, we include variables measuring the time governors had been in office at the moment of the election as well as the degree of regional dependence on central state funds. One circumstance under which regional leaders are likely to signal loyalty to the federal center through election fraud is when they are relatively newly appointed. The tenure of the regional governors, in terms of the number of days governors were in office at the time of the 2011 Duma elections, is therefore included as a variable for the explanation of electoral fraud that points to the deferential behavior of regional governors.[4] Another circumstance under which regional leaders are likely to signal loyalty is when their region depends on federal funds.[5] We include a variable measuring the proportion of self-generated income as a share of total income of the regional authorities in 2011 (RIA Novosti 2012, 39). In addition, we include a measure of the extent to which regions engage in foreign trade as an additional proxy for dependence on the center (assuming that more foreign trade will render regions more independent and less in need of signaling).

To measure administrative capacity, we include variables measuring regional wealth and natural resources, as well as political control of the regional legislature. Regional leaderships in relatively wealthy regions generally will have more administrative capacity than regional administrations in relatively poor regions, and access to more state resources to use in manipulating the election if needed. Regional wealth is measured here by gross regional product (GRP) per capita.[6] In relatively poor regions, GRP per capita may influence electoral fraud in a different way, as regions with low GRP may have more poor voters who are easier to

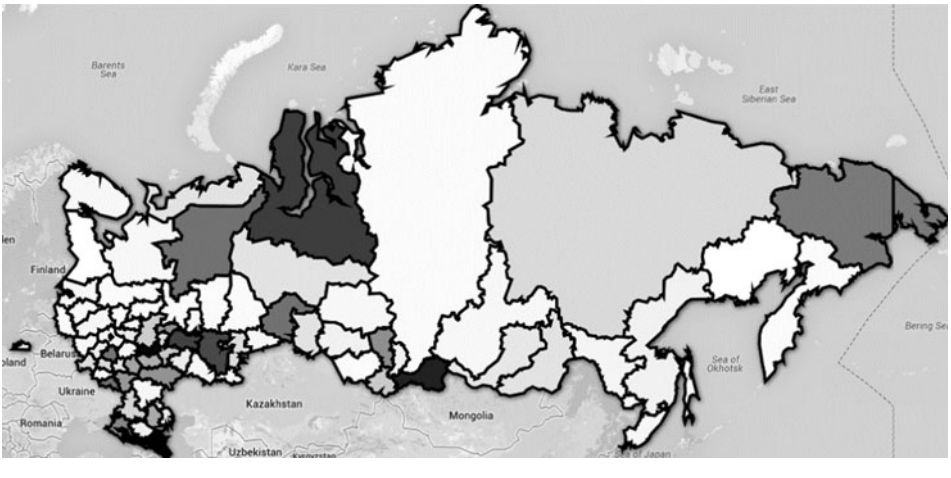

Figure 2. Anomalous turnout across Russia.

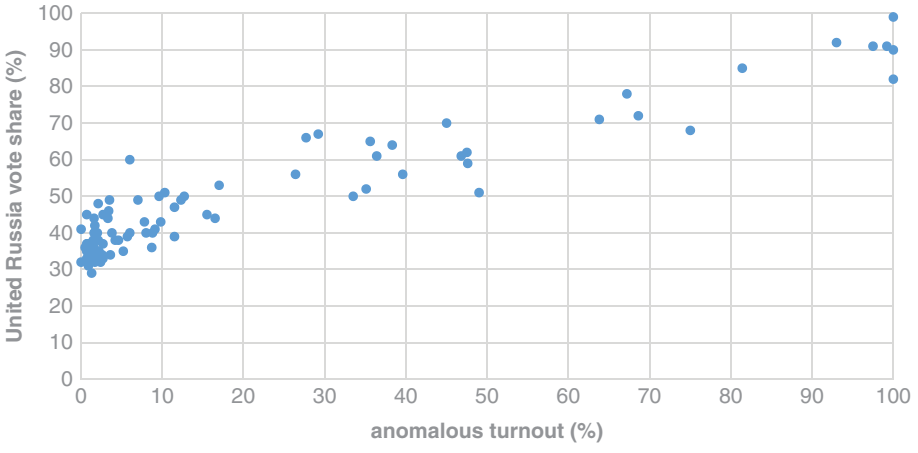

Figure 3. Anomalous turnout and United Russia vote share.

