

Understanding Electoral Frauds through Evolution of Russian Federalism: from "Bargaining Loyalty" to "Signaling Loyalty"

Kirill Kalininⁱ, Walter R. Mebane, Jr.ⁱⁱ

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ABSTRACT: In this paper we propose that the phenomenon of fraudulent elections in Russia can be explained by combining a theory of federalism with a game-theoretic approach. We argue that the growth of electoral frauds from mid-90s to 2000s can be explained by changes in rational strategies of the governors tied to the evolution of Russian federal relations. If in the mid-90s Russian decentralization motivated the governors to use their strategies of pre-electoral bargaining, in which powerful regions provided the center with the favorable electoral outcomes in exchange for political, institutional and financial resources, in the 2000s the subsequent political recentralization has led to revision of pre-electoral bargaining agreements and imposition of what, we term in this paper as post-electoral signaling. The 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.

Key words: elections, electoral frauds, Russia, turnout, signaling, bargaining, governors

ⁱ Ph.D. student, Department of Political Science, University of Michigan (E-mail: kkalinin@umich.edu).

ⁱⁱ Professor, Department of Political Science and Department of Statistics, University of Michigan, Haven Hall, Ann Arbor, MI 48109-1045 (Phone: 734-763-2220; Fax: 734-764-3522; E-mail: wmebane@umich.edu).

Introduction

Over the most recent election cycles Russian elections have become increasingly unfree and unfair, characterized by suppression of electoral competition, rising levels of administrative interference and drastic growth of electoral frauds (Freedom House 2010). Our previous research (Mebane and Kalinin 2009; Mebane and Kalinin 2010) and work by others (Myagkov and Ordeshook 2008; Myagkov, Ordeshook, and Shaikin 2008, 2009) focused primarily of diagnostics of fraudulently enacted turnout. In our research we analyzed the 2003 and 2007 Duma elections and the 2004 and 2008 presidential elections to show that it is useful to augment analysis of Russian elections that focuses on voter turnout statistics with information about the distribution of the significant digits in precinct-level vote counts. We concluded that a combination of various methods of electoral diagnostics is the important way to reveal falsifications of turnout and voting anomalies. In this paper we further develop our argument by exploring influential factors which are conducive to the emergence of fraudulent turnout.

In this paper we propose that the phenomenon of fraudulent elections in Russia can be explained by combining a theory of federalism with a game-theoretic approach. We argue that the growth of electoral frauds from mid-90s to the 2000s can be explained by changes in rational strategies of the governors tied to the evolution of Russian federal relations. Specifically, in the mid-90s Russian decentralization motivated the governors to use strategies of pre-electoral bargaining, in which powerful regions provided the center with favorable electoral outcomes in exchange for political, institutional and financial resources (Treisman 1997,1998). In the 2000s the subsequent political recentralization has led to revision of bargaining agreements and the imposition of what we term in this paper as electoral signaling. This is a strategy employed by regional governors to signal their loyalty to the Center by means of fraudulently augmented electoral results and to get certain rewards in exchange, such as political survival or post-electoral transfers.

As a measure of electoral fraud here we use the last digit of the turnout percentage, which proved to be a good measure of fraud in our earlier papers (Mebane and Kalinin 2009). Unlike other approaches, it has a direct interpretation linked with electoral signaling, it matches our theoretical assumptions stressing on the importance of turnout percentages rather than vote counts.

To explain the possibility of pre-electoral bargaining and electoral signaling we develop a game theoretic model--a signaling model--which we test using empirical data from the four most recent Presidential elections: 1996, 2000, 2004 and 2008.

Bargaining versus Signaling strategies

Pre-electoral period and bargaining strategies in the 90s

By the early 1990s the majority of Russian regions hosted centralized political regimes with the executive authority concentrated in the office of chief executives. The governors were able to establish political regimes without significant constraints from the Center, concentrating regional political and economic resources in their hands. The power asymmetry between the Center and the regions, resulted in “opportunistic” bargaining during the 1990s. The bargaining included the process of distribution and acquisition of federal resources by the regions in exchange for providing electoral support to the Center during national elections. The resources provided to the regions by the federal center included various institutional resources, which could be used by the regions to systematically violate federal laws; economic resources, which assumed distribution of state property and tax revenues in favor of some regions; finally, political relations, which assumed the change in economic and political statuses of the regions by signing bilateral treaties with half of them (Gelman 2006). The resulting federal asymmetry enabled specific groups of regions to play a greater role in federal politics and continue their bargaining policies with growing levels of concessions from the center. In a long-term perspective, such bargaining enabled the regions to institutionalize their opportunistic behavior. By 1998, 42 bilateral treaties were signed between the Center and the regions, delegating specific political and economic rights to the regions vis-à-vis the remaining regions, which were excluded from such bargaining.

Unlike Russian oblasts, ethnic Russia regions (republics) with greater institutional resources were more successful in using their bargaining strategies, by providing electoral support to the Center in exchange to political and economic resources (Treisman 1999). In fact, Republican elites considered promotion and management of ethnic revival on their

territories as a way of getting a better bargaining position with the federal center (Gorenburg 1999). Moreover, the greater electoral legitimacy of Republican leaders compared to the appointed heads of the Russian regions until the mid-90s also added to their bargaining leverage (Treisman 1999).

In return to concessions from the Center, the governors mobilized their regional “political machines” to provide necessary electoral support to the national ruling elites (Gel'man 2009). However, due to the fact that since 1996 all of the Russian regions hosted gubernatorial elections, the possibility of electoral punishment by regional constituencies could serve as a constraining factor on their strategies of the governors to commit electoral frauds in the region. In other words, in general electoral frauds were politically costly to the governors. However, this cost could vary depending on the governor's capacity to mobilize his/her “political machine” to provide expected fraudulent results. Another factor that could affect governor's decision to commit fraud could be his/her “moral” obligations to the Center, if s/he was appointed before the elections. However, during the pre-electoral period financial resources provided by the center were directed to increased public spending in the region and contributed to increase in electoral support of both office-seekers, i.e. the elected governors, and the President, which could make any electoral frauds simply unnecessary. Treisman offers empirical evidence to support his claim that the governors who opposed Yeltsin would use central transfers in a way that would boost local support for the center and themselves, though this reduced their leverage in the future bargaining with the Center (Treisman 1999:111-115).

Hence, our basic assumptions are: pre-electoral bargaining takes place before elections; pre-electoral bargaining should lack frauds.

Signaling strategies during the electoral period in the 2000s

After Putin's accession in 2000 the nature of federal relations was reviewed by Kremlin. The Center reestablished its control over the regions through administrative recentralization (return of Center's control over regional branches of federal agencies), recentralization of economic resources (growing concentration of financial resources in the hands of the Center at the expense of the regions), finally, political recentralization (Putin demanded compliance of regional laws and constitutions with that of the federal

governance (Kahn 2002; Gel'man 2006). The policy of recentralization was launched to restore the Center's control over the regions by revision and cancellation of the majority of the bargaining agreements of the 1990s. Specifically, the policies were expected to undermine the growing bargaining leverage of the Republics, which hindered sustainability of the Russian state.

