

BUDGET PRIORITIES IN HYBRID REGIMES: ELECTIONS AND THE EFFECT OF
CRISIS

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ABSTRACT

GUZEL GARIFULLINA: Budget priorities in hybrid regimes: elections and the effect of crisis

(Under the direction of Graeme Robertson.)

This research project uses public spending to approximate for policy decisions in hybrid regimes. I look at two specific kinds of challenges that may destabilize hybrids - and external economic crisis (in the same way it affects other regimes) and popular elections (which create uncertainty and a dual challenge from masses and elites to the incumbent's power). Starting from the well-developed research literature on regime survival, I argue that regime stability will depend not only on the severity and nature of challenge to the regime, but also on the response strategy adopted by the incumbent leader. Exploring response strategies through the lens of spending dynamics in the Russian regions in 2001-2014, I build and use a two-dimensional decision space, containing the trade-off between long-term (investment) and short-term (consumption) spending strategies, as well as redistribution between the elites and the mass groups in the short term. I show that the economic crisis is associated with a decrease of spending on supporting the economy and health care (long-term) and an increase of spending on social welfare (short-term). Elections are shown to have a positive effect on spending on the bureaucracy (elite) and a negative effect on mass social welfare programs. That supports the hypotheses that an economic crisis motivates redistribution to immediate needs, and leaders facing elections prefer redistribution to elite groups to ensure their support. Election competitiveness strengthens the latter effect. The proposed theory adds to our understanding of nondemocratic regime functioning and dynamics.

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INTRODUCTION

Hybrid regimes have become both a widespread political model and a popular research subject. By some evaluations, this term describes "roughly between one quarter and one third of all states" (Diamond 2002), - so it comes as no surprise that understanding policy process and choices made by them are crucial for our knowledge of the political world. Yet most of the internal mechanics eludes direct observation and is therefore hard to study. This research project uses public spending to approximate for policy trade-offs and decisions in hybrid regimes.

I start with the basic assumption that the regime tries to ensure its survival when considering policy options. Similar to Wright and Escriba-Folch (2012), I define regime survival as the situation when the same leader or elite stays in power as opposed to a situation when the current regime is replaced by a democratic one, or a rival non-democratic regime. As it has been shown in the studies of authoritarian regimes, challenges to regime survival can come from within (social change, popular protest, elite split - Geddes (1999), De Mesquita (2005)) and from outside (global economic crisis, diffusion and international pressure - Haggard and Kaufman (1997), Gleditsch and Ward (2006)). I look at two examples of challenges: external economic crisis and elections as an internal political challenge. Both have been extensively studied in the literature, yet the research delivers contradictory findings as to whether these factors contribute to regime stability or increase the probability of it falling.

At the first glance, implementing policies that promote economic development should be beneficial for the autocrat's survival. As Haggard and Kaufman (1997), Reuter and Gandhi (2011), Tanneberg, Stefes and Merkel (2013), among others, have demonstrated, non-democratic regimes are especially vulnerable during economic downturns¹. Therefore,

¹ Finkel, Muller and Seligson (1989) argue that this is not the case for democratic regimes

avoiding crises (or making them shorter and less profound) and providing stable economic development helps these regimes ensure their stability (see, for example Epstein, Bates, Goldstone, Kristensen and O'Halloran (2006)). From the other side, economic growth can have a destabilizing effect on a non-democratic regime. In accordance with modernization theory, economic development leads to social changes, differentiation in the political sphere, emergence of a more complex social structure, the rise of democratization demands among the population, and ultimately to democratization (Lipset 1959; Przeworski and Limongi 1997; Boix and Stokes 2003). These things being literally synonymous to regime destabilization, it is unclear what effect economic development would have on a hybrid regime.

Elections in nondemocratic regimes were once perceived as being a simple window dressing. Yet it was later demonstrated that they can have liberalizing (and thus destabilizing from the point of view of the incumbent) effect. Howard and Roessler (2006) show that even under restricted competition elections can lead bring a new, less authoritarian, government. Ekman (2009) shows how the probability of regime breakdown increases with the interaction between opposition parties and citizens. However, other authors argue that democratizing outcome is not that predetermined - even if authoritarian elections result in regime breakdown (Levitsky and Way 2010). Moreover, there is growing literature on the positive effects of such institutions as elections, parties or legislatures on nondemocratic regime stability. As demonstrated in recent research (Blaydes 2010; Gandhi and Lust-Okar 2009), elections can be used as a way to gather information about supporters, so that this information can be used to selectively reward and punish, effectively preventing both elite conflicts and popular protest.²

From this it becomes apparent that actual effect of economic development and elections on regime stability is more complex than it appears at first glance. I argue that one of the intervening factors will be the policies of the regime itself - more specifically, how the regime manages these challenges, which policy responses are adopted to face them. That

² Pop-Eleches and Robertson (2015) argue that elections in nondemocratic regimes play an informational role, and can lead to both deliberalization and liberalization depending on regime's transparency.

is, the contradictions above can be explained by the different reactions to economic and electoral challenges adopted by the regimes. I use budget spending to approximate specific policy priorities and explore how hybrid regimes respond to external economic crisis and the presence of popular elections of the leader.

Redistribution in favor of specific groups or policy objectives can be a powerful policy tool, creating incentives and ensuring support. It includes direct redistribution of transfers (to mass groups), redistribution through patronage (spending on elite groups) and long-term policies (investing in education), among others. I use subnational budget data from the Russian regions in 2001-2014. This allows me to exploit cross-regional variation in regime competitiveness as well as two time-specific variables: the absence of gubernatorial popular elections in the period 2005-2012 and world financial crisis of 2008-2009, while keeping context, historical and cultural variables constant. I find that in response to external economic crisis regional governments cut spending and concentrate on short-term policies supporting day-to-day operation and survival at the expense of long-term economic policies. Elections are associated with relative redistribution towards elite groups - that is, an increase in the share of budget spent on bureaucracy, which supports the hypothesis of the use of patronage in voter mobilization.

The major contribution this paper is offering to the studies of hybrid regimes is proposing a mechanism that links challenges to regime stability with response strategies chosen by the incumbent, a mechanism based on public spending. The proposed approach integrates various accounts of authoritarian and hybrid regime strategies, including such policy choices as economic development, public goods provision and repression, into one two-dimensional space. This allows us to better understand the dilemmas hybrid regimes face in the described situations, to explore the internal dynamics of hybrid regimes, the decisions they make and through that - to compare them with other types of regimes. Furthermore, it contributes to the studies on regime dynamics by focusing on regime's adaptive capacity and strategies.

Regime survival and policy responses

Nondemocratic regime dynamics

Before hybrid regimes became a highly studied (and more widespread) phenomenon, the issue of authoritarian regime survival has been extensively studied as part of democratization literature. Classic works paid attention to both endogenous and exogenous factors of survival.

Endogenous political challenges to authoritarian regimes can be further divided into those originating from within the elite groups and those coming from the masses. Bratton and Van de Walle (1992) demonstrate that popular protest has a positive effect on the probability of regime change. As proposed by De Mesquita (2005) and Magaloni and Kricheli (2010), the goals of an autocrat who wants to keep her position can be subdivided into ensuring the continuing support of elite groups and achieving the acquiescence of the masses. The use of specific instruments to face these challenges will depend on the source of the most pressing threat to stability – the elites or the masses, respectively (Svolik 2012). Besides political challenges, one can think of endogenous social or economic challenges, such as demographic changes or internal economic crises and their effect on regime survival (Lutz, Cuaresma and Abbasi-Shavazi 2010; Weber 2013; Remmer 1990; Gasiorowski 1995). Exogenous factors of regime instability include spillover effects (Starr and Lindborg 2003; Lankina and Getachew 2006; Gleditsch and Ward 2006), foreign influence/intervention (Finkel, Pérez-Liñán and Seligson (2007)³), or global economic crises (Pepinsky 2012).

Hybrid (or electoral authoritarian) regimes combine authoritarian and democratic practices for legitimation (Way and Levitsky 2002). Their proliferation on the international political arena (Schedler 2002) in the end of the 20th century attracted political scientists' attention and caused important debates in the field. One of them is the mere definition of the term. Thus, Diamond (2002) distinguishes "competitive authoritarian" or "hegemonic electoral authoritarian" hybrid regimes as being types of authoritarian regime. The level of

³ For how external influence can stabilize nondemocratic regimes - see for example the literature on "black knights" (Chou 2015; Tolstrup 2015)

competitiveness acts as the major criterion for this distinction. Developing the discussion, Gilbert and Mohseni (2011) propose a multidimensional approach to conceptualization, which identifies hybrid regimes as non-democratic and non-authoritarian. For the purposes of this project I define, very generally, a hybrid regime as a nondemocratic regime which has somewhat competitive elections at least at some levels of authority.

Hybrid regimes seem to face most of the same types of challenges as other nondemocratic regimes. Yet as relatively competitive elections are the major characteristic distinguishing them from purely authoritarian regimes, most authors focus on consequences of elections for hybrid regimes (Howard and Roessler 2006; Brownlee 2009; Blaydes 2010; Gandhi and Lust-Okar 2009).

I will therefore focus on elections as an example of internal political challenge to hybrid regime stability and an exogenous economic shock as an external challenge. An economic crisis is a threat to the masses' economic well-being, which creates social tension as more people require support while the state itself suffers from dropping levels of revenue. This represents a challenge to regime's output legitimacy and stability. Elections in nondemocratic regimes serve to demonstrate regime strength to citizens and elites, prevent elite splits and defection, monitor and motivate supporters (Pop-Eleches and Robertson 2015; Geddes 2005; Gandhi 2008). But besides all those benefits they are also a moment of uncertainty. The leader faces the simultaneous threat from organized opposition, masses, and the elite coalition itself, so ensuring necessary results and managing these challenges becomes crucial. This is especially true given the fact that the stakes are higher for autocratic leaders facing elections.

How regimes respond to challenges

To address these challenges, the incumbent must adopt response strategies. The existing research has either no or contradictory explanations of how these strategies actually work. I argue the adopted strategies will affect the outcome - in this case, regime resilience.

Many studies focus on how economic crisis influences authoritarian/hybrid regimes'

survival, but much less is known about the response of these regimes to the challenge⁴ . If the regime doesn't fall due to economic crisis, how does it manage to do so? As for elections, researchers argue that elections are used not just by the opposition to challenge the incumbent, but also by the regime itself to collect information and then apply additional strategies to selectively reward and punish both elites and masses (Blaydes (2010); Gandhi and Lust-Okar (2009)). Yet the specific ways these strategies are used are much harder to capture. Doing that would allow us to understand how the mechanism of nondemocratic elections works.

The general policy choices available to nondemocratic regimes have been studied before. Gandhi and Przeworski (2006) describe how authoritarian regimes use policy concessions (through institutions such as legislatures and parties) and distribution of spoils in order to survive. Escribà-Folch (2013) shows that the use of repression (such as political terror and restrictions on civil liberties) is a policy choice positively associated with authoritarian regime survival.

