

Substituting Distribution for Growth: The Political Logic of Intergovernmental Transfers in the Russian Federation.*

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Abstract

Given limited resources and economic realities, how do politicians distribute monetary transfers in order to retain office? Previous work has largely focused on two models – a core model of rewarding loyal supporters and a swing model of purchasing the support of easily swayed voters. Empirical results have proven mixed, however. In this article, we argue that these mixed results are due to economic factors, which condition politicians' distributive strategies. In our model, we consider that politician and voters are involved in a repeated game, where past expectations condition future strategy. Current (core) supporters who receive few benefits and perceive themselves worse off than other, less loyal, groups are likely to be less loyal themselves tomorrow. In our model, politicians avoid this by providing their supporters consumption benefits directly, in the form of transfers, or indirectly, via strong economic growth. Where economic growth is good, politicians can distribute less to core supporters, who benefit from the rising economy. Where economic growth is weak, however, politicians make transfers to their core supporters to ensure future loyalty. We test our theory using data on federal transfers from the Russian Federal government to 78 Russian Regions from 2000–2008.

Key words: competitive autocracy, dominant party systems, distributive politics, swing voters, core voters, federal transfers, Russia.

JEL codes: D72, H77, R50

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1 Introduction

Given limited resources and economic reality, how do political leaders allocate government largess to voters? In both genuinely competitive and more autocratic settings, distributing resources to voters is a key tool for securing and maintaining support (Cox (2010), Magaloni (2006)). Studies of distributive politics across a wide variety of historical and institutional settings have been dominated by two competing theoretical models of how politicians target such funds: the “core” and “swing voter models. In the former, politicians direct transfers to loyal supporters, whereas in the latter politicians target the easily persuadable (Cox and McCubbins (1986), Lindbeck and Weibull (1987)).¹ The empirical record is mixed, however: some studies find support for the core model, while others find support for the swing model.²

In this paper, we suggest that the seemingly contradictory results of existing research stem from a binary view of distributive politics that treats core and swing models as mutually exclusive. This view ignores contextual factors that make one strategy or the other superior in different places within a given electoral cycle. We also argue that the possibility of mixed strategies is further obscured by the tendency of existing work to test the implications of individual-level voter choice models on distribution across regions.³ By contrast, we focus explicitly on the decisions of national level politicians allocating money across *sub-national units* with differing contextual features. In our model, national politicians may transfer to both supportive regions (core) and those in which elections are close (swing) at any time, but do so based on regional level economic growth and the anticipated effects of it on the distribution of voter support. These allocations are coarse, so national politicians must rely on regional agents with superior

¹For two very important exceptions, however, see Diaz-Cayeros, Estevez, and Magaloni (2012), Vaishnav and Sircar (2011). These models suggest the possibility that both dynamics occur simultaneously but vary according to contextual factors.

²Examples of studies finding support for the core voter hypothesis include Ansolabehere and Snyder (2006), Brusco, Nazareno, and Stokes (2004), Calvo and Murillo (2004), Hiskey (2003), Jarocinska (2010), Larcinese, Leonzio, and Testa (2006), Popov (2004), while Dahlberg and Johansson (2002), Herron and Theodos (2004), Kwon (2005), Schady (2000), Stokes (2005) find support for the swing voter hypothesis.

³See footnote 8 for examples. For a trenchant critique of this approach, c.f. Magaloni (2006), Stokes (2005), and Cox (2010). We thank an anonymous reviewer for emphasizing this point.

local knowledge for more fine-grained targeting.⁴ We argue that for national politicians the key decision is not *whether* to transfer funds to core or swing regions, but *when* to target each type.

To explain the targeting of regional transfers, we advance a novel argument about the determinants of regional level support for incumbents in weakly democratic and electoral autocratic settings. In our model, voters vote based on individual consumption – as enabled by transfers and the strength of the regional economy – and party affinity, which is endogenous to consumption. Politicians know that in a region with a given distribution of party affinity, a set amount of transfers will allow regional agents to produce a given vote share. Consumption outcomes can shift this distribution, altering the costs of winning future elections. During good economic times, consumption is naturally high, so core voters remain loyal absent transfers. During economic downturns, however, consumption declines make the support of party loyalists shaky, necessitating transfers to maintain historical rates of support over time. This model has important implications for the literature on distributive benefits and electoral politics, chiefly by allowing existing theory and contradictory empirical findings to be reconciled.

To test our theory, we use longitudinal data on sub-national transfers across 78 of Russia’s regions from the period of 2000 to 2008. As with existing literature, our primary concern is with legislative elections, although we provide additional evidence and demonstrate the generality of our theory using data on presidential elections.⁵ In both cases, incumbent, national-level politicians faced the problem of distributing resources to the regions in order to win elections. Russia offers an ideal test for our theory for several reasons. First, focusing on variation within a single country diminishes the problem of unobserved heterogeneity between units. Second, and related, the large degree of variation in political and economic outcomes across Russia’s 78 regions provides a good testbed for examining the contextual theory of distributive politics we propose. Finally, Russia’s political system became more autocratic over

⁴It is important to note at the outset that we do not model or explore sub-national level distributive decisions in this paper.

⁵It is important to note that during part of our period of interest, elections were held under a mixed system: half of each regions’ seats were allocated under proportional representation and half in single-member districts. We choose focus on the former and discuss the rationale for this choice in section 2.3.

the time period we examine. Although not our primary concern, to the extent that we find that there are no shifts in the rationale behind distributive politics, we add to a growing body of evidence indicating that distributive politics in autocracies with elections and in weakly institutionalized democracies follow similar logics (Blaydes (2010), Magaloni (2006)).⁶

Our paper makes three contributions to the literature on distributive politics. First, theoretically, our model helps to reconcile competing predictions in existing work. If our argument is correct and distributive strategies are conditional on economic outcomes, then varying levels of economic growth sometimes favor targeting loyal, core regions and sometimes less loyal, swing regions in order to maximize vote share. This provides a potential explanation for why the empirical records of core and swing voter models are so mixed. Second we contribute empirically by showing evidence consistent with our theory based on Russian elections. On the one hand, we find that among regions with low economic growth rates, larger transfers are given to core regions: those that provide the highest vote shares for the United Russia party. On the other hand, among regions with faster economic growth, supporters are less well-rewarded. Consistent with swing voter models, fast-growing regions where United Russia receives less support (i.e. swing regions) receive larger transfers than those core regions where United Russia's vote share is high. Crucially, we also show that the range of this effect across regions is substantively quite large and equal to 15% of average regional transfers per capita.