manipulate. We capture this by including poverty as an independent variable as well (see the variables included to measure vulnerability below). Natural resources also provide regional governments access to state resources that may be used to organize fraud; hence, we also include a variable measuring the proportion of GRP derived from natural resources. This is measured as a dummy variable, where regions that derive more than 70% of their GRP from natural resources are coded 1, and all the others are coded 0. In addition to GRP per capita and natural resources, another indicator of administrative capacity to organize fraud is the dominance of United Russia in the regional legislature (Reuter 2013). Data on the share of seats held by United Russia in regional legislatures at the time of the 2011 elections are drawn from the websites of those regional legislatures.

Finally, our third explanation for regional variation in fraud focuses on population characteristics and examines the degree to which citizens are likely to be vulnerable to political pressure and manipulation. We include the following variables to test this argument: poverty rates in each region, the proportion of non-ethnic Russians living in the region, the degree of urbanization, the proportion of citizens employed in state enterprises, and the volume of Internet traffic per capita. These data were collected at the regional level for all regions for 2011 by the Federal State Statistics Service of the Russian Federation.[7]

The descriptive data for all the variables can be found in Table B in the online Appendix. While we have data in great detail for the dependent variable (anomalous voter turnout as a proxy for electoral fraud), this is not the case for most independent variables. For most of our independent variables, we only have data at the regional level; hence, our analysis is constrained to the 83 regions of the Russian Federation. In such a small sample, results can be very sensitive to the inclusion or exclusion of a single region, and hence checking the robustness of results is important. In order to do so, we use bootstrapped standard errors in the multivariate regression models reported in the next section. We also check our results using full jackknife and bootstrap estimations, the results of which are

reported in Table C in the online Appendix. The results with the alternative dependent variable are reported in Table D in the online Appendix. The next section discusses our findings.

Results

Table 1 shows the results of the analyses. Model 1 shows that economic independence of regions from the center is indeed related to the extent of electoral fraud. Regions with a higher proportion of self-generated income have a significantly lower proportion of polling stations with anomalous turnout. Likewise, the proportion of foreign trade runs in the expected direction, although this variable is not statistically significant. As regards signaling, we find that time in office of the regional governor runs in the opposite direction as expected: Anomalous turnout levels appear to be more frequent in regions where governors have served in office longer. This may be due to the fact that until 2005 regional governors were directly elected, while from 2005 onward (until June 2012), they were appointed by regional legislatures following recommendations by the president. Regional governors that were elected, rather than appointed by Putin, may have good reasons to signal loyalty to the center, even while having been

Table 1. The effects of signaling, capacity, and vulnerability on electoral fraud in Russia, 2011.

Variable	Model 1 – signaling	Model 2 – capacity	Model 3 – vulnerability	Full model
Independent variables				
Signaling				
Days in office governor	0.001			0.002 +
% Self-generated income	−0.863**			−0.283
% Foreign trade	−0.010			0.023
Capacity				
GRP per capita (per 1000)		−0.037		−0.006
Natural resources > 70% of GRP		26.405		2.616
Seat share UR regional legislature		1.072***		0.445**
Vulnerability				
Poverty (per 1000)			0.178	0.198
% Non-ethnic Russians			0.878***	0.802***
Urbanization			−0.252	
% Citizens employed state enterprises			−0.644 +	−0.567
Internet traffic (gigabyte) per capita			−0.003	0.030
Constant	76.145***	−48.849**	35.058	−2.128
N	82	82	82	82
Adjusted R^2	0.26	0.22	0.62	0.66

Notes: OLS with bootstrapped standard errors. *P*-Values: + 0.1, **0.01, ***0.001 (two-sided).

longer in office. Also, regional governors that were appointed under President Boris Yel'tsin may have good reasons to signal loyalty to the center. Model 1 hence partly confirms the idea of signaling: needing to deliver fraud because of economic dependency on the center. The relation of time in office to electoral fraud is less clear. However, Model 1 explains only 26% of variation in fraud among regions, indicating that other causal mechanisms are at work.