Hybrid regimes may have more policy choices available to them due to their dual nature (and includes, for example, electoral manipulation or co-optation of the opposition through elected legislatures), but is also facing restrictions unknown to authoritarian regimes. For example, as argued by Way and Levitsky (2002), policies available to incumbents in these regimes include "bribery, co-optation, and various forms of "legal" persecution". At the same time, Smith (2009) specifies that "tools employed by the electoral authoritarian regime depend on a number of factors related to nature of the regime and level of competition it faces". Higher regime competitiveness, freedom of speech, quality of organized political opposition can all restrict the leader's choice of policy instruments.

I argue that one of the important policy instruments available to any regime is public spending. I will speak more to this in the following sections, here I review some literature

⁴ There are studies of authoritarian economic policies and the likeliness of reform for the review, see Haggard and Webb (1993). They note the inconclusiveness on empirical findings. Coming from a different strand of literature, Pepinsky (2009) uses the cases of Indonesia and Malaysia and shows how the structure of elite coalitions based on the nature of assets influences adjustment policies during crisis and ultimately regime survival. His argument focuses on elite dynamics when explaining regime breakdown.

showing how states adapt their spending priorities in response to the two types of challenges I discussed earlier: economic crisis and elections.

The literature on public spending discusses adaptation to economic crisis among other factors influencing the choice between public investment and public consumption (see, for example, Beramendi, Häusermann, Kitschelt and Kriesi (2015)). Focusing on social policies, Beramendi et al. define social investment as "policies aimed at increasing people's capacity for future earnings", while social consumption contains "social expenditures aimed at immediate income restoration". On a sample of OECD countries, Breunig and Busemeyer (2012) demonstrate that when governments are facing difficult trade-offs due to fiscal stress, it is easier to cut discretionary spending (public investment) than entitlement spending (public consumption). It has also been shown, that in Latin America economic crisis leads to a shift from "investment" strategies and concentration on "consumption" strategies in that case, from investing in public goods like health care and education to social welfare (Huber, Mustillo and Stephens 2008). This is true for both democratic and authoritarian regimes, the authors also note that highly repressive authoritarian regimes are able to control spending on public goods (investment), while expanding funding for social security (consumption). In summation, the public spending literature seems to agree that an economic crisis generally results in a shift from long-term investment strategies to short-term consumption strategies, at least in the area of social spending.

The issue of nondemocratic elections can be approached from two major positions. On the one hand, following the challenges framework, elections represent a challenge from the masses, giving power to the electorate. As a response, the incumbent may want to redistribute resources to the voters. On the other hand, the incumbent may use more indirect means of vote mobilization - one of them being redistribution to specific elite groups.

In line with the first idea, it has been shown (Miller 2014, 2015) that autocratic regimes holding elections use them as an information-gathering device to later adjust their policies. Based on the data about 269 autocratic elections in 86 countries from 1975 to 2004, Miller shows that "falling vote totals for the ruling party predict policy concessions following the elections, namely increases in education and social welfare spending and decreases in

military spending” (Miller 2014). There is no connection between regime popularity prior to elections and spending, which supports the causal claim. As demonstrated by Stasavage (2005) for the case of democratization in Africa, the introduction of elections at the national level affects spending redistribution. More specifically, while autocracies had to spend more on urban population, which poses a revolutionary threat, after the introduction of elections governments became more responsible to rural groups, which represent the majority of population and therefore voters. In a different environment, Martinez-Bravo, Padró i Miquel and Qian (2012) have shown that a shift to elections significantly increase public expenditure at the local level in China. Thus, elections act as a factor stimulating a shift from spending on less numerous to more numerous groups. They also increase spending on public goods.

Elections has also been connected to redistribution to certain elite groups, serving as a mechanism of elite management. For the case of Egypt, Blaydes (2008) shows how authoritarian regimes can use competitive elections to distribute rents and positions to elite groups: they act as ”a kind of market mechanism for the selection of those individuals who will be allowed to extract state rents via both legitimate and illegitimate channels”. As demonstrated for the case of Russia, elections can serve as a way of evaluating the performance of regional officials so that higher margin of victory for the ruling party in a region will lead to higher probability of leader survival (Reuter and Robertson 2012) and more resources allocated (Frye et al. 2015) - here again, keeping the position or higher federal support act as rewards.

This review demonstrates that elections and external economic conditions are among major factors that can shape the spending priorities of a regime. They are also, as it has been shown earlier, major challenges to hybrid regime survival. While the effects of both factors on regime dynamics has been extensively studied, the results are inconclusive. In the following sections I create a theory of spending priorities based on studies of regime survival and a notion of trade-offs between different groups and objectives, which allows us to analyze nondemocratic spending policies in a systematic way.

Spending priorities as survival strategies

Spending as policy

Spending represents an important part of government policies. Even though we can imagine other aspects of governmental involvement which heavily influence the functioning of the society, the way state budget is distributed is a major policy instrument. As such, it can be used to pursue government's goals. In this regard, it seems appropriate to use public spending as a proxy to evaluate policy choices.

As noted above, we can imagine many ways the regime may build its relations with the society and ensure its own survival. Those can include direct management of publicly owned entities, regulation, building loyalty networks based on familial or patronage connections, state propaganda etc. These strategies are studied elsewhere (Magaloni 2008; Smith 2005; Truex 2014). Spending represents a convenient proxy for some of them (e.g. spending on the repression apparatus as a proxy for the use of repression, spending on bureaucracy as a proxy for distributing spoils to state employees) and a separate strategy in other cases (spending on education as investment in human capital and encouraging certain long-term demographic trends). Yet throughout this study it is important to remember that I focus on budget priorities and this excludes some of the important policy instruments available to the government. Therefore, the argument only refers to government spending, not all government policies, and all conclusions are restricted to this sphere.

Challenges and policy responses

As demonstrated in the studies on hybrid regime survival, we can distinguish between two major groups of challenges to the regime stability: external challenges (foreign intervention, spillover effects, global economic conditions) and internal challenges (social unrest, elite splits). These challenges provoke responses on the part of the regime which tries to survive. I use two specific examples of challenges to hybrid regimes - an external economic crisis and elections - and explore the regime's response strategies. An economic crisis is a type of shock that restrains the resources available to the government and

so makes the trade-off between immediate survival strategies and more long-term development strategies more pronounced - so I expect a shift in priorities from long-term to short-term spending. Internal challenges can be further subdivided into those coming from elites and those coming from the masses, with responses shown to correspond to the major source of the challenge. Elections in non-democracies can be seen a challenge coming from both sides, being a moment of uncertainty when both the support of elite allies and mass support is necessary. Therefore, I will consider two alternative hypotheses regarding the reaction to elections in terms of spending: prioritizing redistribution in favor of the masses or the elites. In the following sections I describe the above mentioned spending priorities, construct a space of choice and specify my hypotheses to be tested later.

Survival and development in hybrid regimes

The first two kinds of spending I distinguish are long-term or long-run (LR) and short-term or short-run (SR) spending.

LR strategies include spending that has long-term returns and offer pay-offs that build up over time. In a sense, they can all be referred to as public goods too, as their benefits are highly dispensed (if not non-excludable). The examples of these strategies which I will analyze are economic development programs, investment in health care and in education. These policies are important in the long run, so their benefits for the regime are also not immediate. Thus if they have any effect on regime survival, it's survival in a rather distant future, and we would expect the leaders to be short-sighted and autocratic leaders to be less interested in the citizens' well-being. Yet it has been demonstrated that even the most autocratic regimes provide some public services (Ross 2006) and can change the level of provision in response to changes in the environment (Dizaji and Farzanegan 2014). Furthermore, as shown by Gallagher and Hanson (2009), the provision of public goods is linked to survival of nondemocratic leaders as they are part of the policy of "sticks and carrots" that these regimes use to maintain support.

Short-term (SR) strategies are linked to immediate needs of the regime. These cover day-to-day spending that ensures the functioning of the state and survival of the citizens.

Policy choices available to hybrid regimes in the short run include repression and seeking cooperation through targeted redistribution - the latter aimed at elite or mass groups. Redistribution to elites will be evaluated through spending on bureaucracy, redistribution to mass groups - through social welfare transfers. Repression is frequently included in the description of non-democratic regime strategies (Gandhi and Przeworski 2006), but notoriously hard to quantify. Evaluating repression through the expenditures on public order and security as a share of all central government expenditures is possible and has been done before (see, for example, Zavadskaya (2012)). At the same time, as I will show in the next section when talking about SR strategies in more detail, some types of repression are less quantifiable through spending on the security apparatus than others.

An economic crisis as an external shock creates strains for the budget, and the choice between immediate needs (SR spending) and long-term investment (LR spending) is the first trade-off that the leader may face. As it has been shown, this effect exists both in democratic and authoritarian regimes, and they both seem to choose short-term over long-term spending in the time of crisis (Huber, Mustillo and Stephens 2008; Breunig and Busemeyer 2012). Yet only the specific kind of long-term and short-term spending - social spending - was studied in detail. I will, therefore, test whether the existing expectations are true for the hybrid regimes as well and explore the effects of crisis as an external shock on other kinds of long-term and short-term spending. I expect the economic crisis to create incentives for a relative (as a share of total spending) decrease in long-term spending, as short-term survival will become both harder and more crucial. This will inform the first set of hypotheses.

SR survival strategies

As described in the previous section, among the SR strategies available to non-democratic regimes I distinguish repressive strategies and redistribution (to ensure cooperation) to either the elite groups or the masses. These types of spending are necessary for immediate survival and ensure day-to-day support for the regime. I will expect them to be the last sacrifice in time of crisis.

Redistribution to the masses can be captured by selective transfers in various forms

(Magaloni 2006). These have been shown to be effective instruments of voter mobilization ((Hicken 2011; Wantchekon 2003)). Parties and other organizational structures may make it easier to both redistribute and control commitment on the part of the masses.

Selective transfers to elite members take the form of positions and access to power (Gandhi and Przeworski 2007). This strategy allows the leader to ensure support of the elite groups. One can think of different approaches to measuring this strategy - a possible indicator being the share of military expenditures (Gandhi 2008), and at the regional level - patronage appointments to bureaucratic positions (Remmer 2007).

There are theoretical expectations concerning the use of redistribution strategies as a response to electoral challenge. From the one hand, if the top leader is not popularly elected, the support of the elites dominates the leader's agenda as it is the base of her survival. Popular elections quickly increase the role the masses have in regime stability, so that redistribution to important constituencies becomes much more prevalent. The logic is similar to the selectorate theory (De Mesquita 2005).⁵

Elections can also have another consequence - as described in the literature review, in a nondemocratic setting the incumbent may use elites to mobilize public support and correspondingly redistribute in favor of elites to reward them for cooperation. Therefore, I will consider two alternative hypotheses about the effect of a publicly elected leader on patterns of redistribution: one based on the mechanism of direct redistribution to the voters and another based on the assumption of using the elites to mobilize voters and correspondingly redistributing to elite groups.