Finally, we also make an empirical contribution by incorporating a longitudinal element into our study. Recent studies have used novel distributive programs as an identification strategy in order to solve identification issues inherent in studying the relationship between transfers and voting.⁷ While a valuable identification strategy, this approach obscures the importance of time-varying contextual factors like economic growth that condition strategies. This weakens generality and helps to reinforce a binary

⁶Although our theory generalizes to highly institutionalized democratic settings, following Stokes (2009) we focus on weakly institutionalized settings, where programmatic appeals are less important, in order to isolate the effects of distributive politics.

⁷c.f. Dahlberg and Johansson (2002), Herron and Theodos (2004), Magaloni (2006).

view of distributive strategies. A longitudinal approach, resolves this problem. Moreover, unlike previous longitudinal work on federal transfers in Russia, we acknowledge potential endogeneity problems and correct for them (c.f. Jarocinska (2010), Popov (2004), Treisman (1998, 1996)).

The next section reviews existing models of distributive politics, introduce our theory, and provide some context on the Russian case. Section 3 presents our data, discusses identification, and presents our empirical strategy. Section 4 presents our main results and robustness checks. Section 5 concludes.

2 Modeling Strategic Transfers

Two models predominate in the literature on distributive politics: the swing (Lindbeck and Weibull (1987)) and core voter models (Cox and McCubbins (1986)). Although developed to explain transfers *within* districts to different groups of voters, these models have been widely adapted to (and tested with data from) multi-district settings.⁸ Because we use these models as the foundation of our own, we briefly review their features in this section. Subsequent sub-sections introduce our model, which extends these classic models to explain allocation across regions using a mixed swing-core strategy.

Suppose a two party system in which parties compete for office during a single period and can make transfers to voters subject to budget constraints.⁹ Both swing and core voter models begin from the premise that party leaders are office-seeking and that they must maximize their vote share to win. Both also use a common voter utility function, which includes three major variables: consumption (anticipated or received transfers), ideological affinity towards party i 's competitor j , and the voter-specific relative importance of affinity versus consumption. Voters support party i if their utility for doing so (after trans-

⁸Examples of the use of sub-national, multi-district data in the recent literature includes, for example, (Ansolabehere and Snyder (2006), Calvo and Murillo (2004), Diaz-Cayeros, Estevez, and Magaloni (2012), Herron and Theodos (2004), Jarocinska (2010), Kwon (2005), Magaloni (2006), Popov (2004), Schady (2000)).

⁹As Persson and Tabellini (2000) note, the two party set up is made without loss of generality and the model extends to a setting with additional parties.

fers) is greater than their affinity for party j . Ideological affinity is exogenously given and assumed to be fixed during the single period of the game, so parties can only manipulate voters' utility through transfers.

In the canonical models, transfers are a coarse instrument, so party leaders cannot target transfers at individuals, only *groups* of individuals with similar characteristics. Models assume that these groups differ according to some generic, exogenously given characteristic (occupation, geographic location, etc.). While ideological affinity for each group is heterogeneous, the *distribution* of ideological affinity within each group varies systematically with its defining characteristic, allowing politicians to roughly predict, *ceteris paribus*, their vote share from each group. While party affinity is conceptualized as continuous, existing work divides groups into three ideal type categories based on the distribution of their ideological affinity for ease of modeling and exposition.¹⁰ Groups with a distribution favorable to party i form its core supporters, those with a distribution favorable to its opponent j are opposition voters, and those with weak affinity for both form the pool of swing voters. Transfers provide a means of shifting established distributions of party affinity in favor of party i . Knowing the distribution of party affinity for a given group, party i can assign transfers to it and roughly predict the resulting increase in vote share (Dixit and Londregan (1996): 1137 – 1138).¹¹ The problem of distributive politics according to these models is therefore to decide which *group* of voters get transfers in order to maximize votes (*c.f.* Cox and McCubbins (1986), Lindbeck and Weibull (1987)).¹²

Making no additional assumptions beyond this basic model, Lindbeck and Weibull (1987) argue that

¹⁰This assumption comes without loss of generality: model results continue to hold if one treats party affinity as continuous, *c.f.* Dixit and Londregan (1996).

¹¹Formally, for a group with a given distribution of ideological affinity for party j there is a cutpoint in utility X_i above which voters will vote for party i . The percentage of votes is straightforwardly equal to the percentage of voters in the distribution above this cutpoint. Transfers shift this cutpoint, convincing voters to vote for party i who would otherwise not do so. *See also* (Dahlberg and Johansson (2002): 30).

¹²This formulation is quite common. For examples of recent models which focus on transfers to groups, *c.f.* Dahlberg and Johansson (2002), Diaz-Cayeros, Estevez, and Magaloni (2012), Dixit and Londregan (1996), Magaloni (2006), Schady (2000), Vaishnav and Sircar (2011). More recent work has also begun to explore individual targeting at the micro-level by local brokers, *c.f.* Brusco, Nazareno, and Stokes (2004), Stokes (2005), Stokes et al. (2013), Vicente and Wantchekon (2009). These models still assume that voters can be divided into core supporters and persuadable swing voters, however. Here, we are primarily concerned with decisions about how to distribute to geographic regions, leaving aside questions of micro-targeting. As such, we retain a focus on group-level distribution. We discuss this decision and its theoretical implications below.

politicians target transfers to those with weak party affinity (swing voters). Because ideological affinity is assumed to be fixed, a party's core supporters cannot credibly commit to defecting to the opposition in the event they receive nothing. Consequently, core supporters are guaranteed votes and can be safely ignored in the distributive game. In order to maximize its vote share, party i should focus transfers on swing voters, whose weak party affinity makes them relatively cheap to buy off.

The swing voter result is premised on several assumptions, however. First, the model assumes that there is a perfect one-to-one correspondence between what a party sends a group and what the group actually receives. Relatedly, voters cannot defect once they have received transfers. [Cox and McCubbins \(1986\)](#) question both assumptions, noting that transfers to groups outside a party's core – whom politicians know poorly – are inherently risky. Politicians may have difficulty understanding the tastes of swing voters, distributing benefits to specific members of these groups, or ensuring voters uphold the bargain and vote for them after getting transfers. [Dixit and Londregan \(1996\)](#) and [Cox and McCubbins \(1986\)](#) use these insights to model inefficiency in transfers, introducing wastage when targeting swing voters. Depending on the level of wastage, targeting core groups becomes a more attractive option. Second, politicians are assumed to derive utility only from votes. If politicians have a secondary interest in generating rents – conditional on winning an election – then they may make transfers to core supporters to do so. [Ansolabehere and Snyder \(2006\)](#) and [Vaishnav and Sircar \(2011\)](#) develop models and provide empirical evidence that such rent-seeking motives can induce transfers to core voters.