Recentralization has led to considerable reduction of bargaining resources of the regions and dramatic increase of coercive economic and political resources of the Center. As a result, the regions became politically integrated into the superstructure of the Center with economic resources flowing from the Center to the regions. With the abolition of gubernatorial elections in 2004, the governors lost their independent political base: the political survival of the governor was put under the Center's judgment. This has led governors' "political machines" to be co-opted into the power vertical. As a result, political loyalty in addressing Kremlin's political needs was regarded by Kremlin as a crucial quality for the governors. Loyalty implied both the governor's ability to put under his/her control political, social and economic spheres in the region, and his providing Kremlin with favorable electoral outcomes, especially during national elections. With the abolition of gubernatorial elections, the costs for committing frauds by the governors were reduced: if in the 90s they could be electorally punished by their regional constituency, in 2008 electoral punishment was no longer possible. Moreover, if in 2008 a governor failed to provide a certain level of political outcome to Kremlin, s/he could be considered as non-loyal and lose the seat. On the opposite, the benefits from committing frauds could far outweigh the actual costs: if Kremlin was satisfied with electoral results, the governor kept the job and the size of transfers could eventually increase.

In Soviet times to meet the figures in the plan and not to be punished the regional bosses often applied "false accounting" (*pripiski*), affecting the measures of the level of regional output (Harrison 2009). No wonder that with the start of new Russian recentralization in 2000s, such Soviet practices have been restored in relation to Russian contemporary elections. As a result, the federal and regional elections were transformed into "electoral type events", characterized by demonstration of loyalty with electoral "pripiski" rather than real elections with electoral accountability of rulers to the citizens. As a result, the presence of electoral frauds became a basic signaling mechanism of

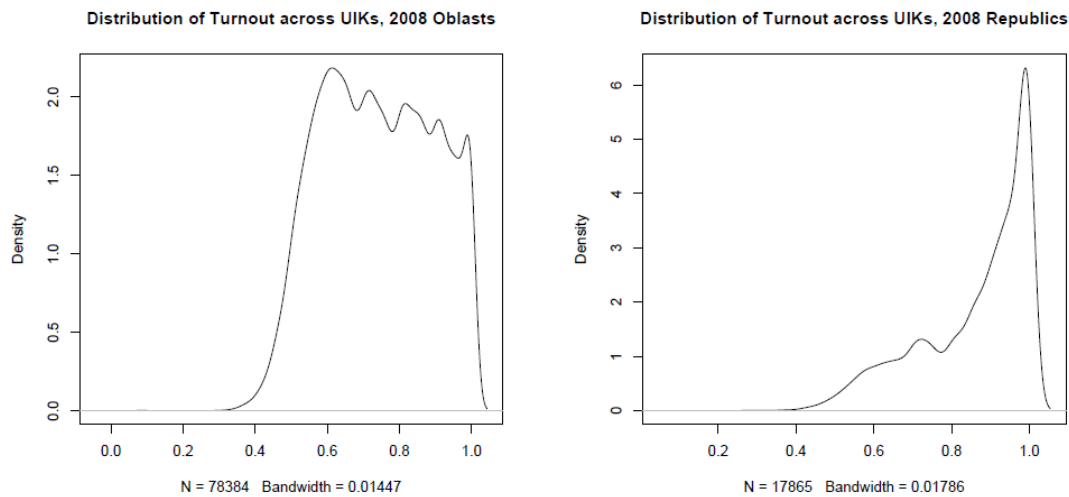
regional bosses' loyalty and their ability to control the administrative resources to Kremlin's benefit. According to Gel'man "the compromise between the federal and local leaders, achieved on the basis of the scheme "monopoly control on power in exchange for the 'correct' results in the elections" was the most important part of Russia's subnational authoritarianism" (Gel'man 2009). The growth of electoral manipulations and crude falsifications, their widespread systematic pattern can be referred to as "mass administrative electoral technology" (Buzin, Lubarev 2008).

Electoral signaling can be readily detected by analyzing the percentages of electoral outcomes. If electoral signaling occurs, electoral 'pripiski' are most likely to take place with rounded percentages of turnout, which is the easiest and most readily detected way to report basic information to superiors. In such case, favorable percentages are first sent down from Kremlin to the regional elections commissions, which pass this information further down to the territory-level commissions and, finally, precincts. Since the territory level commissions serve as an intermediate body between regional and precinct level commissions, we suppose that it has the highest leverage to produce faked numbers in the system and report them to the upper level in percentages. Thus, we expect numeric anomalies with percentages to be detected at both tiers of the system, i.e. precincts and territory levels.

Both the level of turnout and level of electoral support has been important indicators of the regime's sustainability and consistency. In our previous research as well as in Buzin and Lubarev (2008, Appendix, Illustration 38) there is strong empirical evidence about the presence of anomalies in the distribution of turnout in the most recent electoral cycle (2007-2008) compared to (2003-2004). As it's shown in Figure 1. (Mebane, Kalinin 2009), by displaying kernel density estimates we found the presence of spikes for oblasts at locations corresponding to the excess of turnout figures at values of 70%, 80% and 90% noticed by Shpilkin and Shulgin (Buzin and Lubarev 2008, 201). Moreover, for both oblasts and republics there is a spike of precincts with turnout at or very near 100 percent for each year with a higher proportion of precincts in the republics than in the oblasts having this feature. In the distribution for oblasts, spikes are apparent at round number percentages of turnout above 60%. The only acceptable explanation for the spiked distributions is a wide-spread adjustment of turnout to specific "rounded" figures.

Moreover, the analysis of the last digits of turnout counts (Beber and Scacco 2008) showed there are always too many zeros, with one exception too few nines, and usually too many fives. As one moves from 2003 to 2008 the fakery with turnout seems to be much worse at the end of the time period than at the beginning.

Figure 1. Distribution of turnout (%) across precincts for 2008 in Republics and oblasts.



The prevalent “signaling” mechanism raised a fundamental problem for the new political regime: regional elites after being co-opted by the Center were inclined to exploit the existing asymmetry in distribution of information between the Center and themselves for their own benefit, by systematically distorting information in their best interests, including electoral information. Demonstration of political loyalty, in exchange for no interference on the part of the center has led to greater informational asymmetry between the regions and the Center, making the Center unable to separate the types of the heads of the regions – who is really supportive of the regime and who is not but is successfully faking their support.