This is the same distinction that can be found in the studies of authoritarian survival

⁵ Empirically, this view is based on the assumption that certain groups are more likely to support the incumbent, and she knows that. Therefore, being able to manipulate spending to the benefit of specific groups will be useful to ensure their prolonged support and ultimately her own survival. For the Russian case, the validity of this assumption can be supported by the survey data which shows, that Vladimir Putin has higher support among older respondents (over 60 years old), living in small towns or rural areas, and those with monthly income of RUR 8000-20000 (given the official national average RUR 30 000). VTSIOM, in more detailed regular surveys, shows that higher approval for Putin is more common among older respondents (age groups 45 and over), those with lower education, pensioners and housewives (on maternity leave), military and bureaucrats. As it can be seen, many of these groups are recipients of state support in some form - I will analyze whether these allocations are changed to ensure their support for the regime under different challenges. See FOM report (2016), Report of the State Statistics Service (2016), VTSIOM survey report (2015)

which proposed that an autocrat who wants to keep her position will try to ensure the support of both elite and mass groups (De Mesquita 2005; Magaloni and Kricheli 2010). In a similar manner, elections can be treated as a challenge from the masses and therefore primarily stimulating mass-oriented response strategies. Yet they are not necessarily or not only that. Talking specifically about elections, Brownlee (2011) distinguishes between three major roles of authoritarian elections: "a valve releasing social discontent and enabling the regime to survive crises ... moments of clientelistic transactions between candidates and voters ... performance displaying a regime's power and evoking awe among voters". As can be seen from this citation, all these functions are focused on the interaction with the electorate or the masses. An alternative view on elections in nondemocratic settings is proposed by Blaydes (2008) - she treats legislative elections as a mechanism for elite management. In a similar manner, I argue that executive elections create uncertainty about the outcome and stimulate the redistribution of resources in favor of elite groups to ensure their support.

These two alternative explanations - elections perceived by the incumbent as a challenge from the masses needing a corresponding response or as a potential challenge from elite groups - will be the base of two alternative hypotheses. Testing them using available data will allow me to evaluate, how leaders perceive elections and which strategies they choose to address this specific challenge.

Finally, there is the repressive strategy - if the regime can't ensure cooperation on the part of the citizens, it can use force to ensure its survival. Unfortunately, using spending on law enforcement and security agencies as an estimate of this strategy, I at best can't distinguish between elite and mass-oriented repression. At worst - there is an indistinguishable line between ensuring necessary order and suppressing citizens. And even more, it seems that only specific kinds of repression (detention of dissidents, increased pressure through hiring more security officers, building new facilities etc.), mostly aimed at mass dissent, can be proxied. All these considerations need to be taken into account when evaluating the repressive strategy. Repression will be taken into account as one of the SR spending priorities, but won't be analyzed in the elites vs. masses part due to these restrictions.

The described properties of SR strategies and their predicted response to the internal

challenge - elections - inform the second set of hypotheses.

Hypotheses

Following the theory in the previous sections, the decision space for the leader facing challenges to regime survival can be represented by the table below.

Survival strategies		Target groups	
		Elites	Masses
Long term (investment)	Public goods	Economic development, health care, education	
Short term (consumption)	Redistribution through selective transfers	Spending on administrative staff and operations, military spending	Social security programs, pensions
	Repression	Spending on security apparatus in general	

Table 1: Spending categories representing various policy strategies

Hypothesis 1 External economic crisis will have positive effect on short-term spending categories and negative effect on long-term spending categories as a share of total budget spending.

Hypothesis 2a Elections will have positive effect on spending categories targeted at mass population groups and negative effect on spending categories targeted at elite groups as a share of total budget spending.

Hypothesis 2b Elections will have positive effect on spending categories targeted at elite groups and negative effect on spending categories targeted at mass population groups as a share of total budget spending.

In addition to that, I expect a mediating role of general regime competitiveness. Non-competitive elections mean that redistribution may even not be necessary - there is no uncertainty associated with elections, so neither elite groups nor the masses would need to be appeased. That determines the inclusion of regime competitiveness in the models as an interaction term for the elections variable:

Hypothesis 3 The higher the regime competitiveness, the more pronounced redistribu-

tive effects will be.

Introducing the case

I test my theory using subnational spending in Russia from 2001-2014. To use this case for the theory above, several conditions need to be satisfied. First, Russian regional regimes would need to be a suitable example of hybrid regimes in the examined period. Second, more specifically, one needs to check whether using subnational data changes any of the basic assumptions of the theory substantively and if it does, then the theory should be modified to reflect these changes.

Russian regions as hybrid regimes

I claim that Russia can be both characterized as a hybrid regime and demonstrates variety of subnational regimes. Russia, as of the end of 2001, was classified as a competitive authoritarian regime (Diamond 2002), more contemporary accounts also place it in this category (Petrov, Lipman and Hale 2014). Besides that, the development and endurance of Russian subnational regimes has been demonstrated in numerous studies (Gelman and Ryzhenkov 2011) and widely exploited in comparative research.

Regarding more specific characteristics relevant to the present study, during the 2000s a major institutional change was introduced regarding the process of selection of regional leaders (heads of the regional executive). From 1996 to 2004, most regional executives were directly elected by the population, while from 2005 until 2012 they were appointed by the president more or less in consultation with the dominant party. Starting from late 2012, the elections were reinstated, though in a restricted manner (with limitations on candidate selection). That all happened against the background of "pendulum-like trajectory of relations between the central and regional elites", when the more decentralized period of the 1990s was followed by centralization of the 2000s (Sharafutdinova 2010; Moses 2014). At the same time, regional legislative elections were never abolished and were playing an important part in regional political dynamics throughout the whole period. The competitive-

ness of these elections varied between the regions as well as across time. This all allows us to categorize Russian regions as hybrid regimes throughout the whole period while having distinct periods with and without popular elections of the top executive. Therefore, I will use this major change from elected to appointed governors, as well as the level of regime competitiveness in general, to analyze the effects of elections on spending priorities.

Going to subnational level - adapting the theory

When taking the theory of regime survival strategies to the subnational level, it is necessary to consider several important points. The benefit of the subnational approach is that it allows us to conduct a large-N study while keeping constant the nation-specific context that compromises cross-national comparisons, while addressing important issues of within-country variation and spatially-uneven nature of certain political processes (O'Donnell 1999; Snyder 2001). At the same time, simple translation of theories of national politics to the subnational level is dangerous, as it ignores one of the major determinants of subnational politics - its relationship with the higher level of authority and dependence on the national politics.

Connections to national level

When talking about subnational regimes, the basic assumption stays the same - the regional leader wants to stay in power as long as possible. To maintain power, she needs to have the support of at least some mass groups in the region and regional elites. At the same time, theories of subnational authoritarianism bring some important considerations about the stability of subnational elites and the role of national level politics in that.

Scholarship on subnational authoritarianism addresses an interesting issue of discrepancy between the national and regional political regimes. Gibson (2005) describes the situation of regional authoritarian enclaves surviving due to allies and resources at the national level. It appears reasonable to assume that the presence of allies and resources at the national level makes it easier for regional incumbents to survive. These connections and resources will be an important control variable to complement survival strategies specified earlier for national-level regimes.

Regional leader's political resources at the national level can be measured through several indicators, depending on the specific characteristic of the national political system and federal relations: from party affiliations (as in Latin American contexts of the presence of several parties with developed regional structures) to personal connections (as in Chinese single-party experience, when personal connections through common experience with national leadership has been shown to matter for elite promotion). In case of Russia, two possible approaches can be used - one based on political connections, and another based on financial ties. The minimalist interpretation of political connections is to assume that the dominant party's electoral results in the region demonstrate the governor's ability and willingness to have good relations with the federal center. This can act as a proxy for the "good standing" with the federal elite.

As for financial ties, an important characteristic of center-region relationship is the region's ability to fund its responsibilities with own taxes (that is, the size of the tax base and consequent self-sufficiency). In the situation when a significant amount of resources are distributed centrally, this will mitigate the effect of economic crisis for some regions. For example, if some regions are able to get the same or almost the same amount of resources as before, their spending patterns aren't going to change as drastically as in other regions. As demonstrated in the literature on fiscal federalism, higher levels of central transfers (as opposed to local taxes) in the region's budget lead to subnational authoritarianism through the lack of individual economic autonomy (most resources and access to them are controlled by the regional administration) and taxation-representation link (Gervasoni 2010). Hoffman and Gibson (2005) further show that lower share of revenue coming from the region's own taxes leads to less spending on public services and more spending on salaries and administrative costs. Thus, the dependence of the regional budget on central transfers will also be included in my estimations, because it is another (besides elections) factor that determines the choice between redistribution to "elites" and "masses". Furthermore, this indicator will generally characterize the leeway of the regional leadership in deciding upon their own spending priorities as opposed to federally-imposed minimal standards. Therefore, I will take into account the region's tax potential.

Regional spending powers

An important premise of studying regional spending priorities is understanding their actual level of discretion and the scope of regional variation. Empirical research can provide evidence on both points, while changes in formal legislation can also support the former.

Existing studies demonstrate there is a significant variation in regional budget spending even in the 2000s (when centralization tendencies were more pronounced). Thus, as can be seen from consecutive surveys of the Social Atlas of the Russian Regions (Social Atlas), as well as the recent report on social expenditures performed by the Higher School of Economics (Social Expenditures 2015), there are manifold differences in expenditures at the regional level (after correcting for the price level). Regions demonstrate different dynamics of response to the financial crisis of 2008, in terms of spending on economic development, social policy, and other major categories. Their reaction to the current economic downturn is also uneven: in 2014, 53 regions decreased spending on economic development (compared to previous year), yet only 9 did the same for the education spending.

From the side of the fiscal legislation, the period in focus (2001-2014) was marked by at least one major change in federal budget relations. The beginning of this period was marked by budget reforms which changed the relations between the levels of authority. At the beginning of Putin's first presidency, the so-called Kozak's commission recommended important changes in a rather informal system that existed before that (the one which naturally evolved after the dissolution of the Soviet union and the weakening of central state in Russia). Implemented in 2003-2004, a set of these changes introduced order in the separation of taxing and spending responsibilities of different levels of power. In 2003, amendments to the Budget and Tax Codes, as well as federal laws on separations of responsibilities, were aimed at introducing order and clarity in the highly uneven and informal situation that existed in the budgetary sphere before that. Among major innovations were the separation of own, shared and delegated responsibilities, and the principle of funded mandate that is, the idea, that spending responsibilities cannot be delegated to the lower level without sufficient funds to exert them (Yakobson 2006).

However, that did not end regional differentiation and only partially limited regional dis-

cretion in budgetary policy. For example, even after passing "centralizing" legislation on social protection which specified regions' responsibilities in 2005 (monetization), individual regions passed very different regional legislation enacting it, which largely transformed the initial provisions (Gontmakher 2005).

Given there were ongoing budget reforms in the period under study, the question of data consistency becomes important. I argue that formal changes in spending responsibilities of different levels of authority don't undermine my main thesis. These changes were imposed uniformly across regions and types of spending, yet the regions had freedom to decide how to adopt them - therefore, they can be considered a part of their spending strategies.

Subnational appointments

A specific trait of the Russian case that I'm exploiting is that there is a period when regional governors were appointed rather than directly elected by the population (2005-2012). When regional governors are appointed by the central authorities, it turns the whole situation from electoral to bureaucratic politics. Are the incentives of centrally appointed regional leaders similar to those of unelected national leaders?