The final assumption of the [Lindbeck and Weibull \(1987\)](#) model is that elections are a single period game in which ideology is fixed and core voters cannot punish politicians for offering them nothing. Relaxing this assumption can generate core, rather than swing, voter results. [Diaz-Cayeros, Estevez, and Magaloni \(2012\)](#) develop a model in which affinity is endogenized over a repeated election game. In their model, core supporters today become swing voters tomorrow if they are not given transfers, particularly in settings – like much of the developing world – where ideological and programmatic party platforms

are hard to sustain. As [Cox and McCubbins \(1986\)](#) point out, “it seems irrational in the long-run for any group to be totally unresponsive to redistributions of welfare” (382). When ideological affinity is thus endogenized, politicians with sufficiently long time horizons transfer to their core supporters today in order to retain support tomorrow. [Diaz-Cayeros, Estevez, and Magaloni \(2012\)](#) argue that this strategy is rational, because buying support from core voters is cheaper than doing so from swing voters. Preventing the proportion of core voters from increasing keeps the costs of winning future elections down.

2.1 Vote Choice and Economic Growth

Building on the basic framework introduced above, our model introduces three extensions: two dealing with individual voters and a third which extends the model to distribution across regions. First, drawing on existing work on economic voting, we argue that voters’ consumption outcomes depend on more than just transfers, it is also driven by the state of the economy ([Lewis-Beck \(1988\)](#), [Lewis-beck \(2000\)](#)). Theoretically and empirically, a large body of research has shown that voters’ reward (or punish) politicians for the state of the economy ([Duch and Stevenson \(2006\)](#), [Erikson, MacKuen, and Stimson \(2002\)](#), [Reuter and Gandhi \(2011\)](#), [Treisman \(2011\)](#)). Intuitively, this literature suggests that voters reward politicians for a strong economy, because they expect that a strong economy will lead to higher personal consumption and welfare ([Lewis-beck \(2000\)](#)). Thus, the narrow focus on transfers in existing models of distributive politics ignores an important way in which politicians can generate support: good economic stewardship.¹³ Drawing on this insight, in our model a voter’s consumption is a function of both transfers and the state of the economy, which act as rough substitutes. So long as it can take credit for economic growth, party i can “persuade” voters using either transfers or a successful economic record.

Second, we treat elections as a multi-period game, in which parties participate in many elections over time and voters’ ideological affinity is endogenous. Following [Diaz-Cayeros, Estevez, and Magaloni](#)

¹³[Magaloni \(2006\)](#) is an important exception. While her voters consider the state of the economy, however, it shapes the relative importance of consumption for voters rather than their perceived level of consumption.

(2012), we argue that voters' ideological affinity for party i is a constantly updating function of consumption (past and present) attributable to i . Logically, where party i provides voters with sufficiently high consumption today, their ideological affinity for the party is stable or grows stronger tomorrow. Where party i provides too little consumption, however, voters' ideological affinity shifts against it. An important implication of this is that politicians now face an opportunity cost for transfers. On the one hand, transfers to swing voters over time increase vote share today. They may also shift swing voters' affinity enough to make them part of the core tomorrow, decreasing the cost of future electoral victories. On the other hand, failure to provide for core voters today can erode their affinity, turning them into swing voters tomorrow and increasing the cost of winning. Conditional on their time horizons, parties must therefore temper their desire to expand vote shares today with desire to win elections cheaply tomorrow.

Given endogenous shifts in party affinity and multi-period elections, how would we expect parties with long time horizons to target their transfers? We argue that parties do not target transfers according to the marginal effect of transfers on affinity, because this creates perverse incentives. Suppose swing voters are targeted by party i if their affinity towards i (after transfers) shifts towards i faster than core voters' affinity shifts away (due to lack of transfers). Over the long term, party i can count on the entrance of swing voters into the core to compensate for their loss of supporters, thus holding down the overall costs of transfers. This strategy relies on irrationality on the part of voters, however. A swing voter, knowing that she will cease to receive transfers once she is considered part of the core, has no incentive to show loyalty to the party. Core voters, by contrast, know that only swing voters gain benefits, giving them incentives to defect to secure transfers.¹⁴ To avoid this perverse cycle, we argue that parties have incentives to prioritize transfers to core voters, which encourages loyalty rather than defection.

Drawing together our discussion of consumption and endogenous party affinity, we can now articulate our model's individual-level predictions: core voters receive transfers when economic times are bad, while

¹⁴For a more in depth discussion of this logic, see Diaz-Cayeros, Estevez, and Magaloni (2012), who rely on a similar logic in their model of endogenous party affinity.

swing voters are targeted for transfers when times are good. This is because when times are good, the strong state of the economy guarantees core voters sufficient consumption to keep them loyal in the future. This frees up funds to make transfers to swing voters, which garners support today and can increase the number of core voters tomorrow. Where economic growth is slow, however, the affinity of core supporters erodes and politicians face the potential loss of their core in future elections. As these groups become swing voters, politicians lose their cheap, guaranteed votes and must pay to re-secure them. If politicians compensate core voters for poor consumption due to weak economic growth with transfers, however, they can retain their loyalty and ensure themselves a cheap, stable vote base in subsequent elections.

2.2 From Groups to Regions

While the model discussed above yields testable predictions about individual voters, recall that the main focus of this paper is transfers to *regions*. In this section, we draw a distinction between individual and regional level models. Much of the literature draws on the former in order to make inferences about what types of regions get transfers.¹⁵ As we discuss below, however, applying individual level models to regional level distributive politics requires rather strict assumptions. By contrast, we argue that national politicians use the individual model to make inferences about how economic growth (or lack thereof) shifts the distribution of party affinity within regions, altering vote shares. Transfers can be used to compensate for adverse shifts and ensure high vote shares or to induce shifts in less supportive regions.

Before turning to our model, it is worthwhile to review predictions about regional transfers in the existing literature. When examining cross-regional transfers, many studies make the assumption that the logic of targeting districts is akin to the logic of targeting voters within them. The latter is often tested with data from the former.¹⁶ This jump from individual to region relies on two strong assumptions,

¹⁵A growing number of studies analyze the adverse consequences of using geographically aggregate units to make inference about individual-level behavior, *c.f.* [Cho and Manski \(2008\)](#), [King \(1997\)](#), [King, Rosen and Tanner \(2004\)](#).

¹⁶In particular *c.f.* citations in footnote 8.

however (Cox (2010), Persson and Tabellini (2000)). First, elections must occur in a single district. Regions within that district can then be treated as distinct electoral groups with predictable distributions of party affinity, just like any other group Dixit and Londregan (1996). Targeting regions becomes akin to targeting any other group. In multi-district settings, however, regions cannot be treated as electoral groups, since elections for each region are distinct.