Additional political control over the governors was insured with the creation of the party of power, i.e. Unity/United Russia, that was designed to provide strong incentives for elite coordination and generating mechanisms for sanctioning defectors (Smyth 2007:123). The governors were expected to demonstrate their loyalty to United Russia and mobilize both administrative and financial resources of their regional apparatus to help United Russia to win the elections prior to presidential elections (Buzin, Lubarev 2008). After

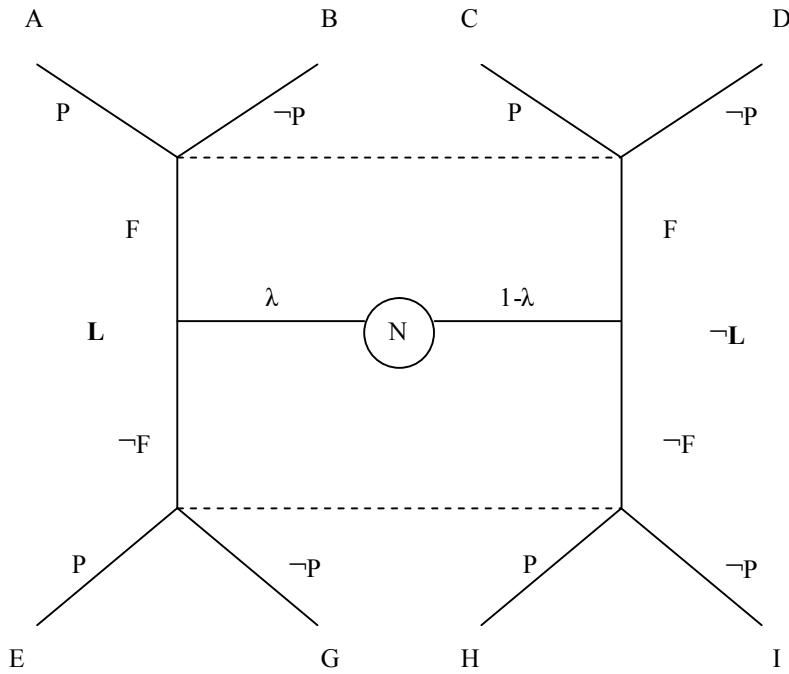
gubernatorial elections were abolished in December 2004, by the spring of 2007, 70 of 85 governors announced their participation in the party of power (Gel'man 2007). The practice was to head the party lists of United Russia, when a governor would head the party list as a poster candidate, helping the party to win more seats, but retreat as soon as elections end (Tkacheva 2009). This not only helped to gain greater electoral support for United Russia in the regions, but also signaled about governor's loyalty and capability to provide electoral results for more crucial presidential elections, which usually followed parliamentary elections.

Hence, the nature of fraudulent electoral results can be explained by the presence of signaling games between the regions and the Center. The fraudulent electoral results display the extent to which favorable electoral results can be delivered by the regional elites to display their loyalty to the Center in exchange administrative and financial rewards.

Formal Modeling

Consider the signaling game represented by the diagram in Figure 2. Here N denotes a random move by Nature to produce a first player (the governor) who is either loyal (L) or not ($\neg L$). Then $Prob(L) = \lambda$, and the $Prob(\neg L) = 1 - \lambda$. In the election the governor then either commits fraud (F) or not ($\neg F$). Player 2 (the center) does not know whether the governor is loyal, but the center does observe the governor's move. The center then either punishes (P) or not ($\neg P$).

Figure 2. Game Diagram



The payoffs are given in Table 1. The interpretation of the symbols used in the payoff definitions is as follows.

Table 1. Signaling Game Payoffs

symbol	governor	center
A	$-w - p$	$v - p$
B	$-w + t$	$(b - 1)t + v$
C	$-w - p$	$v - p + d$

D	$-w + (b + 1)t$	$v - t$
E	$-p$	$-p$
G	T	$(b - 1)t$
H	$-p$	$-p + d$
I	$(b + 1)t$	$-t$

- $w \geq 0$ is the value of electoral punishment by voters for fraud committed in the election;
 $w > 0$ in years before elections are abolished, and $w = 0$ in 2004 and later;
- $p \geq 0$ is the value of punishment imposed by the center;
- $v \geq 0$ is the value of excess votes produced by fraud;
- $t \geq 0$ is the value of transfers from the center to the governor;
- b is a coefficient that when multiplied by t gives the present discounted value of the future expected to be produced by a transfer; this may be positive or negative;
- $d \geq 0$ is the value to the center of replacing a disloyal governor.

Here are some comments to further explain the payoffs. Given equivalent actions by the center, fraud is always worse for the governor due to the sanction from voters. That is, if the governor is loyal and the center always punishes, then playing F gives the governor a payoff of $-w-p$ while playing $\neg F$ gives $-p$. If there is no sanction from voters, $w = 0$, then F and $\neg F$ give the governor the same payoff given an identical response from the center. The payoffs to the governor from F are always w subtracted from the corresponding payoff from $\neg F$.

If fraud happens, the center always gains excess votes v . If the center doesn't punish, then the governor always gains a transfer from the center, t , which costs the center $-t$. If the center punishes, then the governor always loses $-p$ which also costs the center $-p$. But if a disloyal governor is punished (e.g., fired), then the center gains d .

One key difference between a loyal governor and a disloyal one is who retains any future surplus generated by a transfer from the center. Compare the payoffs when a loyal governor commits fraud and is not punished to the payoffs when a disloyal governor commits fraud and is not punished: the difference is that the term bt is added to the

center's payoff in the former case but is added to the governor's payoff in the latter case. A similar situation holds when the governor does not commit fraud and is not punished: the disloyal governor retains the surplus while with a loyal governor the center retains the surplus.

We represent the game in multiagent normal form. To facilitate doing that, we relabel the moves as shown in Figure 2. The strategies of the loyal governor are now denoted F_1 and $\neg F_1$ while the disloyal governor's strategies are F_2 and $\neg F_2$. The center's strategies are now P_1 and $\neg P_1$ if acting after fraud and are P_2 and $\neg P_2$ if acting after no fraud.

The multiagent strategic normal form of the game appears in Table 2.

We test necessary conditions to be a perfect Nash equilibrium for a subset of the set of possible pure strategy equilibria. The strategy profiles, the results of testing whether

Table 2. Game in Multiagent Strategic Normal Form

		P_2	
		P_1	$\neg P_1$
F_1	F_2	$-w - p,$ $v - p + (1 - \lambda)d$	$-w + t[I + b(1 - \lambda)],$ $v - t(\lambda b - 1)$
	$\neg F_2$	$-\lambda w - p,$ $\lambda w - p + (1 - \lambda)d$	$-p(1 - \lambda) - \lambda(w - t),$ $\lambda[(b - 1)t + v] + (1 - \lambda)(d - p)$
$\neg F_1$	F_2	$-(1 - \lambda)w - p, -p + (1 - \lambda)(v + d)$	$-\lambda p + (1 - \lambda)[(b + 1)t - w],$ $-\lambda p + (1 - \lambda)(v - t)$
	$\neg F_2$	$-p, -p + (1 - \lambda)d$	$-p, -p + (1 - \lambda)d$

		$\neg P_2$	
		P_1	$\neg P_1$
F_1	F_2	$-w - p, v - p + (1 - \lambda)d$	$-w + t[I + b(1 - \lambda)], v - t(\lambda b - 1)$
	$\neg F_2$	$-\lambda(w + p) + (1 - \lambda)(b + 1)t, \lambda(v - p) - (1 - \lambda)t$	$-\lambda w + t[I + (1 - \lambda)b], \lambda v + (\lambda b - 1)t$
$\neg F_1$	F_2	$-\lambda(w + p) + (1 - \lambda)t, \lambda(b - 1)t + (1 - \lambda)(v - p + d)$	$t[I + (1 - \lambda)b] - (1 - \lambda)w, (1 - \lambda)v + (\lambda b - 1)t$

$\neg F_2$	$-p, \lambda(b - 1)t - (1 - \lambda)t$	$t[1 + (1 - \lambda)b], (\lambda b - 1)t$
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the profile can be an equilibrium and a brief description of the requirements for the profile to be an equilibrium appear in Table 3.