Model 2 shows the results for the variables measuring administrative capacity. The effect for GRP per capita is insignificant, and moreover not positive but negative – i.e., electoral fraud is higher in poorer regions than in richer ones, which may be due to signaling as well as vulnerability. Turning to the other variables, here it seems that administrative capacity has the expected effect. In regions with a high proportion of natural resources contributing to their GRP, electoral fraud is substantially higher than in regions with no such "resource curse." However, this effect is not significant. The most important effect seems to be generated by political control at the regional level: The higher the seat shares of United Russia in the regional legislature, the higher electoral fraud is.

Model 3 shows the results for the variables measuring vulnerability of citizens to manipulation and political pressure in elections. Higher levels of poverty indeed appear to be associated with higher levels of fraud, although this effect is not significant. Regarding the ethnic composition of regions, we confirm earlier findings on regional variation in electoral fraud: In regions where the proportion of non-ethnic Russians is higher, electoral fraud is significantly and substantially higher. For urbanization, we also find the expected effect: The more urbanized the region is, the lower the incidence of electoral fraud. However, this effect is not significant. This is probably due to the relatively high correlation between urbanization and the proportion of non-ethnic Russians (although not high enough to generate multicollinearity). The proportion of citizens employed in state enterprises is also significant, though not in the expected direction; electoral fraud appears to be lower in regions where more citizens work in state enterprises. This is perhaps due to the fact that having a large proportion of citizens working in state enterprises provides incumbents with other means of manipulating the vote, rendering manipulation of turnout results less necessary. Finally, the effect of Internet traffic is in the expected direction, but insignificant. Of the three models, Model 3 explains by far the most variation in electoral fraud, i.e. over 60%.

Finally, Model 4 ("full model") shows the results for all variables together.[8] Interestingly, economic variables no longer appear to be significant in this full model. The proportion of self-generated income is still in the expected direction and close to one-tailed significance; however, GRP per capita, poverty, and the proportion of people working in state-owned enterprises are all insignificant once all variables are included in the model. What seem to be the most important factors explaining regional variation in electoral fraud in Russia are the proportion of non-ethnic Russians in the region and the seat share of United Russia in the regional legislature. Governors who were appointed in the era of Yel'tsin or who were elected also appear to "deliver" more fraud than governors who were more

recently appointed. Models checking the robustness of these results using jackknife and bootstrapping procedures confirm these results (see Table C in the online Appendix).[9]

Conclusion

In this research note, we have sought to explain regional variation in electoral fraud in the Russia's 2011 legislative elections. We argued that in an electoral authoritarian context like Russia, regional variation in fraud can be explained by differences in (a) the perceived need by regional authorities to signal loyalty to the center by "delivering" desired election results; (b) the capacity of regional authorities to organize fraud; and (c) the vulnerability of citizens to political pressure and manipulation. We sought to test the effects of signaling, capacity, and vulnerability on electoral fraud in the 2011 legislative elections with data on the 83 regions of the Russian Federation. We respect to signaling, we found no evidence that fraud was more frequent in regions where governors had been appointed more recently. Rather, signaling turned out to be more pronounced in regions where governors had been appointed longer ago. This may be due to the fact that several regional governors were appointed under President Boris Yel'tsin, and several other governors were elected rather than appointed by Putin, generating incentives for these governors to engage in signaling. We did find evidence that fraud was more prevalent in regions with stronger economic dependence on the center: Anomalous turnout results were less frequent in regions with a higher proportion of self-generated income. Turning to capacity, we find that United Russia's dominance in regional legislatures is indeed associated with higher levels of electoral fraud in national elections. Finally, concerning vulnerability, the ethnic composition of regions appears to be the most important factor in explaining regional variation in electoral fraud.