Second, following Dahlberg and Johansson (2002) and Schady (2000), others assume that there is a direct correspondence between electoral outcomes in a region and individual-level support for the incumbent. Schady (2000), for example, argues that the probability a randomly selected voter in a given region votes for party i is equal to the vote share of party i in that region.¹⁷ Dahlberg and Johansson (2002) notes that given an underlying distribution of ideological preferences in a region a set transfer will establish a cutpoint between those voting for and against party i . If the distribution of voters around this cutpoint is symmetric and single-peaked, there is a one-to-one correspondence between the closeness of the last election and the density of voters around the cutpoint. Both logics are used to make inferences on the proportion of core and swing voters in a region based on previous vote shares.

Applying the standard models to the regional level yields the predictions:

Prediction 1. *Politicians transfer to swing regions, where elections have been close in the past.*

Prediction 2. *Politicians transfer to core regions, where their party has dominated elections in the past.*

In this paper, we shy away from assumptions about the distribution of core and swing voters within regions. Instead, we argue that past electoral results inform national politicians' expectations about the distribution of party affinity in a given region. We also make no claims about which individuals get transfers. Rather, in our model, transfers are allocated to regions and distributed to individual voters by local intermediaries, who are responsible to national politicians.¹⁸ We assume that based on past electoral

¹⁷*c.f.* Deacon and Shapiro (1975) for a more formal treatment.

¹⁸Studies of these local brokers are a rapidly expanding field of political science research. Prominent recent work includes,

results, national politicians know that *ceteris paribus* local brokers can produce a given vote share based on a set level of transfers. This vote share is a function of the distribution of swing and core voters in the region. Thus, changes over time in the underlying distribution of party affinity for central politicians can increase (or decrease) the amount needed to achieve this given vote share. For politicians at the center, the problem of distributive politics is therefore how to allocate funds to different regions in order to maximize vote shares *given potential changes in the distribution of party affinity* over time.

Drawing together this discussion, the regional logic of our theory is as follows. During each period t incumbent, vote-maximizing national politicians can use transfers to increase their vote share. These politicians know that given the skill of regional brokers and an existing distribution of party affinity in a region, a given level of transfers should produce vote share X . They also know, however, that economic outcomes during the period $(t - 1)$ can alter the distribution of party affinity in a region. Where economic outcomes are poor, core voters do not receive sufficient consumption. According to our individual level model, this will gradually turn them against the incumbent over time. At the regional level, this results in aggregate shifts in the distribution of party affinity in a given region against the incumbent in subsequent elections. In order to preserve a favorable distribution of party affinity in slow growing core regions and prevent future increases in the costs of winning elections, therefore, incumbents must use transfers. By contrast, where economic outcomes are good, regional party affinity stays the same or tilts in favor of the incumbent, since core voters are satisfied with their consumption. Depending on electoral incentives, this can free up funds to be spent on “swing” regions, where aggregate ideological affinity is not as favorable to the incumbent, or captured as rents. Which of the two prevails depends on the extent to which incumbents feel the need to expand their electoral coalition. Our main hypothesis is therefore:

Hypothesis 1. *Distributive politics is conditional: core (swing) regions with slower growth and swing (core) regions with faster growth receive more (fewer) transfers.*

Finan, F. and Schechter, L.A. (2011), Frye, Reuter, Szakonyi (2014), Reuter (2013), Reuter and Robertson (2012), Stokes (2005), Stokes et al. (2013).

Before concluding this section, it is important to note that our theory should not be taken as predicting a binary distributive strategy. The novelty of our model is that it allows for a mixed strategy: politicians may make transfers to core and swing voting regions simultaneously, conditional on budget constraints.¹⁹

2.3 Russian Electoral Politics and Federal Transfers

Before moving onto our empirical analysis, it is helpful to provide some context on Russia's electoral system and its fiscal transfers during our period of study (2000–2008). Formally, Russia's president is elected in a two-round majoritarian system. As final victory is determined by the popular vote, winning presidential elections requires vote maximization and conforms to our model. Legislative elections are more complex. Prior to 2004, Russia had a mixed system of national legislative elections, in which half of the seats were allocated via proportional representation (PR) and half via single-member majoritarian districts (SMD). In 2004 the system switched to full PR. While the PR component conforms to the basic expectations of our model, the SMD component does not. Maximizing regional vote share does not necessarily lead to a favorable distribution of legislative seats in the latter case.²⁰

While we acknowledge the potential importance of the SMD component in shaping transfers prior to 2004, we choose to focus on the PR component for several reasons. First, it allows us to compare strategies across our entire period of interest, since SMD was only in effect before the reforms. Second, the SMD component does not provides information of little value for cross-regional allocation of politically motivated transfers. Most of the SMD candidates in 1999 were political independents without prior party linkages. Their support was eventually purchased through judicious distribution of committee assignments, legislative leadership positions, and policy concessions (Remington (2006), Smyth, Lowry, and Wilkening (2007)). Consequently, information about these deputies – about their loyalty, the ideological

¹⁹How politicians prioritize between slow growing core and fast growing swing regions under hard budget constraints is beyond the scope of the current paper. We address this important question in a follow up paper, however.

²⁰We thank an anonymous reviewer for calling our attention to this.

leanings of their districts, or how the 1999 results could be used to engineer later victories – would be insufficient to make effective transfers. While in the 2003 elections more SMD candidates were affiliated with parties, the abolition of SMD in 2004 rendered any information gleaned moot for future transfers.

Third, it is not clear that transfers would make a huge difference in SMD elections. Previous analyses of successful SMD candidates indicate that personal resources (incumbency, business ties, experience in regional politics) were key, as was support from regional governors (Golosov (2002), Myagkov and Ordeshook (2001)). In the former case, supplementary resources from the center would likely be marginal at best, even if well targeted. In the latter, regional governors that provided good PR results likely produced good SMD results as a by product.²¹ Rewarding the latter should ensure the former.

Finally, we argue that good results in the PR component were extremely important to creating legislative coalitions in an environment with a large number of independent deputies. Unity's (the precursor to United Russia) strong results in the PR component of elections in 1999 gave it the deputies necessary to block alternative governing coalitions. This made a strategy of buying off prominent SMD deputy factions with selective inducements both realistic and practical for securing a majority (Remington (2006), Smyth, Lowry, and Wilkening (2007)). Consequently, it would be rational to assume that resources were primarily geared towards maximizing vote shares and securing a high percentage of PR seats in the regions, which created conditions for buying off SMD deputies. Indeed, this is exactly what occurred in 2003. By the time the 2003 Duma convened, 80% of SMD deputies had joined United Russia, likely attracted by the fact that United Russia controlled fully half of the PR seats (Remington (2006)). In such an environment, it is rational to focus resources on the PR component.