Only two of the eight pure strategy profiles tested can sometimes be equilibria. A separating equilibrium— $(F_1, \neg F_2, P_1, \neg P_2)$ —can exist only when the future returns expected from transfers are negative, meaning $b < 0$. In this equilibrium the loyal governor commits the fraud and is punished, keeping the center from receiving the loss-making transfer: the punishment payoff to the Center after (F, P) is $v - p$ as opposed to a payoff after $(F, \neg P)$ of $(b - 1)t + v$ which would be negative if v is small enough and if $(b - 1)t < 0$ after $(\neg F, \neg P)$. Only a pooling equilibrium— $(F_1, F_2, \neg P_1, P_2)$ —exists when the expected returns are positive. Having $t = 0$ is compatible with $(F_1, F_2, \neg P_1, P_2)$ being an equilibrium only if $p > 0$. Otherwise $t > 0$ is necessary for this pooling equilibrium to exist. But if punishments are big enough, a pooling equilibrium also exists when the transfer is loss-making: in this case $p = w - t + \zeta$ for some $\zeta > 0$, so that $b > -\zeta/t$ as is required in equilibrium can define a very negative bound when ζ is large.

The complete set of necessary conditions (apart from beliefs) for each of these equilibria are in Table 4.

Table 3. Some Equilibrium Tests

set	equilibrium?	requires
$(F1, F2, \neg P1, \neg P2)$	<i>never</i>	$0 > \lambda w$
$(F1, F2, \neg P1, P2)$	<i>sometimes</i>	$bt > (w - p) - t$, etc.
$(F1, \neg F2, \neg P1, P2)$	<i>never</i>	$b > b + 2$
$(F1, \neg F2, P1, P2)$	<i>never</i>	$0 > \lambda w$
$(F1, \neg F2, P1, \neg P2)$	<i>sometimes</i>	$b < 0$, etc.
$(F1, \neg F2, \neg P1, \neg P2)$	<i>never</i>	$0 > \lambda w$
$(\neg F1, \neg F2, \neg P1, \neg P2)$	<i>never</i>	$0 > (1 - \lambda)v$
$(\neg F1, \neg F2, P1, P2)$	<i>never</i>	$0 > \lambda v$

For the profile $(F_1, F_2, \neg P_1, P_2)$, the condition $t[1 + b(1 - \lambda)] > -p$ implies that $t > 0$ if $p = 0$. From $bt > (w - p) - t$ we have that if $p > w$ then t may be zero; if $t = 0$ the

value of b doesn't matter, otherwise $b > (w - p)/t - 1$. Notice that this equilibrium can exist even when $w = 0$ and, if $t > 0$ and either v or d are positive, $p = 0$. d can be zero only if $(1 - \lambda b)t > p$.

For the other equilibrium profile, $(F_1, -F_2, P_1, -P_2)$, the condition $-bt > p - t > d$ implies $b < 0$, $t > 0$ and $p > 0$. Indeed, $p > t + d$: for this equilibrium to exist, the value of punishment from the center must be greater than the value of transfers from the center. In this equilibrium v , d and w can all be zero.

Table 4. Equilibrium Necessary Conditions

<i>Set</i>	<i>conditions</i>
$(F_1, F_2, -P_1, P_2)$	$bt > (w - p) - t$ $v + p + d > t > w - p$ $bt > t - (v + p)$ $(1 - \lambda)d > p + t(\lambda b - 1)$ $t[1 + b(1 - \lambda)] > -p$
$(F_1, -F_2, P_1, -P_2)$	$-bt > p - t > d$ $v - bt > p - t > v + d$ $(1 + \lambda)p > -(1 - \lambda)(b + 1)t$ $(1 + \lambda)p - \lambda w > -(1 - \lambda)(b + 1)t$

Contrasting the conditions $d > t - p - v$, which is required for $(F_1, F_2, -P_1, P_2)$ to be an equilibrium, and $p - t > d$, which is required for $(F_1, -F_2, P_1, -P_2)$ to be an equilibrium, shows that with p and t fixed, increasing d can create the conditions for the first equilibrium while eliminating the conditions for the second equilibrium.

Mostly we avoid discussing the beliefs needed to support these equilibria, because the analysis is not sufficiently far advanced to support discussion of behavior off the equilibrium path. But the necessary conditions in Table 4 do imply some restrictions on beliefs about λ .

For the profile $(F_1, F_2, -P_1, P_2)$ to be an equilibrium, λ must satisfy

$$d + bt \begin{cases} < 0 \text{ implies } \lambda > (d + t - p)/(d + bt) \\ = 0 \text{ implies } \lambda \in [0; 1] \text{ only if } d + t - p > 0 \\ > 0 \text{ implies } \lambda < (d + t - p)/(d + bt) \text{ only if } d + t - p > 0 \end{cases} \quad (1a)$$

$$bt \begin{cases} < 0 \text{ implies } \lambda > 1 + (p + 1)/(bt) \\ = 0 \text{ implies } \lambda \in [0; 1] \text{ only if } p + (1 + b)t > 0 \\ > 0 \text{ implies } \lambda < 1 + (p + 1)/(bt) \text{ only if } p + (1 + b)t > 0 \end{cases} \quad (1b)$$

Given $d \geq 0$, $d + bt < 0$ only if $bt < 0$, so if $d + bt < 0$ then feasible values for λ exist only if both $\lambda > (d + t - p)/(d + bt)$ and $\lambda > 1 + (p + 1)/(bt)$ are true. When $bt > 0$, the corresponding upper bound on λ is greater than 1, so the restriction on λ reduces to $\lambda < (d + t - p)/(d + bt)$.

For the profile $(F_1, \neg F_2, P_1, \neg P_2)$ to be an equilibrium, λ must satisfy

$$p - (b + 1)t \begin{cases} < 0 \text{ implies } \lambda < -[p + (b + 1)t]/[p - (b + 1)t] \\ = 0 \text{ implies } \lambda \in [0; 1] \text{ only if } p - (b + 1)t > 0 \\ > 0 \text{ implies } \lambda > -[p + (b + 1)t]/[p - (b + 1)t] \end{cases} \quad (2a)$$

$$p - (b + 1)t - w \begin{cases} < 0 \text{ implies } \lambda < -[p + (b + 1)t]/[p - (b + 1)t - w] \\ = 0 \text{ implies } \lambda \in [0; 1] \text{ only if } p - (b + 1)t - w > 0 \\ > 0 \text{ implies } \lambda > -[p + (b + 1)t]/[p - (b + 1)t - w] \end{cases} \quad (2b)$$

To allow a feasible value of λ when either $p - (b + 1)t < 0$ or $p - (b + 1)t - w < 0$, we must have $p + (b + 1)t < 0$, implying $b < -(p/t + 1)$ (because $t > 0$). The condition $-bt > p - t > d$ already implied $b < (1 - p/t)$. Since $1 - p/t > -(p/t + 1)$, the effective bound is $b < -(p/t + 1)$. Because $w \geq 0$, $p - (b + 1)t - w > 0$ only if $p - (b + 1)t > 0$. If both $p - (b + 1)t - w > 0$ and $p - (b + 1)t > 0$, then $p + (b + 1)t > 0$ simply allows $\lambda \in [0, 1]$. But if $p - (b + 1)t > 0$ while $p - (b + 1)t - w < 0$ then $-[p + (b + 1)t]/[p - (b + 1)t - w] < \lambda < -[p + (b + 1)t]/[p - (b + 1)t]$ can be true only if $p + (b + 1)t > 0$.