In the recent years, many different authors have studied the effects of governors' appointments system in China, assuming that the criteria used by the center shape the behavior of regional governors and their policy choices. The first widely studied priority is economic development. Thus, Bo (1996) shows that "the worse the economic performance record the more likely the provincial leader will be demoted". Li and Zhou (2005) find that both promotion and demotion are dependent on economic performance and conclude that personnel control is used to stimulate economic growth in China. These examples of research focus on policy outcomes and central efforts to induce certain behavior. There are also examples of work showing how the incentives the regional governor affect actual policy choices. Talking specifically about social spending, Liu (2010; 2011) shows that Chinese governors prefer to answer the demands of labor first and spend on social security, making education and health care second-level priority, due to the fear of protest, which is more likely to come from labor and which negatively affects their potential career.

The mechanisms ensuring this alignment between the central and the regional policy

objectives in the Chinese case are based on bureaucratic promotion - an official's prospects for career advancement are dependent on his/her performance. Yet it has been shown for the case of the Russian governors, that they normally come from the region they govern, are rarely promoted (that is, being a governor is the top achievement in their career) or moved between the regions (Rochlitz, Kulpina, Remington and Yakovlev 2015). Moreover, decisions on reappointment were made based on political loyalty, not policies or policy outcomes (Reuter and Robertson 2012). That makes them much less dependent on the federal center in their policy priority setting and therefore allows us to treat their policy choices as their own - controlling for the relative amount of financial resources necessary held by the federal center. That emphasizes once again the importance of taking into account the region's own tax base, which was described earlier.

Having went over several important characteristics of subnational leadership and politics as compared to the nation-state level, I add two important control variables: the level of financial independence (which will affect spending discretion) and political closeness to the national leadership (which will affect both availability of specific federal resources and leader survival). Besides that, when using the proposed theory at subnational level one should consider the amount of control federal authorities have over regional leaders' incentives - especially when the regional governors are centrally appointed. It seems that in the Russian case we can study regional leaders and regional spending priorities as relatively independent entities, which allows the application of the specified theory.

Methods

Data sources and variables

Dependent variable(s): budget data

Dependent variables are constructed as the share of a given spending category in the total regional spending (in percent). Often, researchers use the share of gross national/regional product in similar situations. There are several factors that make data on Russian gross regional product less reliable. One of the most often voiced is that many companies that operate in the regions have their headquarters in Moscow, which creates the problem of proper registration of the location of production and distorts statistical figures like GRP on formal grounds (Solanko 2003; Herzfeld 2008). This uneven nature of GRP data explains the choice of the dependent variable.

As described in the theory, I will use 6 specific spending categories relating to different policy priorities. The first two categories represent a trade-off between redistribution to elite groups and redistribution to the masses and will be used to evaluate the hypothesis about the effects of election on their relative importance. I evaluate redistribution to elite groups through spending on bureaucracy, and more specifically on those employed in the regional and local executive ("Regional and local administration"). Redistribution to the masses is analyzed using social welfare spending aimed at specific groups of population, such as pensioners, urban poor or people with disabilities ("Social policy" category of the budget). While at any given moment certain amount of state spending will be devoted to each of those two categories, relative dynamics should be consistent with the theory - that is, the method of selection of the leader.

The third category is spending on repressive apparatus. It is measured as funds spend on law enforcement agencies ("Organy vnytrechnih del"). That doesn't include federal agencies (like the FSB) and approximates regional spending on supporting public order. Together with the previous two categories, this is a short-term type of spending and as such will be used to evaluate the hypothesis on long-term vs short-term spending during crisis.

The next three categories are all long-term spending. These are spending on economy

(in budgets, sometimes called "National economy", even though it's still about the regional level), health care and education. Spending on regional economy includes such measures as supporting agricultural producers, investing in industrial infrastructure, budget loans to producers and others. Individual subcategories here are industry (including mining and construction), communications, transport etc. Spending on health care is a general category covering capital investment, salaries, various types of hospitals and specialized care. Finally, for the education category it was possible to isolate the type of spending which is mostly the responsibility of the regional authorities - namely, pre-school and general school education.

Dependent variables are formed based on the information on specific categories of public spending at the regional level. These data come from the yearly reports of the Federal Treasury, which publishes data on the realized federal and regional budgets of the previous year. The variables were constructed by the author, by summing up certain lines of spending, selected from the budget. Based on the sums, I estimated the shares of corresponding categories in the yearly spending for each region. Different categories do not sum up to the overall spending in a given year, because only certain categories and lines within them were picked for theoretical reasons.

During the period under observation, the Federal Treasury changed the format in which it collects and publishes budget reports - there was a major change in 2005 and some minor alterations later. That makes studying the whole period challenging. Data prior to 2005 is presented at a much more aggregated level. One of the results is that I use rather crude measures of spending types: in this earlier period, it is impossible to identify capital and operational spending (for example, spending on building hospitals and on salaries of doctors). As increasing the period under study is important for theoretical reasons (to get changes in dependent variables), I chose to maximize the number of years while sacrificing the detail. Every effort was made to ensure the consistency of spending categories throughout the whole period.

The choice of specific spending categories to address the research question is of special importance. The major difficulty, as compared to the studies of national-level spending, is

that regions are not absolutely free in their spending decisions, and a lot of resources are redistributed according to federal policies and using federal funds. There is no direct way to select only those spending categories that are consistently and exclusively decided on by the regions. Two approaches are used to account for this problem, though. The first one is controlling for the Tax capacity index, which evaluated the region's ability to fund its obligations using its own taxes. The logic here is that having higher tax capacity means having more having your own resources and therefore more discretion in redistributing funds. The second approach is selecting the lines of regional budgets (within the categories of interest like education or social policy) that are more the region's own responsibility and less prescribed by the federal center. An example would be spending on kindergartens and general school education in the education category (as opposed to professional and tertiary education). This was done where the detailed nature of the budgets allowed such operation. Otherwise, the more general category was used (an example would be spending on health care, which is not separated into categories for most of the studied period).

Whenever data on a given spending category was not detailed enough for at least part of the period, the more aggregated version was used (e.g. health care divided into spending on general hospitals and emergency care after 2005 - and even though emergency care is better for evaluating regional policies, the whole category of health care spending was used for the entire period). The full list of budget lines used by year can be found in the Appendix.

Independent variables and controls

The two major groups of explanatory variables are those describing the presence and competitiveness of elections and those used as an indicator of an economic crisis. For the executive elections, the basic variable is whether regional leader is centrally appointed or elected. This variable is constructed as a simultaneous change for all regions starting from 2005 and going through 2012 - the whole period when governors in Russia were appointed. That is, even if the region is headed by the same elected governor in 2005, the institutional framework has changes due to the change of rules - and I assume that it will influence the governor's incentives (which change from those of an elected politician to those of an unelected leader even for one and the same person). Competitiveness is measured by the

winner's margin of victory in the most recent regional legislative elections (for the periods when legislative elections were held in SMD - based on gubernatorial elections' margin of victory). The period of the economic crisis is approximated by a dummy variable having the value of 1 for the years 2008-2009 and 0 in all the other years.

Besides that, several important controls need to be introduced, based on the theory adjustments for the subnational level. The results of federal legislative elections (voting for the 'party of power' - Edinstvo in 1999 and "United Russia" in 2003, 2007 and 2011 elections) at the regional level will be used as a proxy for the governor's loyalty and therefore potential connections/influence among federal elites⁶. I will also use the Tax capacity index (Tax potential index), calculated by the Ministry of Finance to account for a region's own tax base. Tax potential index reflects the region's tax potential to the national average. Tax potential is based on the estimates of the predicted volume of region's tax revenue. These two variables (governor's potential influence at the federal center and region's capacity to fund itself by own taxes) will not influence the dependent variables (shares of spending on specific categories) directly, yet I expect them to interfere with the governor's incentives when making decisions about response strategies. Governor's potential influence at the federal level might increase his chances of survival: he might not face the same need to redistribute resources just because he can get additional transfers from the center. Regions with lower tax potential are more dependent on the federal center in getting resources, so we can at least hypothesize that they can feel somehow more protected in the event of an external economic crisis and will experience less shock. There are additional controls to account for other factors that may explain the observed variation in spending. These indicators describe the regions' social and economic situation (territory, population, employment etc.) and will be used to control for other (besides institutional variation) factors that may influence spending priorities. These come from the data base on the Russian regions created and published by the International Center for the Study of Institutions and Development⁷

⁶ Potential influence given by combination of resourcefulness and loyalty

⁷ Databases created by the International Center for the Study of Institutions and Development as parts of the project "Institutions and Economic Development: the Role of Bureaucracy and Experiments and an

. The complete codebook can be found in the Appendix. I use regional GDP per capita in comparable prices to control for the level of regional economic development, the population (total and urban) of a region and the basic indicators of the demographic structure which should be important for public spending - more specifically, the percent of persons under and over working age and unemployment level.

In some cases, there are specific and unidirectional expectations concerning the effect of these factors on outcome variables. Thus, population can reflect the level of demand for the government services and policies (Syunyaev and Polishchuk 2014; Revenko 2001) - therefore, I expect a positive effect of population on all types of spending. The urban population is expected to have negative effect on spending on bureaucracy, health care and education due to economies of scale and positive effect on spending on security, because urban centers are more probable sources both of crime and anti-government actions, which makes spending on security more important. Percent of young (under working age) population can have positive effect on spending on welfare (programs supporting families with children), health care (higher priority given to children health) and education and negative effect on spending on security (assuming that most crimes are committed by people of working age). Percent of old (over working age) population should be positively associated with spending on welfare (pensions) and health care and negatively - with spending on security (the same assumption that most crimes are committed by people of working age, so a region with older population will spend less on containing crime and ensuring security). Finally, unemployment should be positively associated with spending on welfare (unemployment benefits) and spending on security (crime and unrest being positively associated with unemployment).

Table 2 contains the summary of variables and expectations of relationship between them formulated according to the hypotheses.

	Variable	Definition		
Dependent variables	Spending on bureaucracy	Share of regional budget spent on regional and local executive, percent		Hypothesized relation to spending on education
	Spending on social welfare	Share of regional budget spent on social programs (including pensions), percent		Hypothesized relation to spending on health care
	Spending on repressive apparatus	Share of regional budget spent on law enforcement agencies, percent		Hypothesized relation to spending on economy
	Spending on economy	Share of regional budget spent on supporting and developing regional economy (all sectors), percent		Hypothesized relation to spending on repression
	Spending on health care	Share of regional budget spent on health care, percent		Hypothesized relation to spending on social welfare
	Spending on education	Share of regional budget spent on pre-school and primary education, percent		Hypothesized relation to spending on bureaucracy
	Independent variables	Elections	1 if in a given year regional governors are elected (country-wide), 0 if they are appointed	⁸ -
Economic crisis		1 for years of global economic crisis (2008-2009), 0 in all other years	⁹ +	

⁸ Hypothesis 2a

⁹ Hypothesis 2b

(Table 2 continued)

Variable	Definition	Bur.	Welf.	Sec.	Econ.	Heal.	Educ.	
Independent variables	Competitiveness	+/-	+/-	+/-	+/-	+/-	+/-	
	GRP per capita	+/-	+/-	+/-	+/-	+/-	+/-	
	Population	+	+	+	+	+	+	
	Urban population	-	+/-	+/-	+/-	-	-	
	Percent young	+/-	+	+/-	+/-	+	+	
	Percent old	+/-	+	-	+/-	+	+/-	
	Unemployment	+/-	+	+	+/-	+/-	+/-	
	Tax potential	+/-	+/-	+/-	+	+/-	+/-	
	UR vote	+/-	+/-	+/-	+/-	+/-	+/-	

Table 2: Variables and expected relationships

Model

I have a pooled time-series dataset with $N=83^{10}$ and $T=14$ (2001-2014). Even taking into account that I drop the smaller units that disappear at a certain time point (are absorbed by larger regions), the panel is still unbalanced due to missing values in some variable at some time points. Besides that, as common for times series data, there is autocorrelation: the Wooldridge test for serial correlation is highly significant for all dependent variables, which is to be expected in this type of data. This will influence the modeling strategy.