However, considering the connection between these three variables, another explanation may be possible for the effect found for ethnicity. While it could be that non-ethnic Russians are more vulnerable to electoral manipulation due to their generally more precarious socioeconomic position, paternalistic political culture (Panov and Ross 2013), or the lingering effect of Soviet-era ethnically based patronage networks (Hale 2007), it could also be the case that electoral manipulation is simply more needed in these regions as genuine political support is lacking. Our findings suggest that in those regions where loyalty to the center is not easily won – i.e., those regions with substantial ethnically non-Russian populations, where the central government cannot rely on winning elections on the basis of citizens' genuine political support and votes cast for them – fabricating electoral outcomes is most important to maintain the center's power. The dominance of United Russia in the regional legislature illustrates the political control in these regions over electoral processes and outcomes, as such dominance may likely itself have been fabricated through fraud in regional elections, and helps maintain the center's control in successive elections. Further analyses of fraud dynamics at the subregional level as well as data on individual-level

attitudes and behavior of ethnically Russian and non-Russian voters are needed to more precisely disentangle the causal mechanisms at work.

Supplemental data

Supplemental data for this article can be accessed http://dx.doi.org/10.1080/1060586X.2014.969023

Notes

1. In March 2014, two additional regions became part of the Russian Federation – the Republic of Crimea and the federal city of Sevastopol – although these are recognized internationally as part of the territory of Ukraine.
2. For an overview and discussion of different conceptualizations of election integrity, see Van Ham (2014).
3. Not knowing what the actual results would have been in the absence of fraud, how to decide what level of turnout to consider as "anomalous" is subject to some controversy (Klimek et al. 2012). We propose that using the mean plus one standard deviation as a cutoff point is reasonable, especially since we use the actual election data that are likely biased upward due to successful fraud increasing turnout levels. Hence, if anything, our measure is likely to underestimate the extent of fraud that occurred. However, we also test our results using a dependent variable that takes the mean plus *two* standard deviations as the cutoff point for anomalous turnout. Replication datasets and the codebook are available from the authors.
4. Information about the tenure of governors was retrieved from the websites of the administrations of the 83 federation subjects.
5. Gervasoni (2010) finds that regions in Argentina whose income in part consists of rents in the form of government subsidies are less democratic than regions that do not rely on such rents because they are fiscally independent from their constituents. Because receiving government subsidies makes regions more dependent on the federal center, these recipient regions may also have an incentive to signal loyalty to the center, which they can do by delivering votes in elections. Goode (2007, 384), correspondingly, argues that governors from "debtor regions," which receive funds from the federal budget, face more pressure than governors from "donor regions" that contribute to the federal budget.
6. Data on gross regional product for the 83 regions are available on the website of Roskomstat at http://www.gks.ru/free_doc/new_site/vvp/vrp98-11.xls.
7. Data on poverty, measured here as the amount of disposable income of households after the most necessary expenses, are available from http://www.mn.ru/multimedia_infographics/20120525/318904205.html; data on the ethnic composition of the federation subjects are available from www.gks.ru/free_doc/new_site/population/demo/per-itog/tab7.xls. The publication *Regiony Rossii. Osnovnye kharakteristiki sub"yektov Rossiyskoy Federatsii*, available from http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138625359016, contains data for 2011 on urbanization (pp. 58–59), share of employed people working in state enterprises (115–116), and use of the Internet (683–684).
8. Urbanization is left out in these analyses due to multicollinearity with self-generated income.
9. The results for the models reported in Table 1 were also checked leaving out the regions with less than 100 electoral precincts; this did not change the results.

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