Our theoretic expectations from formal modeling

According to our model, two parameters are central to our understanding of why specific equilibria hold and why the shift from the “pre-electoral bargaining” equilibrium of the 1990s to “electoral signaling” of the 2000s occurs. These parameters are d , the value to the center of replacing a disloyal governor, and b , the future returns expected to be produced by a transfer.

For the 90s the separating equilibrium best describes political decentralization/regionalization, when some governors were more likely to be involved in fraud than others. Results from formal modeling suggest that during 1996-2000 loyal governors applied strategies in which they committed frauds and were punished compared to disloyal governors, who were not interested in committing frauds and did not get punished. These strategies were rational if a set of conditions was satisfied: $b < 0$, $d = 0$, $w = 0$, $p - t > d$. Condition $b < 0$ implies negative future returns from transfers. In reality, Center was not interested in directing transfers to the regions due to rising levels of political opportunism in the regions, on the other hand, the governors were not interested in transfers, since such bargaining based on the future could put unwanted constraints on establishment of their regional political regimes. Because governors were elected in regional elections, the Center couldn't easily dismiss elected governors. Therefore, because these elections were allowed to occur, we conclude that the loyalty of governors understood as a direct subordination was not valued by the Center during the 90s. Hence $d = 0$. Therefore, the governors were interested in establishing their political regimes, which would be isolated from effects of the Center. Additional condition $p - t > d$ implies that a region that defected from cooperation could be brutally punished. The war in Chechnya is an example of such punishment. Hence, our theoretical expectations for the 1990s is that majority of the regions would prefer to commit frauds and the Center would punish them.

A move by the governors from bargaining strategies of the 1990s to signaling strategies of the 2000s is explained by changing conditions. Abolition of gubernatorial elections reflects an increase in d : demand for greater loyalty of governors to the Center. This caused the shift from the separating equilibrium that held in the 1990s to the pooling equilibrium of the 2000s. The increase in d reflects how local “political machines” have been coopted into the power vertical. This caused the governors to use different strategies

than before --- both types of the governors were now committing frauds, and the Center would not punish any governors who committed frauds. The pooling equilibrium explains how both loyal and disloyal governors would prefer to commit frauds and hide their real types from the Center. By doing this they would avoid punishment and get transfers, transfers that might have positive future returns for the Center if $b > 0$. Thus, our theoretical expectations for the 2000s is that majority of the regions would prefer to commit frauds to avoid punishment and get their rewards in transfers.

Data sources and empirical models

The data used in this research was taken from multiple sources: the data on financial transfers for different periods was kindly provided by Daniel Treisman and Andrei Starodubtsev. The data on governor's affiliation with United Russia in 2003 and 2008 was kindly given by Olesya Tkacheva, the governors affiliation with Unity was taken from Republics (2000). The electoral data for 1996 and 2000 presidential elections was sent to us by Alexei Sidorenko. The electoral data for 2004 and 2008 was obtained from the website of Russian Central Elections Commission (<http://www.cikrf.ru>). Other data was collected by the authors from the databases of Federal State Statistics Service and the websites of regional administrations.

To test our hypotheses about the presence of pooling and separating equilibria, we construct two basic empirical models.

Pre-electoral bargaining model

The pre-electoral bargaining model is a logit regression model, measuring effects of various pre-electoral factors on electoral frauds. The number of variables varies across years, depending on data availability. The dependant variable is computed at the territory level across all the elections. For 2004 and 2008 presidential elections electoral frauds are measured at both the precinct level and the territory level, and are used in two separate models. The basic estimated pre-electoral bargaining model is:

$$\text{Logit}(\text{Frauds Index}) = b_0 + b_1 \text{Bilateral Treaty} + b_2 \text{Governor UR} + b_3 \text{Republics} + \\ + b_4 \text{Gross Regional Product} + b_5 \text{Elected} + b_6 \text{Appointed} + b_7 \text{Transfers} \quad (1)$$

where: *dependant variable is “Frauds Index”* – a dummy variable with “1” - if there are 0s or 5s in the last digit of percent of turnout across territories (precincts) and “0” for other digits. A group of independent variables includes *“Bilateral Treaty”* – a dummy variable, measuring if the regions signed a bilateral treaty by the year of elections: “1” is signed, “0” otherwise. *“Governor UR”* – a dummy variable, measuring if a governor openly supported Unity/United Russia “1” after 1999 parliamentary elections, “0” otherwise. *“Republics”* - a dummy variable, measuring if a region belongs to Republic “1” or not “0”. *“Gross Regional Product”* – an interval variable measuring gross regional product a year before the elections (divided by one million). *“Elected”* – a dummy variable with “1” if the governor was elected a year before the elections, and a pre-electoral period of the same year elections take place. *“Appointed”* – a dummy variable with “1” if the governor was appointed a year before the elections, and a pre-electoral period of the same year elections take place. *“Transfers”* – an interval variable measuring the amount of transfers per 10000 people allocated to the region: it accounts for a year before the elections and an electoral year (divided by one million).

Post-electoral signaling model

The post-electoral model is measured by three separate statistical models with different dependant variables: OLS for transfers, and both logit models accounting for whether a new governor was elections or appointed after elections. The data for all post-electoral models was aggregated to the regional level. Specifically, two separate models account for electoral frauds aggregated from territory and precinct levels.

Hence, our three basic models are:

$$\begin{aligned} Transfers = & b_0 + b_1 Bilateral Treaty + b_2 Governor UR + b_3 Republics + b_4 Gross Regional Product + \\ & + b_5 Turnout + b_6 Incumbent + b_7 Fraud0s + b_8 Fraud5s \end{aligned} \quad (2)$$

$$\begin{aligned} logit(Elected) = & b_0 + b_1 Bilateral Treaty + b_2 Governor UR + b_3 Republics + b_4 Gross Regional Product + \\ & + b_5 Turnout + b_6 Incumbent + b_7 Fraud0s + b_8 Fraud5s \end{aligned} \quad (3)$$

$$\begin{aligned} logit(Appointed) = & b_0 + b_1 Bilateral Treaty + b_2 Governor UR + b_3 Republics + b_4 Gross Regional Product + \\ & + b_5 Turnout + b_6 Incumbent + b_7 Fraud0s + b_8 Fraud5s \end{aligned} \quad (4)$$

where dependant variables are: “Transfers” – an interval variable accounting for the amount of transfers per 10000 people allocated to the region two years after the elections (for 2008 presidential elections, transfers from 2009 are only considered). “Elected” – a dummy variable with “1”, if the governor was elected to his office during the remaining period of electoral year and a year after. “Appointed” – a dummy variable with “1”, if the governor was appointed during the remaining period of electoral year and a year after.