The presence of serial correlation violates the requirements for a standard OLS regression. Confronted with a similar problem, researchers using pooled time-series data have proposed various solutions. Podestà (2006) in a review of several examples of research design demonstrates how specific methodological choices are linked to theoretical assumptions made by the authors. For example, he shows that when interested in long-term effects of various factors on state spending, modeling the dependent variable in terms of level of spending, not including the lagged dependent variable and fixed effects, is a more appropriate approach. Yet these advantages can be best exploited when the data has certain econometric properties, and more specifically does not suffer from non-stationarity.

I have two major independent variables - executive elections and external economic crisis. The first is an institutional change, the other - an external shock. They can be argued to have both immediate short-term and long-term effects, while being rather rapid and unexpected events (therefore being similar to what Pierson (2003) would consider a "tornado" and a "meteorite"), yet I would argue that an institutional change such as elections might take more time to have effect, which will also be more long-term and stable. Additionally, I run Fisher-type unit-root test for all my dependent variable and discover that at least two of them are non-stationary (spending on security and on bureaucracy). That requires being very cautious when drawing conclusions and together with substantial interest in both long-term and short-term effects motivates me to use an alternative modeling strategy as well.

I will use two sets of models for each dependent variable. First, I run error correction models (ECM), which capture the dynamic interaction between the variables of interest. The dependent variable is constructed as a change in level of the dependent variable. This model has been used by researchers of public spending priorities (Remmer 2007; Rodden 2003) and is useful while exploring how one variable adapts to changes in another variable. More specifically, it allows me to trace the immediate reaction of spending patterns on the two kinds of challenges. This model has its limits which explain the use of another model to look deeper into the relationship of interest. First of all, due to the specific construction

¹⁰ dropped regions: Sevastopol, Crimea, the city of Baikonur, and 'autonomous okrugs' included in the bigger regions as a result of administrative transformations

of the dependent variable, ECM focuses on within-unit (in time) variation and is not useful in explaining the between-unit variation. This makes it useful for studying the effects of crisis and elections, as these changes were universal for all the regions and happened at the same time, therefore, they don't vary across regions. At the same time, this model does not include competitiveness, because between-unit variation of this variable is much higher than within-unit variation, making using ECM less useful in studying this relationship. Additionally, interpreting interaction effects in ECM is much less straightforward, so I will explore this relationship in the next model.

The specific form of the used ECM is:

$$\delta Y = \beta_0 + \beta_1 Y_{it-1} + \beta_2 \delta Crisis + \beta_3 Crisis_{it-1} + \beta_4 \delta Elected + \beta_5 Elected_{it-1} + \beta_6 \delta \Sigma + \beta_7 \Sigma_{it-1} + u_{it},$$

where δY - change in the share of a given spending category in total budget spending from year t-1 to year t

Y_{it-1} - share of a given spending category in total budget spending in year t-1

$\delta Crisis$ - change in the dummy variable for the economic crisis from year t-1 to year t

$Crisis_{it-1}$ - value of the economic crisis dummy variable in year t-1

$\delta Elected$ - change in the dummy variable for the gubernatorial elections from year t-1 to year t

$Elected_{it-1}$ - value of the elections dummy variable in year t-1

$\delta \Sigma$ - changes in the control variables from year t-1 to year t

Σ_{it-1} - set of control variables, including regional GRP (in fixed prices), index of tax potential, territory and population (total and urban), level of unemployment, and political characteristics such as voting for the party of power, in year t-1.

The second type of models I use are the GLS models with panel-corrected standard errors (PCSE), and more specifically - Prais-Winsten regression. This approach has been shown to be appropriate for the type of data I use Beck and Katz (1995); Plümper, Troeger and Manow (2005) and has been applied in similar research Stasavage (2005); Huber, Mustillo and Stephens (2008). It accounts for the discovered autoregression and allows for a more direct interpretation of numerical effects of independent variables and especially their interactions. This model will allow me to look into long-term effects of changes in independent variables.

The specific form of the model is:

$$Y_{it} = \beta_0 + \beta_1 Crisis_t + \beta_2 Crisis_{t-1} + \beta_3 Elected_t + \beta_4 Elected_{t+1} + \beta_5 Comp_t + \beta_6 Elected_{t+1} * Comp_t + \beta_7 \Sigma_{it} + u_{it},$$

where Y_{it} - share of a given spending category in total budget spending in year t
 $Crisis_t$ and $Elected_t$ - explanatory variable (dummy variable for the crisis or the gubernatorial elections) in year t
 $Crisis_{t-1}$ - lag of the crisis variable
 $Elected_{t+1}$ - lead of the elections variable
 $Comp_t$ - level of regime competitiveness in year t
 $Elected_{t+1} * Comp_t$ - interaction term between future elections and current regime competitiveness
 \sum_{it} - set of control variables.

I add the lagged value of the main explanatory variable for hypothesis 1 concerning the economic crisis - arguing that it might be more important whether the previous year was a crisis one, as an external economic downturn is an unexpected event and will take time to influence the spending incentives. For the hypothesis on the effect of elections, on the other side, I add a lead of the main independent variable, to explore whether it is more important whether the next year is the one when the leader has a popularly elected status and will therefore need popular support.

I identified 6 types of budget spending and will run each model for each of them to evaluate my hypotheses.

Data analysis

Descriptive statistics

The initial dataset contains 1246 region-year observations on 89 regions. Crimea, Sevastopol (due to special status and huge missingness) and the city of Baikonur (special territory of a spaceport) were excluded from the analysis. The panel is unbalanced as some regions disappear at a certain moment due to administrative reorganizations.

The major dependent variables are the shares of regional budget spent on specific objectives - regional and local bureaucracy, economic development, social policy. Summary statistics for these variables is presented in the table below.

	Min	Max	Mean	Std.Dev.
Economy	1.26	42.54	9.61	4.57
Health care	0.53	22.97	9.65	4.05
Education	3.97	34.28	18.66	4.52
Bureaucracy	0.23	31.83	3.98	1.83
Social policy	1.19	56.44	12.23	4.87
Security agencies	0.00	14.15	2.14	1.48

Table 3: Percent of regional budget, by category

Two of the major independent variables are dichotomous. Every year except for the period of 2005-2012 is marked as the period of elected governors, 2008 and 2009 are marked as the years of exogenous economic crisis.

Values	Crisis	Elected governors
0	1068	712
1	178	534
Total	1246	1246

Table 4: Main independent variables

Another key independent variable is electoral competitiveness. It was measured using data on regional legislative elections. As PR elections were introduced at the regional level starting from 2003 (and happened for the first time after that - sometimes, depending on the region, as late as 2006), competitiveness of gubernatorial elections was used to account for the overall regional regime competitiveness before that. In both cases, it was measured as a margin of victory - a highly competitive situation would be characterized by small margins. Both measures were centered and scaled before integrating them into one indicator. The distribution of the resulting variable is presented below. The values range from -1.65 to 2.81 with a mean of -0.02. As can be seen from the graph, the distribution is slightly

skewed to the right. Again, smaller values represent the cases of initially smaller margins of victory and therefore higher competitiveness.

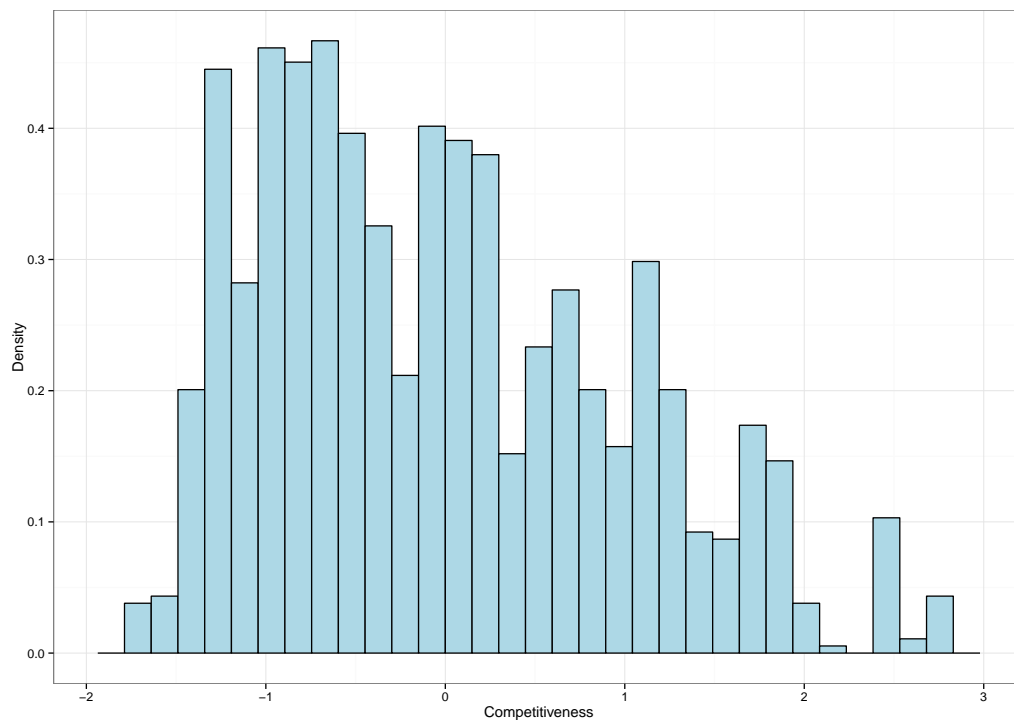


Fig. 1: Regime competitiveness based on gubernatorial and legislative elections

Besides that, there is a set of control variables used to account for the influence of factors which are not the object of the current study. Some of these were discussed in the theory section. Control variables include regional area and population, urbanization, characteristics of regional unemployment, national elections' results. Summary statistics on these variables are presented below.

	Min	Max	Mean	Std.Dev.
GRP per capita (thousand rubles)	8.04	3004.79	198.21	264.00
Population (thousand)	16.30	12108.26	1674.95	1657.92
Urb.population (thousand)	0.00	11971.66	1233.47	1479.71
Under working age (percent)	0.00	64.21	29.99	7.50
Over working age (percent)	0.00	52.30	32.67	9.59
Unemployment (percent)	0.00	67.70	8.61	6.40
Tax potential index	0.08	13.89	0.96	1.36
Edinstvo/UR vote	1.06	99.48	47.68	18.03

Table 5: Control variables

Results and discussion

Error correction models: exploring dynamic relationship

As discussed in the previous section, I use two kinds of models to explore relationships between the variables of interest. For the error-correction model, the dependent variable is the change in spending compared to the previous year, by category, while on the right hand side are the changes (first differences) and lagged values of the independent variables, as well as the lagged level of dependent variable (LDV) to account for trends in the data. This allows us to see how shifts in spending are connected to changes in independent variables - most notably, crisis and the introduction of executive elections, - while taking into account the found autocorrelation.