Turning to transfers, it is worth noting that Russia's fiscal system has long made federal transfers an ideal tool for distributive politics. Initially in the 1990's, the most powerful regions were not fiscally dependent on Moscow, often negotiating for or outright seizing taxation powers and revenue streams

²¹Put another way, it is unlikely governors that excelled at helping candidates win SMD elections would produce weak PR results.

nominally reserved for the center. At the same time, formal requirements on the use of transfers from the federal center to the regions were largely ignored. Because regional finances during this period were governed by local priorities, massive disparities emerged in public goods provision and basic government services across regions (Fillipov, Ordeshook, and Shvetsova (2004), Hale (2003), Shleifer and Treisman (1999), Treisman (1999)). We highlight this regional discretion, because much of the literature on fiscal federalism in Russia highlights the ways in which it allowed federal transfers to serve as an important political tool. In the 1990's, transfers were used at this time to directly co-opt regional elites who could credibly threaten to touch off anti-Kremlin social unrest (Robertson (2010)). Concurrently, the central government also rewarded regions that reliably voted for then President Boris Yeltsin (Popov (2004), Treisman (1998, 1996)). Regional level spending discretion made transfers a valuable carrot.

In the 2000's, transfers maintained their importance as a political tool but became more closely tied to rewards for electoral support. Over this period, regional elites' ability to challenge the center diminished for a number of reasons. First, surging natural resource prices significantly expanded the federal government's resources, allowing it to invest in state capacity. Second, Putin passed a number of centralizing reforms that significantly curtailed regional power. Fiscal reforms in 2003 and 2004 defined and harmonized expenditure responsibilities and revenue sources across regions, eliminating special privileges and imposing stricter requirements. These reforms also increased regional fiscal dependence on the center, as regions were forced to remit the bulk of tax revenues to the center before receiving their share back in the form of transfers (Martinez-Vasquez, Timofeev, and Boex (2006)). Political reforms included replacing gubernatorial elections with centralized appointments and strengthening the power and autonomy of federal representatives overseeing the regions (Robertson (2010)). Finally, the center was also able to set up Russia's first successful party of power, giving Putin tools to co-opt powerful regional elites (Hale (2006), Reuter (2010)). In doing so, he created the first truly unified front between the Kremlin and the Russia's powerful regional elites since the collapse of the Soviet Union (Reuter and Remington (2009)). As with any dominant party project, the appearance of electoral invulnerability, coupled with targeted co-optation,

was critical to building and holding together the elite coalition (Blaydes (2010), Magaloni (2006)).

The declining ability of regional elites to challenge the federal center, meant the logic of transfers became less grounded in appeasing powerful regional elites. Although some regional elites maintained strong political machines, centralizing fiscal reforms and the advent of gubernatorial appointment, meant that elite survival (and rents) in the UR dominated system was tied to reproducing the power of the dominant party through the electoral system (Jarocinska (2010), Konitzer-Smirnov and Wegren (2003), Reuter and Gandhi (2011)). Because their survival became tied to UR's success, the center was able to use regional elites as specialized transmission belts, allocating funds within their regions to insure a strong electoral showing for UR (Reuter and Robertson (2012)). Elites adhered to the system in order to avoid being removed from power by the center and to continue to benefit from the hegemonic party project.

This system was supported by fiscal reforms. Despite formal guidelines on expenditures, fiscal reform did little to alter the *de facto* discretion of regional authorities.²² Vast imbalances in per capita expenditure remained even in highly regulated public goods such as education, health care, and infrastructure investment (Remington (2011)). Critically, the reforms gave regional elites even more control over sub-regional budget allocations by limiting municipal revenue to transfers from the regions (Martinez-Vasquez, Timofeev, and Boex (2006)). This allowed regional governments to pressure municipalities to turn out the vote for UR and to channel federal funds to where it would strengthen the party the most (Golosov (2006), Martinez-Vasquez, Timofeev, and Boex (2006)). For the Kremlin, this insured regional elites had the incentives to produce good electoral results and the resources to do so.

²²Authors' interviews with various current and former members of the Federal Ministries of Finance and Economic Development and Trade.

3 Data and Methodology

To explore the connection between transfers and voting dynamics, we deploy data on transfers from the federal center to 78 Russian regions between 2000 and 2008.²³ Our dependent variable is total federal transfers per capita to the regions in thousands of rubles (2000 prices), which we collected from the Russian Federal Treasury and the Center for Fiscal Policy in partnership with Moscow State University.²⁴

We focus on overall transfers to regions for several reasons. First, as noted above, regions had significant discretion in spending transfers. Second, although overall transfers are a noisy measure that captures both programmatic and targeted spending, the Russian budgetary system underwent numerous changes that preclude tracking specific programs over time. We believe the noisy dependent variable biases results against our theory, since the effects of politically targeted spending are likely to be muted by the presence of other programs. Third, use of regional level data matches our theory, which models transfers across regions. Finally, using a longer time-series and coarse data allow us to sidestep common external validity problems. Commonly used cross-sectional data collected following the introduction of a new transfers program resolves potential simultaneity problems, but also artificially limits variation in contextual factors, such as economic growth.²⁵ A time-series approach makes it easier to observe conditions of both fast and slow economic growth, which we argue is crucial to reconciling mixed results in the literature.²⁶

²³As is common for studies of Russia, we omit Chechnya and Ingushentia due to persistent insurgencies in these regions. We also took additional steps insure sample comparability over time given name and boundary changes. We drop Nenets Autonomous Okrug, Yamalo-Nenets Autonomous Okrug, and Khanty-Mansi Autonomous Okrug, which were split off from larger regions during our period of study. We amalgamate their data with the larger regions they split from. We also assume that Chita Oblast is equivalent to Zabaikalskiy Krai, Perm Oblast to Perm Krai, and Kamchatka Oblast to Kamchatka Krai.

²⁴UIS Russia MSU Database, <http://uisrussia.msu.ru>

²⁵Examples include [Dahlberg and Johansson \(2002\)](#), [Diaz-Cayeros, Estevez, and Magaloni \(2012\)](#), [Magaloni \(2006\)](#).

²⁶We acknowledge that endogeneity is still a serious concern. We address it in further detail below.

3.1 Independent Variables and Controls

In order to measure the degree to which regions are swing or core, we follow the convention in the literature of using the incumbent's margin of victory in the most recent legislative or presidential elections (Blaydes (2010), Magaloni (2006), Popov (2004), Treisman (1998, 1996)).²⁷ In doing so, we step away from a categorical conceptualization of party affinity (i.e. core, swing, opposition) and adopt a continuous one. By this measure, the higher United Russia's (UR) vote margin in a given region, the more of a "core" region it is. "Swing regions" are those where vote margins cluster around zero.