Independent variables in three equations include: “Bilateral Treaty” – a dummy variable, measuring if the regions signed bilateral treaty by the year of elections: “1” is signed, “0” otherwise. “Governor UR” – a dummy variable, measuring if a governor openly supported Unity/United Russia “1” during 1999, 2003 and 2007 parliamentary elections, “0” otherwise. “Republics” – a dummy variable, measuring if a region belongs to Republic “1” or not “0”. “Gross Regional Product” – an interval variable measuring gross regional product a year after elections. “Turnout” – percent of turnout in the region. “Incumbent” – percent of incumbent’s electoral support in the region. “Frauds 0s” – percent of territories/precincts with 0s in the last digit of percent of turnout across territories (precincts) in a given region. “Frauds 5s” – percent of territories/precincts with 5s in the last digit of percent of turnout across territories (precincts) in a given region.

Empirical Results

Our analysis of 1996 presidential elections provides empirical evidence in support of our claim that pre-electoral bargaining could be the case in the mid-90s. According to the findings for the first round of presidential elections, among the significant factors which affected the level of frauds in the territories were: whether the region belonged to Republics or not 0.063 (0.022) and governors’ appointments before 1996 elections 0.049 (0.024) (See Table 5).

Table 5. Results from Presidential elections 1996. Pre-electoral period. Territory Level.

	1 round		2 round	
<i>Variables</i>	<i>Dependant variable: Frauds 1996/1(Territ)</i>		<i>Dependant variable: Frauds 1996/2</i>	
	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>
<i>(Intercept)</i>	0.162	0.021	0.180	0.021
<i>Bilateral 1996</i>	-0.019	0.018	0.008	0.018
<i>Republics</i>	0.063	0.022	-0.029	0.022
<i>GRP 1996</i>	1.294	1.759	2.490	1.756
<i>Transfers 1995-1996</i>	0.003	0.011	-0.023	0.011
<i>Appointed 1995-1996</i>	0.049	0.024	-0.031	0.024
<i>Elected 1995-1996</i>	0.002	0.029	0.018	0.029
	N=2647		N=2641	

For the second round of presidential elections the only significant variable was the level of transfers to the region $-0.023(0.011)$, suggesting that the greater was the amount of transfers directed to the region the less it was inclined to provide the center with the fraudulent turnout (See Table 5). Thus, for 1996 presidential elections some elements of bargaining strategies were observed: first, unsurprisingly Republics with greater bargaining leverage compared to oblasts were more likely to commit electoral frauds with turnout; second, presidential appointments one a half year before the elections were conducive to the growth of manipulations with turnout.

Table 6. Results from Presidential elections 1996. Post-electoral period. Territory Level.

	1 round				2 round			
<i>Variables</i>	<i>Dependant variable: Transfers 1997</i>		<i>Dependant variable: Elections 1996-1997</i>		<i>Dependant variable: Transfers 1997</i>		<i>Dependant variable: Gubernatorial Elections 1996-1997</i>	
	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>
<i>(Intercept)</i>	1.454	3.363	5.798	6.996	2.257	2.732	8.78	6.387
<i>Bilateral 1996</i>	-0.525	0.395	0.063	0.643	-0.575	0.352	-0.071	0.660
<i>Republics</i>	0.579	0.415	-2.123	0.925	0.439	0.381	-2.499	0.930
<i>Yeltsin %</i>	2.169	1.862	-1.154	2.84	3.446	1.519	0.421	3.065
<i>GRP 1997</i>	15.657	26.397	-131.016	92.08	8.934	23.916	-207.153	110.378
<i>Turnout %</i>	-2.154	4.519	-5.411	8.832	-2.331	3.648	-8.657	8.102
<i>Fraud 0s(Territory)</i>	4.077	2.984	0.690	4.831	-7.787	3.232	-13.126	6.751
<i>Fraud 5s(Territory)</i>	-1.838	2.919	-5.719	5.194	-7.529	2.572	-0.411	4.669
	N=77		N=77		N=77		N=77	

Analysis of the post-electoral model in Table 6. suggests the presence of partial post-electoral bargaining: the larger was the share of votes received by Yeltsin in the second round, the larger amount of transfers was allocated to the region later $3.446(1.519)$.

However, a greater supply of electoral frauds negatively affected the amount of transfers. This observation confirms the idea that the governor could be financially punished after elections if fraud occurred: the proportion of the territories with 0s and 5s in the region had a negative effect on the size of transfers $-7.787(3.232)$, $-7.529(2.572)$. This observation additionally support our theoretical expectations about the presence of separating equilibrium during the 90-s. This confirms Treisman's finding about the distribution of transfers by the Center among less loyal regions as well as our game-theoretic expectations.

Electoral punishment of those governors who manipulated with turnout at the territory level was significantly negative $-13.126(6.751)$. This provides us the evidence that such manipulations with the turnout were left unpunished by the voters. Most likely, during the 1990s most of the governors could mobilize their "political machines" during regional elections to avoid electoral punishment related to frauds from the voters. Another significant factor, which is worth mentioning here: the heads of Republics seemed to be less likely to lose their office compared to oblasts $-2.499(0.930)$, which can be also explained by their greater success in mobilization of "political machines" compared to Russian oblasts. Finally, gross regional product significantly affected the probability of political survival of the governor: the richer was the region the less likely was governor's reelection $-207.153(110.378)$.

Contextual specifics of the 2000 presidential elections with Yeltsin's sudden resignation and Vladimir Putin's take over, considerably affected pre-electoral bargaining and electoral signaling strategies of the governors. The unexpected Yeltsin's resignation for the regional elites, together with Putin's high ratings weakened the presence of bargaining between the Center and the regions. The results obtained from analysis of 2000 demonstrate the absence of bargaining strategies during this period – all factors in the model are insignificant (*See Table 7.*). However, in the post-electoral model governor's political affiliation with Unity during 1999 State Duma elections had a positive effect on the size of transfers allocated to the region $0.056(0.028)$. In other words, governor's demonstration of open loyalty by support of Unity was later rewarded by larger amount of financial inflows to the region.

Table 7. Results from Presidential elections 2000. Pre-electoral period. Territory Level.

<i>Variables</i>	<i>Dependant variable: Frauds 2000 (Territory level)</i>	
	Coef.	S.E.
<i>(Intercept)</i>	0.180	0.017
<i>Governor in UR</i>	0.018	0.019
<i>Bilateral 2000</i>	0.006	0.017
<i>Republics</i>	-0.008	0.021
<i>GRP 1999</i>	0.165	0.427
<i>Transfers</i>	0.001	0.002
<i>Elected before2000</i>	-0.020	0.028
	N=2649	

Table 8. Results from Presidential elections 2000. Post-electoral period. Territory Level.