When interpreting the results, what I am most interested in are the coefficients on the lagged variables, which reflect the more consistent dynamic relationship between the variables. The results of estimations are presented in Table 6. Separate models were run for each of the spending categories, dependent variable being the share of this type of spending in the total regional budget spending in a given year¹¹. As can be seen from R^2 , the models explain from 31 to 55% of variation of the dependent variables. Those are reasonably high given the complex nature of process under study.

The results of estimation strongly support Hypothesis 1: crisis is positively related to changes in welfare and security spending (short-term), and negatively related to changes in all categories of long-term spending. That is, we see a predicted redistribution in favor of short-term response strategies in the face of a crisis.

Coefficients for lagged values of the elections variables are insignificant for both welfare and bureaucracy spending - the two types of short-term spending that I am looking at to evaluate the effect of elections (there are significant coefficients for the changes - but those may reflect spurious reactions of spending variables). That prevents me from drawing any specific conclusions regarding Hypotheses 2a and 2b. As for Hypothesis 3, competitiveness was not included into this model. Therefore, ECM allowed me to evaluate Hypothesis 1 and demonstrate that there is an expected relationship between crisis and spending strategies - a shift from long-term to short-term spending as a response to crisis.

Most of the control variables have the expected effect on spending as well. The percent of young population has a positive effect on spending on education and negative on security. That is, as I expected, the percent of children (which is equivalent to percent of population under working age) is positively associated with the share of regional budget devoted to kindergartens and schools funding and leads to lower spending on security. At the same

¹¹ In comparative studies, a more often used measure is percent of GDP. I commented on the quality of Russian GRP data earlier, yet I re-ran analysis using percent GRP as a dependent variable for robustness check. The results are close enough to those presented here and can be found in Appendix 3.

time, it is negatively associated with spending on economy (for which I didn't have specific expectation) and on health (contrary to my expectation). The percent of old population has expected effects on spending on welfare (positive) and security (negative), while also being negatively associated with spending on economy (no specific expectation) and health (contrary to the expectation). Finally, unemployment, as expected, is positively associated with spending on security and social welfare. The counterintuitive fact that both percent of children and percent of old people in population are negatively associated with spending on health care deserves a separate explanation. Yet, within the scope of the present project, I can not find a plausible theory for this relationship.

These results take me back to the discussion of model selection. As expected, the error-correction model was able to catch the dynamic relationship between the variables - yet the elections, which I expected to be more of a "meteorite" (fast-forming cause leading to longer-lasting effects), don't appear as significant determinants of changes in the dependent variables. Therefore, I proceed to the second model, which should explore deeper structural relationship between the variables.

Prais-Winsten regressions: exploring structural relationship

The results of estimating the Prais-Winsten regressions are presented in Table 7. As can be seen, separate effects are estimated for "elected" (that is, whether in a given year regional governors are elected) and "elect lead" (whether next year regional governors will be elected), as well as for crisis (in the current year) and lagged crisis (1-year lag). Additionally, the inclusion of competitiveness and interacting competitiveness with elections variables allows me to evaluate the effect of elections on spending in different political environments. The models explain from 22 to 60% of variation in the dependent variable.

As can be seen from the results, there is a significant increase (by over 2% of total spending) in social welfare spending in the years following the beginning of the economic crisis (that is, years 2009-2010 for the 2008-2009 economic crisis). That agrees with Hypothesis 1, moreover, it tells us that the increase is not immediate and appears as a reaction to crisis with a lag. There is no significant effects for other short-run spending categories. Among the LR spending variables, spending on economic programs and health care behave as predicted (dropping by 2.8% and 2.3% of total budget correspondingly). Those categories of spending get less funding in the years of crisis, but there is no significant effect the years after that. Spending on education doesn't have significant effect. The inclusion of both current crisis and lagged variable, therefore, allows us to see the differentiated reaction in terms of spending strategies: while the share of long-term spending decreases immediately during external economic shock, it takes some time before welfare spending catches up, after the mass groups have experienced the effects of crisis and can place their demands on state support. Overall, these results are consistent with Hypothesis 1.

As for the effect of elections and regime competitiveness, due to the presence of the interaction terms, I present the results in the marginal effects plots (Figure 2). The average marginal effect of "elected" on social welfare spending is around -3 and the average marginal effect of "elected" on spending on bureaucracy is around 1. Both are always significantly different from zero. The average marginal effect of "elect lead" is never significantly different from zero (meaning there is no effect of anticipation). That is, in the period when governors are elected, spending on welfare programs is lower by 3% of total regional budget as compared to the period of appointed governors. Spending on bureaucracy during the period of elected governors is higher by an average of 1% of total regional budget¹². This is consistent with Hypothesis 2b: when regional leaders face the potential challenge of popular elections, resources are redistributed towards the elite groups. As we see from the graphs, lower values of regime competitiveness index (which corresponds to lower margins of victory and therefore higher competitiveness) are associated with more pronounced redistributive effects, which supports Hypothesis 3.

Among the control variables, several show significant and substantial effects. Percent of young population has negative association with spending on security (opposite to expectations) and bureaucracy and positive with spending on education (as predicted). Percent of old population is negatively associated with spending on bureaucracy and positively with spending on welfare (as predicted) and education. Unemployment is positively associated with spending on welfare and security (both correspond to expectations) and negatively with spending on education.

	Short term			Long term		
	Elite	Mass		Public goods		
	Bur.	Welf.	Secur.	Econ.	Health.	Educ.
LDV ^{ab}	-.246*** (.019)	-.247*** (.023)	-.380*** (.030)	-.373*** (.022)	-.234*** (.023)	-.160*** (.017)
d.crisis	-.011 (.076)	-.637*** (.211)	.341*** (.077)	- 3.118*** (.315)	- 3.090*** (.231)	-.888*** (.192)
crisis.lag	-.004 (.096)	1.571*** (.267)	.808*** (.099)	- 1.997*** (.394)	- 2.484*** (.281)	- 1.963*** (.244)
d.elected	.922*** (.069)	- 2.133*** (.188)	-.307*** (.082)	-.002 (.283)	- 4.068*** (.204)	-1.025 (.175)
elected.lag	.050 (.073)	-.258 (.212)	.118 (.092)	-.951*** (.293)	-.804*** (.239)	-.367** (.182)

¹² As an example, an average regional budget in 2005 is about 33 billion rubles a year, so 3% of this sum would be about 1 billion rubles or 28 million dollars according to 2005 currency rate

(Table 6 continued)

	Short term			Long term		
	Elite	Mass		Public goods		
	Bur.	Welf.	Secur.	Econ.	Health.	Educ.
d.GRP.cap	.001 (.001)	-.008*** (.003)	.003*** (.001)	-.007* (.004)	-.008*** (.003)	-.015*** (.003)
GRP.cap.lag	-.001*** (.000)	.0003 (.001)	-.002*** (.000)	.001 (.001)	-.003*** (.001)	.001 (.001)
d.Population	-.003* (.002)	-.006 (.005)	-.001 (.002)	.003 (.007)	.000 (.005)	.007 (.004)
Population.lag	.000 (.000)	.000 (.000)	.000** (.000)	-.000 (.000)	.000 (.000)	.000* (.000)
d.Urban	.003 (.002)	-.001 (.005)	-.002 (.002)	-.005 (.007)	-.009* (.005)	-.013*** (.004)
Urban.lag	-.0001 (.000)	.000 (.000)	-.0001 (.000)	.000 (.000)	.000 (.000)	-.000 (.000)
d.Perc.young	-.163*** (.029)	.535*** (.085)	-.215*** (.030)	-.306*** (.119)	.282*** (.087)	.625*** (.077)
Perc.young.lag	-.003 (.007)	-.007 (.019)	-.041*** (.007)	-.072*** (.028)	-.027 (.020)	.070*** (.018)
d.Perc.old	-.010 (.014)	.028 (.040)	-.031** (.015)	-.072 (.060)	-.010 (.043)	.008 (.037)
Perc.old.lag	-.004 (.004)	.041*** (.012)	-.020*** (.004)	-.037** (.017)	-.035*** (.012)	.002 (.010)
d.Unemployment	-.000 (.012)	.094*** (.034)	.046*** (.012)	-.052 (.050)	.018 (.036)	-.021 (.031)
Unempl.lag	-.005 (.006)	.053*** (.018)	.029*** (.006)	-.007 (.026)	.024 (.018)	-.012 (.016)
d.Tax.potential	.076 (.043)	.100 (.119)	-.009 (.044)	.179 (.179)	-.132 (.127)	-.102 (.110)
Tax.potential.lag	.038 (.026)	.060 (.071)	-.007 (.026)	.006 (.110)	.073 (.076)	.002 (.067)
d.UR.vote	-.002 (.002)	.016** (.007)	-.003 (.002)	.084*** (.010)	-.036*** (.007)	-.053*** (.006)
UR.vote.lag	-.003 (.002)	.003 (.005)	.002 (.002)	.009 (.008)	-.027*** (.006)	-.015*** (.005)
constant	1.292*** (.298)	1.675** (.767)	2.110*** (.302)	6.807*** (1.152)	6.080*** (.897)	3.209*** (.740)
R^2	0.34	0.37	0.38	0.39	0.55	0.31
N	1,037	1,037	1,037	1,037	1,037	1,037

Table 6: Results of the ECM

^a * significant at 0.1 level, ** significant at 0.05 level, *** significant at 0.01 level

^b Standard errors in parentheses

	Short term spending			Long term spending		
	Elite	Mass		Public goods		
	Bur.	Welf.	Secur.	Econ.	Health.	Educ.
crisis	-.022 (.275)	-1.207 (.795)	.067 (.387)	-2.757*** (1.070)	-2.343** (1.118)	.083 (1.094)
crisis.lag	-.218 (.282)	2.104*** (.815)	.110 (.395)	-.075 (1.095)	-.981 (1.139)	-.258 (1.135)
elected.lead	-.071 (.259)	-.640 (.716)	-1.299*** (.365)	-.591 (.966)	-.939 (1.024)	.061 (1.023)
competitiveness	.014 (.076)	-.087 (.197)	.057 (.063)	-.044 (.307)	-.335** (.164)	-.501** (.211)
elect.lead*comp	.021 (.056)	-.059 (.248)	-.136*** (.052)	-.276 (.456)	-.056 (.182)	.006 (.217)
elected	1.00*** (.253)	-3.094*** (.720)	-.309 (.360)	.433 (.972)	-3.732*** (1.014)	-1.498 (1.028)
elected*comp	-.135** (.060)	.156 (.250)	.053 (.051)	.897** (.443)	.189 (.180)	.244 (.220)
GRP per capita (bln)	-.004*** (.001)	.008*** (.002)	-.003*** (.001)	-.006 (.004)	-.013*** (.003)	.006* (.003)
Population	.000*** (.000)	-.000 (.000)	.001*** (.000)	.0002 (.001)	.000 (.000)	.001*** (.000)
Urb.populaion	-.001*** (.000)	.000 (.000)	-.001*** (.0001)	.000 (.001)	-.000 (.000)	-.001*** (.000)
Percent young	-.060** (.024)	.099 (.074)	-.048* (.028)	-.050 (.092)	-.003 (.092)	.305*** (.107)
Percent old	-.024* (.014)	.274*** (.042)	-.021 (.014)	-.067 (.044)	-.047 (.046)	.134*** (.047)
Unemployment	.021 (.021)	.137** (.060)	.063*** (.016)	-.081 (.065)	-.042 (.056)	-.155*** (.060)
Tax potential	.170*** (.044)	-.298 (.120)	.075* (.045)	.656** (.321)	.136 (.142)	-.695*** (.173)
UR vote	-.004 (.007)	.022 (.020)	-.007 (.009)	.055* (.028)	-.046* (.027)	-.001 (.029)
constant	6.783*** (.981)	-1.479 (3.024)	4.968*** (1.098)	11.670*** (3.923)	18.306*** (3.818)	7.677* (4.118)
R^2	0.56	0.35	0.60	0.22	0.54	0.31
Rho	.51	.49	.40	.44	.50	.53
N	956	956	956	956	956	956