We follow Magaloni (2006) in defining the vote margin variable as equal to the difference between the vote share for UR and the runner-up party (where UR wins a plurality of votes) or between UR and the winner (elsewhere) if UR won the election and 0 otherwise.²⁸ Before the formation of UR in 2003, we approximate UR vote shares using the sum of vote shares for its precursors parties – Unity and OVR (Fatherland – All Russia).²⁹ Although the average margin of victory for UR increases over time, the figure shows substantial variation across regions and elections. For presidential elections, we likewise use the difference between Putin/Medvedev's vote share and that of the 2nd place candidate in regions where Putin/Medvedev wins and 0 where they do not.³⁰ Because our theory predicts transfers are conditional on economic outcomes, we also include a measure of economic growth and its interaction with the vote margin variable. We calculate economic growth rates based on changes in the Gross Regional Product index of physical volume.

²⁷We recognize that vote shares in a hegemonic party system are subject to manipulation and may not accurately reflect popular support. The Russian regions most notorious for voter manipulation are excluded due to data limitation for other variables. Results in remaining regions roughly track public opinion prior to elections.

²⁸We carry forward values of vote margin so that the variable we are working with has a threshold structure: we have to explicitly assume that the support of the incumbent party remains the same in between election years.

²⁹Figure 1 in the "Supplementary Online Appendix" illustrates the dynamics of the distribution of this variable for the 1999, 2003, and 2007 elections.

³⁰Figure 2 in the "Supplementary Online Appendix" shows the dynamics of the distribution of this variable (for the 2000, 2004, and 2008 elections). The supplementary appendix also includes specifications in which we define the vote margin variable slightly differently. Where UR and Putin/Medvedev win, this recoded variable is identical to the one we present above. Where they lose, we subtract their vote share from the winner's instead of setting the variable equal to zero. Our main results below are not sensitive to this recoding.

In any analysis of transfers in Russia, it is important to control for budgetary imbalances between regions, which the Russian government claims to take into account when making transfers. We include controls for the two primary elements of the Ministry of Finance’s published equalization formula – (1) the index of budget expenditures (IBE), which reflects the ratio of estimated regional expenditures relative to average budget expenditures for all regions and (2) the index of tax potential (ITP), which is the ratio between a given regions’ estimated tax income the Russian average.³¹ We also include controls for economic development (deflated regional GRP per capita, in 2000 prices), the number of pensioners and children under the age of 18 per 1,000 people, the percentage of people living in urban areas, and the percentage of education and health workers in total employment. Because transfers for a given year are set in the previous year, we take the lag of all of our independent variables of interest and controls.

3.2 Identification Strategy

The relationship between transfers and political support is highly endogenous because of reverse causality and omitted variable issues. We use an instrumental variables regression design to identify the causal effect of the trade-off between vote margin and economic growth on fiscal transfers. Our regression-based approach requires making strict assumptions. First, we condition the effect of vote margin on observable confounders which determine the amount of fiscal transfers a region gets from the center (the conditional ignorability assumption). We discussed these confounders (control variables) in the previous subsection. Second, due to the longitudinal nature of our data we can introduce time-invariant region-specific and year fixed effects which account for unobserved regional heterogeneity and aggregate time shocks. Third, we use an instrument for the economic growth variable. This requires us to introduce an instrument for the interaction term between economic growth and political support (*c.f.* Wooldridge (2001)). This helps account for simultaneity. As a robustness check, we also instrument for vote margins in the same way.

³¹“On the Distribution of Grants Aimed at Equalizing Levels of Budgetary Provision in Russia’s regions” published on November 22, 2004. Source: Consultant Plus.

We estimate the following parametric regression model for the dynamics of transfers over time:

$$\Delta y_{it} = \rho y_{it-1} + \alpha z_{it-1} + \beta z_{it-1} \omega_{it-1} + \theta \omega_{it-1} + \gamma \Delta X'_{it-1} + c_i + d_t + \varepsilon_{it}. \quad (1)$$

Where Δy_{it} is the year-on-year change in total transfers ($y_t - y_{t-1}$), z_{it} represents the electoral outcome of interest, ω_{it} is the growth rate in gross regional product (GRP), and ΔX_{it-1} is a vector of first differences in regional level controls at time $(t-1)$ and $(t-2)$. Because we test for the trade-off between the provision of economic growth and the electoral outcome measures, we include the interaction term, $z_{it-1} \omega_{it-1}$. Finally, c_i is a set of region fixed effects, d_t is a set of year fixed effects. ε_{it} is a idiosyncratic, serially correlated, and heteroskedastic error term.

We estimate our model using a panel-adapted two-step generalized method of moments technique with panel-corrected (i.e. cluster-robust) standard errors (Windmeijer (2005)).³² Apart from endogeneity related to economic growth and vote margin, we also have ‘technical’ endogeneity that stems from our inclusion of lagged transfers per capita y_{it-1} as a covariate in a specification that includes region-level fixed effects. The model identification thus requires us to find instruments for y_{it-1} such that they are exogenous with respect to region-level effects. Our system GMM methodology allows us to do this (Blundell and Bond (1998)). The system GMM technique uses a set of internal instruments based on lagged values of transfers per capita to instrument for the lagged value y_{it-1} to deal with ‘technical’ endogeneity. Along with Equation 1 its first-differenced version is estimated, thus the *system* GMM. The matrix of instruments based on values y_{it-1-k} is constructed for the first-differenced equation, and the matrix based on Δy_{it-1-k} is used for the equation in levels ($k = \{3, 4\}$).³³ Using GMM also allows us to introduce classical external instruments for economic growth and vote margins, which we discuss in detail in the next section.³⁴ Finally, we adjust our standard errors for within-cluster autocorrelation in the

³²We use the *xtabond2* routine by Rodman (2006) in Stata.

³³We construct instruments for the lagged GRP per capita in a similar way.