<i>Variables</i>	<i>Dependant variable: Transfers 2001</i>		<i>Dependant variable: Gubernatorial Elections 2001</i>	
	Coef.	S.E.	Coef.	S.E.
<i>(Intercept)</i>	-0.092	0.178	1.397	5.540
<i>Republics</i>	0.020	0.029	-0.717	0.870
<i>Governor Unity</i>	0.056	0.028	0.223	0.642
<i>Bilateral 2000</i>	-0.036	0.025	0.571	0.625
<i>Putin %</i>	0.222	0.145	1.210	3.577
<i>GRP 2001</i>	0.233	0.460	3.326	9.771
<i>Turnout %</i>	0.009	0.286	-6.706	8.493
<i>Fraud 0s (Territory)</i>	-0.123	0.205	-1.432	4.941
<i>Fraud 5s (Territory)</i>	0.338	0.236	9.495	5.986
	N=69		N=77	

Compared to the previous periods, in 2004 presidential election signaling strategies started playing a greater role along with the bargaining. First, at the territory level covariates of the pre-electoral model seemed to have no significant affect on electoral anomalies (*See Table 9*). However, at the precinct-level the bargaining pattern was most distinctive: the frauds indicator measured at the precinct level illustrates that all covariates were significant and positively affected anomalies in turnout: status of Republic 0.067 (0.004), governors heading United Russia's party list 0.034 (0.003), the amount of transfers 0.367 (0.032), finally, the richer was the region the more likely it was that electoral fraud would occur 0.112 (0.031) (*See Table 10*). These findings match out theoretical expectations about the presence of pooling equilibrium.

Table 9. Results from Presidential elections 2004. Pre-electoral period. Territory Level.

<i>Variables</i>	Dependant variable: Frauds 2004 (Territory Level)	
	Coef.	S.E.
<i>(Intercept)</i>	0.166	0.015
<i>Governor UR 2003</i>	0.018	0.016
<i>Republics</i>	-0.007	0.020
<i>GRP 2003</i>	0.044	0.158
<i>Transfers 2003-2004</i>	0.118	0.106
<i>Elected 2003-2004</i>	-0.008	0.032
	N=2635	

Table 10. Results from Presidential elections 2004. Pre-electoral period. Precinct Level.

<i>Variables</i>	Dependant variable: Frauds 2004 (Precinct Level)	
	Coef.	S.E.
<i>(Intercept)</i>	0.189	0.003
<i>Governor UR 2003</i>	0.034	0.003
<i>Republics</i>	0.067	0.004
<i>GRP 2003</i>	0.112	0.031
<i>Transfers 2003-2004</i>	0.367	0.032
<i>Elected 2003-2004</i>	0.033	0.006
	N=92743	

The post-electoral model of signaling in 2004 elucidates that almost none of the factors included in the model significantly affected the dismissal of the governor within the next a year and half after the presidential elections, which offers support about the presence of pooling equilibrium during this period.

The frauds with 5s computed at the territory level positively affected probability of the governor being dismissed 12.960 (7.195), which partly refutes our assumptions about the presence of pooling equilibrium during the 2000s, suggesting that a separating equilibrium could be the case as well (See Table 11). The size of transfers directed to the region was positively affected by a number of factors: 0s in the frauds index at the level of territories 0.736 (0.151), Putin's electoral support in the region 0.432 (0.150). Transfers were negatively associated with the participation of the governors in United Russia's party list -0.066 (0.020). The strong effect of anomalies in turnout on the distribution of transfers supports our theoretical expectations about the presence of pooling equilibrium, in which all players benefit from frauds. However, significant positive effect of affiliation

with United Russia on the level of transfers might be interpreted as a meaningful factor supporting the presence of separating equilibrium. Since the close affiliation with United Russia doesn't necessarily imply that the governor would be necessarily inclined to manipulate with the turnout, it can be considered as a pre-signaling tool displaying readiness of the governor for loyalty. Thus governor's affiliation with United Russia can be viewed as an external factor in relation to our game-theoretic model. Governors' actions, which result in anomalies in turnout, however, serve as a signaling tool in his/her hands.

Thus, in the 2004 presidential elections the amount of frauds with turnout at the territory level positively affected the allocation of transfers to the region, however, participation in the United Russia party list reduced the amount of transfers. A simple interpretation for this finding is that larger amounts of transfers were directed to those regions, which either commit frauds with turnout, i.e. signal about their loyalty or to those leaders who were not openly loyal through their affiliation with United Russia, i.e. loyalty had to be purchased from non-loyal governors. This finding is partly supported by Starodubtsev's findings (Starodubtsev 2006).

Table 11. Results from Presidential elections 2004. Post-electoral period. Territory Level.

Variables	Dependant variable: Appointment 2004-2005		Dependant variable: Transfers 2004-2005		Dependant variable: Gubernatorial Elections 2004-2005	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
<i>(Intercept)</i>	-9.382	4.104	-0.231	0.090	-11.754	11.786
<i>Republics</i>	-1.717	1.497	0.004	0.027	-23.688	3081.563
<i>Governor UR 2003</i>	-0.390	0.793	-0.066	0.020	-0.221	1.201
<i>Putin, %</i>	8.755	6.903	0.432	0.150	14.514	12.976
<i>GRP 2005</i>	4.456	4.679	-0.002	0.150	-22.139	21.304
<i>Turnout, %</i>	-0.869	4.943	0.005	0.121	1.751	9.531
<i>Fraud 0s (Territory)</i>	6.369	6.024	0.736	0.151	-7.481	10.697
<i>Fraud 5s (Territory)</i>	12.960	7.195	-0.195	0.167	10.337	11.085
	<i>N=78</i>		<i>N=77</i>		<i>N=67</i>	

Table 12. Results from Presidential elections 2004. Post-electoral period. Precinct Level.

Variables	Dependant variable: Appointment 2004-2005		Dependant variable: Transfers 2004-2005		Dependant variable: Gubernatorial Elections 2004-2005	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
<i>(Intercept)</i>	-3.43	5.242	-0.040	0.130	-4.107	14.207
<i>Republics</i>	-2.279	1.788	0.022	0.029	-24.638	3000.260

<i>Governor UR 2003</i>	<i>-0.447</i>	<i>0.818</i>	<i>-0.068</i>	<i>0.021</i>	<i>0.020</i>	<i>1.168</i>
<i>Putin, %</i>	<i>7.425</i>	<i>6.911</i>	<i>0.153</i>	<i>0.164</i>	<i>18.004</i>	<i>14.699</i>
<i>GRP 2005</i>	<i>8.168</i>	<i>5.2</i>	<i>-0.048</i>	<i>0.166</i>	<i>-33.467</i>	<i>10.117</i>
<i>Turnout, %</i>	<i>3.405</i>	<i>5.235</i>	<i>-0.006</i>	<i>0.132</i>	<i>2.804</i>	<i>11.575</i>
<i>Fraud 0s (Precinct)</i>	<i>-12.969</i>	<i>7.681</i>	<i>0.500</i>	<i>0.162</i>	<i>-11.569</i>	<i>24.311</i>
<i>Fraud 5s (Precinct)</i>	<i>-45.165</i>	<i>25.450</i>	<i>-0.119</i>	<i>0.676</i>	<i>-84.383</i>	<i>55.444</i>
	<i>N=78</i>		<i>N=77</i>		<i>N=76</i>	

Results obtained from precinct level analysis of electoral signaling model is consistent with the evidence from territory level analysis: the amount of transfers allocated to the region is positively affected by the frauds index, suggesting that there was obvious signaling taking place at the precinct level *0.500 (0.162)* (See Table 12). And again, in 2004 a governor's participation in United Russia's party list had a negative effect on the size of transfers directed to the region *-0.068 (0.021)*, meaning that the Center was not interested in attaching financial rewards to open demonstration of loyalty to the governors who headed United Russia's party list, rather the awards were directed to non-loyal regions, i.e. the ones who didn't openly support United Russia. Moreover, the dismissal of the governor was less likely if manipulations with turnout happened at the precinct level: with frauds 0s *-12.969(7.681)* and frauds 5s *-45.165(25.450)*. The presence of a strong effect of electoral anomalies on the level of transfers and on the probability of the governor being dismissed on both levels (precincts' and territorial) provides us strong evidence about the presence of pooling equilibrium in the regions during the 2000s.