Table 7: Results of Prais-Winsten regressions

^a * significant at 0.1 level, ** significant at 0.05 level, *** significant at 0.01 level

^b Standard errors in parentheses

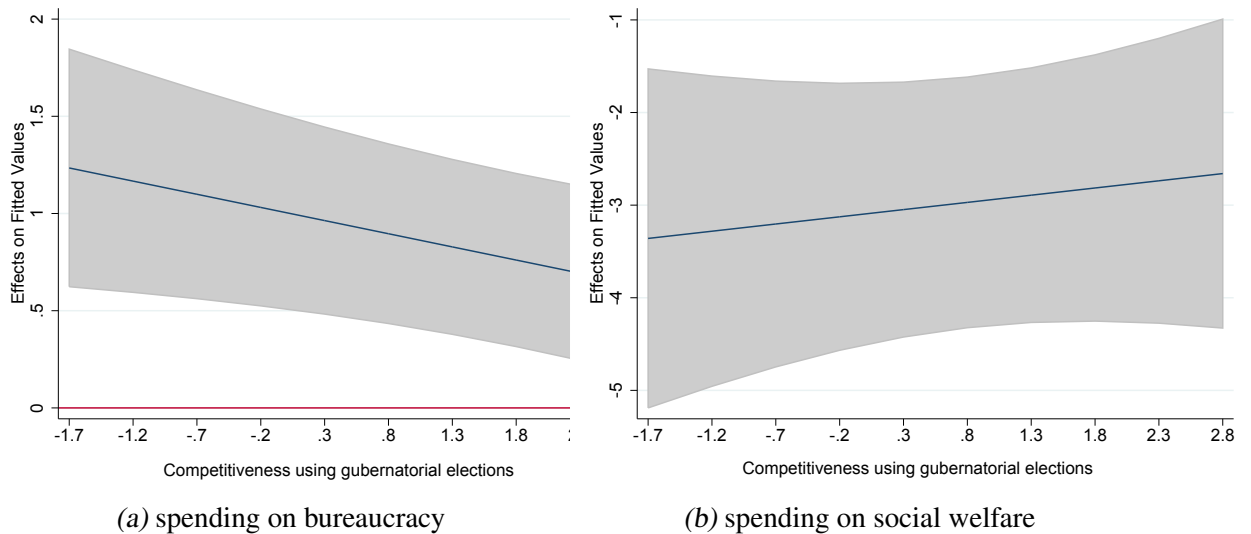


Fig. 2: Marginal effects of elections on spending

The analysis demonstrated that both the change and the level of spending are affected by the external economic shock. More specifically, in both models I see the increase of welfare spending and the decrease of spending on economic programs and health care as a response to crisis. This corresponds to Hypothesis 1, which therefore finds partial support in my data: an external economic crisis leads to a relative redistribution from long-term spending categories to short-term spending categories. The models differ in the estimated effects of crisis on security spending and spending on education. The former can be at least partially explained by the nature of the data. As discussed earlier, measuring repression through spending on law enforcement agencies is problematic. In addition to that, deeper exploration of the temporal patterns in data shows an unexpected drop in this category of spending after 2011. As for the spending on education, one of the things the results may be describing is the specific nature of this kind of spending compared to spending on health care, with which they are generally considered together. The share of fixed costs (mostly public workers' salaries) is higher in education, whereas spending on health care more often includes buying modern equipment and materials, which can be more easily cut (or made de facto the responsibility of the patient), which explains that health care spending responds more clearly to the crisis.

The effect of elections should be more extended in time. I discover this kind of effect using the Prais-Winsten regression: focusing on two types of spending as specified in the theory, I find that spending on social programs is lower when the top regional executive is elected, while spending on bureaucracy is higher. That means redistribution in favor of elite groups at the expense of mass social groups and supports the hypothesis that elections in the Russian regions function in the large part as an elite management mechanism. Elections create uncertainty for the incumbent, which tries to manage it by ensuring the support of elite groups.

Finally, regime competitiveness was shown to be important for redistribution strategies - higher competitiveness combined with the period of elections leads to even lower spending on social welfare and higher spending on bureaucracy. That is, it doesn't change the sign of effect, but influences its size (exactly as predicted). In sum, I find partial support for Hypothesis 1 and full support for Hypotheses 2b and 3.

Conclusion

This research started with the position that nondemocratic regimes face various challenges to their stability, and these can lead to various outcomes (stabilizing or destabilizing, liberalizing or deliberalizing). I argued that one of the factors determining the outcome is not just the nature of the challenge or the environment, but the regime's reaction to it and its ability to effectively handle it using available policy instruments.

Examining public spending as one of such policy instruments, I analyzed how subnational hybrid regimes in Russia responded to two different types of challenges. The first is the internal political challenge of elections, which creates a moment of uncertainty as the incumbent faces pressure both from the elites and the masses. The second is an external economic crisis, which puts strains on any regime, but is argued to be a moment of especially profound vulnerability for non-democracies.

I show that the economic crisis is associated with a decrease of spending on supporting the economy and health care and an increase of spending on social welfare. That corresponds to the expected decrease of long-term and relative increase of short-term spending, as the crisis affects both the pool of available resources and the need for them, and makes the immediate survival pressures more important than long-term development and investment in human capital. Elections were shown to have a positive effect on spending on the bureaucracy and a negative effect on mass social welfare programs. This supports the hypothesis that elections are used for elite management - elected leaders redistribute resources to elite groups to ensure their cooperation.

While the framework of comparative research at subnational level has many advantages, it raises the question of generalizability. The conducted analysis definitely shed light on how subnational regimes in Russia react to popular elections of the executive and global economic crisis. These findings should be valid for the national level as well, given that I controlled for the major differences between regional and national politics. I would argue that the trade-off between long-term and short-term spending during economic crisis will reproduce irrespective of country and political regime, and we should see the same pattern. As for elections, the presence of two alternative theories for hybrid regimes alone suggests there will be more national variation and factors determining the choice of specific redistribution strategy. Yet methodologically, the proposed scheme proved to be a useful instrument in analyzing policy choices, and could be used in different contexts. That is, the two-dimensional space which includes different time horizons (long-term vs short-term spending) and redistribution to different groups (in the most general case, elite vs mass groups) can be an informative analytical tool.

The starting point of my theory was that the autocrat wants to maintain power and because of that desire adopts certain survival strategies in response to various challenges.

Therefore, I focused on what the autocrat considers important in different situations and how she acts. The next step is examining the effects of these choices. This will connect this project with the existing theory on regime survival and answer the question of whether some strategies (even if we are talking only about budget redistribution) are associated with higher probability of regime survival, and what are the effects (liberalizing or deliberalizing) of particular spending choices.

APPENDIX A: BUDGET LINES INCLUDED INTO SPENDING DATABASE

Year	Category
2001	Head of state, head of the regional executive
	Regional executive
	Local government
	Law enforcement agencies
	Industry, energy generation, construction
	Agriculture
	Water resources management
	Forestry
	Motor transport
	Rail roads and transportation
	Water transport
	Transport other
	Communication
	Information technologies
	Pre-school education
	School education
	Health care
Social policy	
2002	Head of state, head of the regional executive
	Regional executive
	Local government
	Law enforcement agencies
	Industry, energy generation, construction
	Agriculture
	Water resources management
	Forestry
	Transportation, communication, information technologies
	Pre-school education
	School education
	Health care
	Social policy

(Appendix A continued)

Year	Category
2003	Head of state, head of the regional executive
	Regional executive
	Local government
	Law enforcement agencies
	Industry, energy generation, construction
	Agriculture
	Water resources management
	Forestry
	Transportation, communication, information technologies
	Pre-school education
	School education
	Health care
	Social policy
2004	Head of state, head of the regional executive
	Regional executive
	Local government
	Law enforcement agencies
	Industry, energy generation, construction
	Agriculture
	Water resources management
	Forestry
	Transportation, communication, information technologies
	Pre-school education
	School education
	Health care
	Social policy

(Appendix A continued)

Year	Category
2005	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Health care
	Pensions
	Social services delivery
	Social welfare
	Foster care, custody
	Social policy research
Social policy - other	
2006	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Health care
	Pensions
	Social services delivery
	Social welfare
	Foster care, custody
	Social policy research
Social policy - other	

(Appendix A continued)

Year	Category
2007	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Health care
Social policy	
2008	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Inpatient care
	Outpatient care
	Emergency services
	Sanatoriums, prevention and recovery facilities
	Donated blood management
Outpatient care in hospitals	
Social policy	

(Appendix A continued)

Year	Category
2009	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Inpatient care
	Outpatient care
	Emergency services
	Sanatoriums, prevention and recovery facilities
	Donated blood management
	Outpatient care in hospitals
Social policy	
2010	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Inpatient care
	Outpatient care
	Emergency services
	Sanatoriums, prevention and recovery facilities
	Donated blood management
	Outpatient care in hospitals
Social policy	

(Appendix A continued)

Year	Category
2011	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Inpatient care
	Outpatient care
	Emergency services
	Sanatoriums, prevention and recovery facilities
	Donated blood management
	Outpatient care in hospitals
Social policy	
2012	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Inpatient care
	Outpatient care
	Emergency services
	Sanatoriums, prevention and recovery facilities
	Donated blood management
	Outpatient care in hospitals
Social policy	

(Appendix A continued)

Year	Category
2013	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Inpatient care
	Outpatient care
	Emergency services
	Sanatoriums, prevention and recovery facilities
	Donated blood management
	Outpatient care in hospitals
Social policy	
2014	Head of the regional executive, head of local administration
	Regional executive, local administration
	Law enforcement agencies
	Economy - general issues
	Fuel and energy generation
	Replacement of natural reserves
	Agriculture and fishery
	Water resources management
	Forestry
	Transportation
	Communications and information technologies
	Pre-school education
	School education
	Inpatient care
	Outpatient care
	Emergency services
	Sanatoriums, prevention and recovery facilities
	Donated blood management
	Outpatient care in hospitals
Social policy	