³⁴A small N problem limits us when constructing the Blundell and Bond (1998) instrumental variable matrix as does

error term.³⁵

Our use of the change in transfers Δy_{it-1} as a dependent variable and first differences ΔX_{it-1} for control variables, rather than the more traditional use of levels, is motivated by several concerns.³⁶ First, at the theoretical level, our model assumes that voters compare their current consumption to the past, as well as to hypothetical levels under the opposition. This is why economic slowdowns cause voters to question support for the incumbent. By implication, relative gains and losses are more important than absolute gains. Second, the central government in Russia treats current transfers as a floor for future transfers. Consequently, regional transfers rarely shrink in nominal terms (see Figure 1).³⁷ In such an environment, what distinguishes strategic transfers for electoral purposes is therefore relative gains vis-a-vis the overall economy and other regions rather than absolute ones.³⁸ Third, statistically, the use of differenced dependent and independent variable allows us to resolve some stationarity problems in the data, which precluded us from using alternative approaches.³⁹ Finally, our approach also allows us to mitigate some of the simultaneity problems with our design (we discuss this more below). Due to our use of first differences, our results describe the relative year-on-year change in transfers given to regions, not overall transfers. The hypotheses presented in Section 2.2 still apply, however.

potential serial correlation introduced by our lagged variables. We take only 3rd and 4th lags on lagged transfers for our instrumental variable matrix. This allows us to partially combat the instrument proliferation problem (Rodman (2006)). We do not use the 2nd lag to avoid endogeneity in instruments caused by serial correlation.

³⁵Stock and Watson (2008) show that for panel models with fixed effects, small finite T , and first-order serial correlation, the cluster-robust variance-covariance matrix estimator gives less biased results than alternatives.

³⁶This discussion is based on feedback from the experts at the Center for Fiscal policy, a seminar held at the International Center for the Study of Institutions and Development in September 2011, and personal contacts between the authors and the Russian Ministries of Finance and Economic Development.

³⁷The one exception in our data is 2004, when a series of centralization measures and budget reforms allowed the center to rein in spending.

³⁸Because we look at change in transfers, we also take differences in the control variables, since in a world with no politically motivated transfers, regions where underlying socio-economic conditions change the most should also see the most change in transfers. Note that the same logic does not hold for electoral outcomes, however. Regions where the incumbent wins by a hefty margin may not be able to offer improved performance in subsequent elections if the margin of victory is sufficiently high. If this is the case, then targeting rewards based on improvements in electoral outcomes rewards volatile regions not those that offer loyal support.

³⁹Equation 1 may be roughly treated as an error correction model. We provide a more detailed explanation in the "Supplementary Online Appendix".

3.3 Challenges to Identification

Before moving to our main results, it is worth discussing three potential identification problems with our design and the solutions we implement.⁴⁰ First, transfers are not set in a vacuum and are subject to autocorrelation. The value in the current year is normally highly dependent on previous values, which are often used as baselines. Second, transfers have an immediate and direct effect on future economic growth rates, introducing a second potential source of endogeneity. Finally, our framework assumes that politicians use the past voting behavior of regions to direct transfers. Past voting behavior is itself based on prior transfers, however, suggesting the possibility of simultaneity and reverse causality.⁴¹

We take several approaches to addressing these issues. First, we apply estimates for standard errors which allow for arbitrary serial correlation.⁴² Second, for absolute levels of GRP per capita and lagged transfers per capita we use internal instruments constructed from a matrix of their own higher-order lags (following the approach by [Blundell and Bond \(1998\)](#)) as we discussed above. Finally, we introduce explicit instruments to deal with endogeneity related to our main variables of interest: economic growth and electoral results. We assume we meet the exclusion restriction so long as the instrument is correlated with the independent variable of interest (economic growth or vote margins for United Russia) but not with *changes* in transfers over time (our dependent variable). However, our instruments can be correlated with *absolute* transfers, so long as the instruments themselves do not drive the rate of increase (or decrease).

We instrument for economic variables using the popular approach of instrumenting for growth with climatic features.⁴³ Specifically, [Gaddy and Ickes \(2013\)](#) show that Russia’s climate, adjusted for popu-

⁴⁰The following discussion draws heavily on [Magaloni \(2006\)](#), [Schady \(2000\)](#).

⁴¹Formally, suppose: $y_{it} = \alpha + \beta x_{it-1} + \gamma Z'_{it-1} + \varepsilon_{it}$, where y are total transfers, x is the vote share for the ruling party in the previous period, Z is a vector of control variables in the previous period, and ε is the error term. Because politicians assume that expenditures shape electoral outcomes, however, the equation for estimating electoral outcomes is: $x_{it} = \phi + \gamma y_{it-1} + \theta \tilde{Z}'_{it-1} + \omega_{it}$, where \tilde{Z} is a vector of control variables and ω the error term. If both the equation for transfers and for electoral outcomes hold, then there is a classic simultaneity problem and likely some serial correlation as well. Failing to correct for it will result in inconsistent (asymptotically biased) estimators.

⁴²There is statistical evidence of a first-order autoregressive pattern in Δy_{it} based on results of the [Wooldridge \(2010\)](#) pre-regression serial correlation test.

⁴³For a notable example of this strategy, *c.f.* [Miguel, Satyanath, and Sergenti \(2004\)](#). For empirical work demonstrating

lation density, closely correlates with economic growth at the regional level: colder regions with fewer people grow more slowly. In order to use this measure as an instrument, it needs to be correlated with economic growth, but only influence growth in transfers through its effect on regional GDP growth. Two channels might violate this assumption. One channel is if the Russian government grants transfers to regions explicitly due to their geographic location. Although Russia does provide additional transfers to northern regions, these do not change much from year to year and are effectively eliminated from the dependent variable once we take first differences. That is, these relatively stable transfers cannot explain *growth* in transfers, allowing our instrument to satisfy the exclusion restriction. A second channel is if the Russia government increases transfers to regions that experience unusually cold winters to compensate for increased heating expenditures. To our knowledge there are no systematic programs of this type. Nonetheless, to be conservative, we control for cost of living (captured by the index of budget expenditures), which would increase if cold winters force increases in heating expenditures, explicitly in our regressions. With first differencing, this should eliminate sources of unobserved correlation and meet the exclusion restriction. Following [Gaddy and Ickes \(2013\)](#)'s approach, we construct a measure of lagged average temperature in January weighted by inverse regional population density as an instrument for economic growth. First stage F-statistics for the adjusted temperature indicator is 36.81, i.e. our instrument is not weak ([Staiger and Stock \(1997\)](#), [Stock and Yogo \(2005\)](#)).

For our electoral variables, we note that the use of first differences partially precludes the possibility of reverse causality. As our main electoral measure is lagged, it is hard to believe that *changes* in transfers at time t will influence vote totals at time $(t-1)$.⁴⁴ Nevertheless, to be conservative we also present models with an explicit instrument. Recall that our main measures of margin of victory (both for presidential and parliamentary elections) is a lagged measure taken from the most recent electoral cycle. Our instrument

the link between climate and economic growth, *c.f.* [Barrios et al. \(2010\)](#), [Mendelsohn et al. \(2006\)](#). [Dell, Jones, and Olken \(2014\)](#) provides a review of empirical studies which use longitudinal datasets to study the influence of weather and climate on economic outcomes.