In 2008 the pre-electoral bargaining model with territory-level frauds as the dependent variable suggests both transfers and appointment were insignificant factors – thus, pooling equilibrium is supported by these findings (See Table 13). However, for the pre-electoral model with precinct-level frauds indicators included, anomalies in turnout seemed to be affected by almost all of the covariates (See Table 14). The anomalies were significantly affected by the status of the Republic *0.079 (0.004)*, the governor's participation in United Russia's party list *0.025(0.003)*, gross regional product *0.090(0.011)*, finally, whether the governor was elected 1.5 years before the elections *0.009(0.005)*. Compared to the 2004 election, in 2008 electoral frauds at the precinct level were no longer affected by material incentives (transfers), rather by all other factors, which adds to our argument about the decrease in pre-electoral bargaining strategies during the

2000s. Hence, the presence of pooling equilibrium is partly supported by precinct-level data: pre-electoral transfers and pre-electoral appointments are conducive to the frauds in the regions.

Table 13. Results from Presidential Elections 2008. Pre-electoral period. Territory Level.

Variables	Dependant variable: Frauds 2008 (Territory)	
	Coef.	S.E.
<i>(Intercept)</i>	0.206	0.019
<i>Governor in UR 2007</i>	-0.028	0.021
<i>Republics</i>	0.016	0.020
<i>GRP 2007</i>	0.007	0.005
<i>Transfers 2007-2008</i>	0.010	0.033
<i>Appointed 2007-2008</i>	-0.015	0.025
	<i>N=2598</i>	

Table 14. Results from Presidential Elections 2008. Post-electoral period. Precinct Level.

Variables	Dependant variable: Frauds 2008 (Territory)	
	Coef.	S.E.
<i>(Intercept)</i>	0.192	0.004
<i>Governor UR 2007</i>	0.025	0.003
<i>Republics</i>	0.079	0.004
<i>GRP 2007-2008</i>	0.090	0.011
<i>Transfers 2007-2008</i>	0.007	0.063
<i>Appointed 2007-2008</i>	0.009	0.005
	<i>N=92068</i>	

Further analysis of the post-electoral period offers the strongest support for the claim about the persisting presence of signaling strategies adopted by the governors during the 2000s. First, for the precinct level computed frauds, the only factor which significantly affected a governor's dismissal was his/her participation in United Russia's party list during 2007 parliamentary elections -1.691 (0.668) (See Table 15). In other words, in the most recent electoral cycle participation in United Russia's party list was the only factor of political survival for the governors. In 2008 as in 2007 the amount of transfers was positively affected by frauds with 0s. The only factor that seemed to affect the amount of transfers directed to the region was the level of fraudulent turnout in precincts $0.177(0.046)$, supporting our theoretic proposition about the presence of pooling equilibrium.

Table 15. Results from Presidential Elections 2008. Post-electoral period. Precinct Level.

<i>Variables</i>	<i>Dependant variable: Transfers 2008-2009</i>		<i>Dependant variable: Appointment 2008-2009</i>	
	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>
<i>(Intercept)</i>	-0.042	0.030	-2.961	3.438
<i>Republics</i>	-0.004	0.008	-1.078	1.055
<i>Governor UR 2007</i>	-0.011	0.007	-1.691	0.668
<i>Medvedev, %</i>	0.014	0.061	0.193	6.983
<i>Turnout, %</i>	-0.004	0.003	3.651	5.199
<i>GRP 2008</i>	0.029	0.044	-0.683	0.936
<i>Fraud 0s (Precinct)</i>	0.177	0.046	3.086	4.805
<i>Fraud 5s (Precinct)</i>	0.141	0.141	0.443	15.777
	<i>N=81</i>		<i>N=81</i>	

Table 16. Results from Presidential Elections 2008. Post-electoral period. Territory Level.

<i>Variables</i>	<i>Dependant variable: Transfers 2008-2009</i>		<i>Dependant variable: Appointment 2008-2009</i>	
	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>
<i>(Intercept)</i>	-0.051	0.033	0.327	3.771
<i>Republics</i>	-0.008	0.009	-2.436	1.420
<i>Governor UR 2008</i>	-0.004	0.007	-3.446	1.056
<i>Medvedev %</i>	0.079	0.066	-0.351	8.196
<i>Turnout %</i>	0.018	0.048	5.092	6.053
<i>GRP 2008</i>	-0.004	0.003	-1.130	0.965
<i>Fraud 0s (Territory)</i>	0.035	0.040	-30.283	9.581
<i>Fraud 5s (Territory)</i>	0.041	0.047	5.369	5.900
	<i>N=81</i>		<i>N=81</i>	

Anomalies in turnout at the territory-level seemed not to be significant for allocation of transfers to the regions (*See Table 16*). However, the political survival of the governor depended both on his participation in United Russia's party list -3.446 (1.056) and on his/her capacity to provide fraudulent turnout -30.283 (9.581). If a head of the region belonged to the Republic his political survival was higher compared to the governors of Russian oblasts -2.436(1.420). Hence, political survival of the governor positively depended on his/her participation in United Russia's party list, the status of the region and his/her ability to deliver fraudulent turnout figures.

For both the 2004 and 2008 elections our hypotheses about the presence of pooling equilibria were supported by our empirical evidence – both loyal and non-loyal governors would prefer to commit frauds and hide their real types from the Center, in order to avoid punishment and get transfers. An external factor, such as governor's affiliation with United

Russia served as a separating pre-signaling factor, which positively affected political survival of the governor.

Conclusion

Overall, our initial theoretical propositions about the presence of separating bargaining equilibrium during the 1990s and pooling signaling equilibrium are supported by our data. The results sometimes display a complex picture: during different periods some mixture of pooling and separating equilibria were possible. In our formal model, both equilibria can exist simultaneously if the future returns from transfers are expected to be negative ($b < 0$). The presidential election of 1996 seems to contain elements of bargaining in line with the separating equilibrium in our game – recently appointed governors and Republics were more likely to commit frauds with the turnout, but transfers seemed to act as a punishment rather than inducement. This supports our theoretical findings about the presence of separating equilibria during this period. The presidential election of 2000 reflects the patterns of political uncertainty: bargaining games were no longer influential, but the governor's signaling with his participation in the party of power Unity was the only important factor, preserving the inflows of transfers to the region. Both the 2004 and 2008 elections demonstrate that bargaining strategies couldn't be detected at the territory level, rather than at the precinct level with almost all of the factors being positively significant. For both years effects of frauds with the turnout have been detected at both territorial and precinct levels. This finding support our theoretical proposition for the 2000s, when the majority of the regions would prefer to commit frauds to avoid punishment and get their rewards with positive future return.

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