APPENDIX B: CODEBOOK

Variables/ comments	Values/ measurement	Code name	Time span	Source
Budget data				
Total spending (in year X for region Y)	Thousand rubles	total	2001-2014	Author's estimate (Federal treasury reports)
Healthcare	Category, thousand rubles	health	2001-2014	
Education	Category, thousand rubles	educ	2001-2014	
Social policy	Category, thousand rubles	socpol	2001-2014	
Bureaucratic apparatus	Category, thousand rubles	bureau	2001-2014	
Law enforcement/ Security	Category, thousand rubles	secur	2001-2014	
Supporting regional economy	Category, thousand rubles	econ	2001-2014	
Political variables				
Regional leader appointed or elected	1 (elected) for years 2001-2004 and 2013-2014, 0 (appointed) for years 2005-2012	elected	2001-2014	Author's estimate
Federal elections - legislative ("party of power" performance in the region)	Edinstvo vote in 1999, UR vote in 2003, 2007, 2011	ed_vote1999, reg_ur2003, reg_ur2007, reg_ur2011, ur_vote (pulled variable, vote share of the party of power in the most recent elections, percent)	2001-2014	1999 - Author's estimate (Central electoral commission), 2003-2011 - ICSID database (Central electoral commission)

(Appendix B continued)

Variables/ comments	Values/ measurement	Code name	Time span	Source
Regional legislative elections	Previous elections: winner, runner up, winner's share of votes, runner up's share of votes	reg_leg_win, reg_leg_run, reg_leg_winshare, reg_leg_runshare	2003-2014	Author's estimate (Central electoral commission, Reuter (2013))
Regional elections	Most recent elections: winner's margin of victory	margin	2001-... (gubernatorial elections up to the first PR legislative elections in the region)	Author's estimate (media publications ¹³)
Auxiliary variable whether margin contains values for the latest legislative or gubernatorial elections	1 (legislative) or 0 (gubernatorial)	legislative	2001-2014	Author's estimate
Regional regime competitiveness based on gubernatorial and legislative elections	Centered and scaled (to corresponding means and sd) values of the "margin"	comp1	2001-2014	Author's estimate
ID variables				
Region's unique ID		reg_id	2001-2014	
Region's name (transliterated)		reg_translit	2001-2014	
Year of observation		year	2001-2014	

¹³ large portion of information available through <http://www.politika.su/vybory/>

(Appendix B continued)

Variables/ comments	Values/ measurement	Code name	Time span	Source
Okrug (subregional units that were included into bigger regions during administrative reform (and dropped from analysis))	1 or 0	okrug	2001-2008	Author's estimate
Region's characteristics				
Area	10 thousands of square kilometers	area_10th	2009, 2012	Recalculated from ICSID database (Rosstat, Russian Regions: Basic characteristics of subjects of the Russian Federation)
Regional bureaucracy size	Number of employees in regional executive and local administrations	exec	2001-2014	Author's estimate (Rosstat, Russian Regions, Social and economic indicators, Labor)
Unemployment level (based on ILO methodology)	Percent unemployed	reg_levelofunempl	2001-2014	ICSID database (Rosstat central statistical database, Regional block Employment and wages)
Population younger than working age (working age 16-59 for males, 16-54 for females)	In proportion to the number of people of working age (percent)	youth_perc	2001-2014	Recalculated from ICSID database (Rosstat, Russian Regions, Population for 2010-2013; Rosstat Central Statistical Database for 1998-2009)

(Appendix B continued)

Variables/ comments	Values/ measurement	Code name	Time span	Source
Population older than working age	In proportion to the number of people of working age (percent)	pens_perc	2001-2014	Recalculated from ICSID database (Rosstat, Russian Regions, Population for 2010-2013; Rosstat Central Statistical Database for 1998-2009)
Population as of January 1	Total population, thousand	pop_th	2001-2014	Recalculated from ICSID database (Un-SIS, FSSS, Demographic indicators)
	Urban population, thousand	urbpop_th	2001-2014	Recalculated from ICSID database (Un-SIS, FSSS, Demographic indicators)
Tax capacity index	Region's tax capacity in relation to national average	reg_inp	2001-2014	ICSID database (Ministry of finance, Interbudgetary relations Methodology and results of federal transfers distribution)
Gross regional product, basic prices	million rubles	reg_grp	2001-2014	ICSID database (Rosstat, Russian Regions, Gross regional product for 2000-2009. UniSIS for 2010-2014)
Average price of the fixed basket of goods in year X for region Y	rubles	reg_gdsfixed	2001-2014	ICSID database (Rosstat, Russian Regions, UniSIS)
Gross regional product, comparable prices	billion rubles	grp_bln	2001-2014	Author's estimate

APPENDIX C: RESULTS OF ROBUSTNESS CHECKS

Share of GRP as dependent variable

	Short term			Long term		
	Elite	Mass		Public goods		
	Bur.	Welf.	Secur.	Econ.	Health.	Educ.
LDV	-.113*** (.010)	-.228*** (.021)	-.242*** (.022)	-.393*** (.024)	-.173*** (.018)	-.096*** (.011)
d.crisis***	.080 (.028)	.040 (.083)	.127*** (.023)	-.487** (.214)	-.537*** (.081)	.122* (.073)
crisis.lag	.101*** (.036)	.563*** (.105)	.234*** (.029)	-.143 (.272)	-.350*** (.102)	-.073 (.093)
d.elected	.363*** (.026)	-.250*** (.075)	.045** (.022)	.681*** (.194)	-.638*** (.073)	.186*** (.066)
elected.lag	.008 (.027)	-.081 (.078)	.108*** (.023)	.051 (.202)	-.068 (.077)	-.096 (.069)
d.GRP.cap	-.001*** (.000)	-.006*** (.001)	.000 (.000)	-.008** (.003)	-.006*** (.001)	-.011*** (.001)
GRP.cap.lag	-.000 (.000)	-.000 (.000)	-.000** (.000)	.001 (.001)	-.001* (.000)	.000 (.000)
d.Population	-.000 (.001)	-.002 (.002)	-.000 (.000)	.003 (.005)	-.001 (.002)	.000 (.002)
Population.lag	-.000 (.000)	-.000*** (.000)	-.018 (.000)	-.000** (.000)	.000 (.000)	-.000*** (.000)
d.Urban	.001 (.001)	.002 (.001)	.000 (.000)	-.00 (.005)	.001 (.002)	.000 (.002)
Urban.lag	.000 (.000)	.000*** (.000)	.018 (.000)	.000* (.000)	.000 (.000)	.000** (.0001)
d.Perc.young	-.025** (.011)	.195** (.033)	-.027*** (.009)	.048 (.083)	.126*** (.031)	.145*** (.029)
Perc.young.lag	.002 (.006)	.019 (.007)	-.009*** (.002)	-.005 (.019)	.002 (.007)	.022*** (.007)
d.Perc.old	-.007 (.005)	-.007 (.016)	-.001 (.004)	-.065 (.041)	.004 (.015)	-.019 (.014)
Perc.old.lag	-.006 (.002)	-.010 ** (.004)	-.008*** (.001)	-.063*** (.012)	-.023*** (.004)	-.026*** (.004)
d.Unemployment	-.007 (.005)	.066*** (.013)	.027*** (.004)	-.054 (.035)	.006 (.013)	-.016 (.012)
Unempl.lag	-.008*** (.002)	.009 (.007)	.007*** (.002)	-.030* (.018)	-.003 (.007)	-.015** (.006)
d.Tax.potential	.009 (.016)	.072 (.047)	.001 (.013)	-.116 (.123)	-.227 (.046)	-.060 (.042)
Tax.potential.lag	-.013 (.010)	.004 (.028)	-.017** (.008)	-.017 (.074)	-.003 (.028)	-.016 (.025)
d.UR.vote	-.001 (.001)	.002 (.003)	-.000 (.001)	.009 (.007)	-.011*** (.002)	-.014*** (.002)

(Table 10 continued)

	Short term			Long term		
	Elite	Mass		Public goods		
	Bur.	Welf.	Secur.	Econ.	Health.	Educ.
UR.vote.lag	-.002 (.0001)	-.004** (.002)	-.001** (.001)	-.001 (.005)	-.010*** (.002)	-.009*** (.002)
constant	.450*** (.108)	.947*** (.304)	.587*** (.086)	4.062*** (.798)	1.911*** (.312)	1.764*** (.275)
R^2	0.34	0.25	0.33	0.25	0.30	0.25
N	1,037	1,037	1,037	1,037	1,037	1,037

Table 10: Robustness check: results of the ECM with percent GRP as dependent variable

^a * significant at 0.1 level, ** significant at 0.05 level, *** significant at 0.01 level

^b Standard errors in parentheses

	Short term spending			Long term spending		
	Elite	Mass		Public goods		
	Bur.	Welf.	Secur.	Econ.	Health.	Educ.
crisis	.041 (.088)	-.141 (.196)	.033 (.079)	-.407 (.301)	-.402* (.224)	.242 (.229)
crisis.lag	-.003 (.098)	.625*** (.208)	.041 (.086)	.318 (.343)	-.029 (.239)	.222 (.240)
elected.lead	.000 (.086)	-.212 (.192)	-.274*** (.080)	-.441 (.281)	-.210 (.209)	-.126 (.235)
competitiveness	.021 (.031)	.056 (.078)	.018 (.025)	.142 (.173)	-.038 (.064)	-.089 (.066)
elect.lead*comp	-.011 (.042)	.024 (.100)	-.086*** (.024)	-.404 (.254)	-.014 (.091)	-.005 (.068)
elected	.341*** (.085)	-.551*** (.195)	-.029 (.079)	.536* (.290)	-.647*** (.205)	-.041 (.234)
elected*comp	-.005 (.043)	-.000 (.098)	.031 (.026)	.662*** (.249)	.003 (.091)	.053 (.069)
GRP per capita (bln)	-.001*** (.000)	.000 (.001)	-.001*** (.000)	-.003 (.002)	-.004*** (.001)	-.001 (.001)
Population	-.000*** (.000)	-.001*** (.000)	-.000*** (.000)	-.001*** (.000)	-.001*** (.000)	-.002*** (.000)
Urb.populaion	.0003*** (.000)	.001*** (.000)	.000*** (.000)	.001*** (.00)	.001*** (.000)	.002*** (.000)
Percent young	.021 (.015)	.118*** (.029)	.000 (.011)	.118** (.049)	.101*** (.033)	.237*** (.031)
Percent old	-.040*** (.008)	.032** (.015)	-.010*** (.004)	-.103** (.044)	-.063*** (.018)	-.066*** (.022)
Unemployment	-.004 (.014)	.086** (.034)	.038*** (.009)	-.084 (.083)	-.027 (.024)	-.073*** (.027)
Tax potential	-.001 (.065)	-.074 (.056)	.008 (.016)	-.045 (.304)	-.137 (.111)	-.209 (.164)
UR vote	.000 (.003)	.007 (.006)	-.001 (.002)	.003 (.011)	-.008 (.007)	.008 (.007)
constant	2.135*** (.587)	-2.022 (1.332)	.841** (.394)	4.012 (2.591)	3.838*** (1.332)	1.638 (1.471)
R^2	0.44	0.40	0.54	0.17	0.46	0.51
Rho	.67	.56	.53	.54	.65	.63
N	956	956	956	956	956	956

Table 11: Robustness check: results of Prais-Winsten regressions with percent GRP as dependent variable

^a * significant at 0.1 level, ** significant at 0.05 level, *** significant at 0.01 level

^b Standard errors in parentheses

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