⁴⁴We thank an anonymous reviewer for emphasizing this point to us.

for the electoral variables is the twice lagged vote share for the Communist Party (KPRF), where for any given electoral cycle we use data from the preceding electoral cycle as the instrument.⁴⁵ We choose the KPRF, because it is the only party to have existed during the entire period under study.⁴⁶

We argue that our instrument meets the exclusion restriction for two reasons. First, violating the exclusion restriction would require that election results deep in the past, $(t - 2)$, influence changes in transfers in the present (t) . While it could be that these previous election results influence *levels*, we find it particularly implausible that they (as levels themselves) influence future *change*. For this to be the case, electoral results in the past would have to result in persistent rewards and punishments irrespective of more contemporaneous voting patterns. Most models of distributional politics discussed in Section 2 suggest this is irrational, however, as ignoring recent information could lead to mistargeted transfers and lost elections.

Secondly, the period 1999–2003 featured marked changes in the Russian party system that placed a premium on information gleaned from the most recent elections. While there is ample evidence that voters were able to assign responsibility for economic outcomes to incumbents, the relationship of these incumbents to the center changed overtime. The changing party landscape made yesterday’s opposition voters into today’s core. Specifically, the move by the previously opposition OVR regions to join the UR coalition along with their regional elites, invalidated information gleaned before the formation of United Russia in 2003 (Colton and Hale (2009a,b)). Put another way, the logic of federal transfers in 1995, before the formation of Unity and OVR, was quite different than the logic of transfers in the period between 2000 and 2003, when the Kremlin was able to establish a viable party to serve as its vehicle (*c.f.* Jarocinska (2010)). Similarly, regions that served as core supporters for the Kremlin in the period between 2004 and 2007, after the merger of Unity and OVR, were quite different than its supporters when these two parties

⁴⁵e.g. For the three year period 2000–2003, we use data from the 1999 election in our main specification and from the 1995 election as the instrument.

⁴⁶However, this instrument seems to be weak, i.e. F-statistics is only 4.18, so we should treat these results with caution. We do not use the KPRF vote share as an instrument in our main specifications.

were explicit competitors in the early 2000's. Thus, we argue that election results at a sufficient remove ($t - 2$) should not shape allocations of transfers in the present, except in so far as they correlate with more recent election results (i.e. our main variable, which is measured at $(t - 1)$).

4 Results and Discussion

We begin by examining the relationship between vote shares and year-on-year growth in transfers. Table 2 presents the main results of our analysis. Model 2.1 is our baseline model. In it, we instrument for lagged transfers per capita and GRP per capita as discussed above, but not for the vote margin variable. As expected economic growth has a significant, negative effect on the overall growth rates of government transfers – richer regions receive smaller year-on-year increases in transfers than poorer ones. Consistent with the core voter hypothesis, the main variable of interest, United Russia's margin of victory in the previous election cycle ($t - 1$), is positive but not significant which may mean that the effect of vote margin is heterogeneous for regions with different growth rates. Finally, the main control variables indicating changes in the estimated tax capacity of the region (Index of Tax Potential) and cost of providing public services (Index of Budget Expenditure) are significant in the expected directions. Regions with high tax potential experience slower growth in transfers, while those with higher costs of living experience faster growth. Other controls fail to reach significance at conventional levels.

Model 2.2, tests our hypothesis directly by introducing the interaction term between vote margin and economic growth.⁴⁷ Building on Model 2.1, we first assume the electoral variable is exogenous and do not instrument for it. United Russia's vote margin in this specification is significant and positive. Higher margins of victory translate into larger changes in transfers, which comports with the argument that transfers go to regions which support the incumbent. As expected, however, the interaction term between

⁴⁷For the interaction term we construct the instrument as the interaction between the electoral variable and the adjusted temperature indicator.

growth and vote margin is also significant and negative, indicating that the marginal effect of core voting on growth in transfers is attenuated by high GRP growth. The results of this model are otherwise similar to Model 2.1. In order to guard against endogeneity, Model 2.3 introduces our instrument for the margin of victory variable: the twice lagged ($t - 2$) KPRF Vote Share. The results remain similar to those of Model 2.2. Thus, even when accounting for endogeneity, our evidence is consistent with a conditional effect of economic growth on electorally driven distributive politics.

As our main hypothesis is about national elections broadly, Model 2.4 checks whether our results hold for presidential elections.⁴⁸ Results from Model 2.4 suggest that the pattern of rewarding slow growing regions where the incumbent president (or his successor) win handily (i.e. core regions) and fast growing regions where vote margins are slimmer (i.e swing regions) holds. One potential concern, however, is that the pattern we observe for presidential elections may be driven by legislative elections (which precede presidential elections by a quarter) or vice-versa. In such a case, we would be wrong to infer that our conditional theory applies to both legislative and presidential elections. As a robustness check, we check for these types of political business cycle effects in the following section.

To what extent does economic growth attenuate the propensity of the federal center to reward supportive regions? Figure 2 draws on Model 2.2 to show how predicted transfers vary with economic growth for a more supportive region (“core”) and a less supportive region (“swing”), which are otherwise similar. We follow the approach of Tomz, Wittenberg, and King (2003) to simulate predicted transfers based on our parameter estimates and their estimated covariance matrix from Model 2.2. We create a vector of values for lagged economic growth, from the minimum observed in our sample (-0.202 or -20.2%) to the maximum observed (0.42 or 42%) in 2000–2008.⁴⁹ We obtain two distinct predicted linear effects for the change in transfers (in 1,000 rubles per capita) along with their 90% confidence intervals, conditional

⁴⁸We approximate votes for Vladimir Putin with votes for Boris Yeltsin in the second round of 1996 elections. See the distribution of vote margins in Presidential elections presented in Figure 2 in the “Supplementary Online Appendix”.

⁴⁹See the “Supplementary Online Appendix” for further details on the simulation procedure.

on the lagged growth rate ω_{it-1}).⁵⁰ For the sake of simplicity, we set the vote margin for our more loyal “core” region to 50%, which corresponds to the upper 10th percentile of UR vote margins in legislative elections, and set the vote margin for the less loyal “swing” region to 1%.

Consistent with our theory, in Figure 2 (legislative elections) we see that the more supportive “core” region experiences larger year-on-year transfers when economic growth is slow. Figure 2 indicates that the inflection point, where our core region sees a decline in transfers, is around 8.3%, which is slightly above the median growth rate (6.3%) for Russian regions. Crucially, the 90% confidence interval only briefly overlaps zero, indicating that our predicted effect is statistically distinguishable from zero for much of its range. The less supportive “swing” region, by contrast, experiences faster year-on-year growth in transfers when economic growth is faster. This region starts to receive negative transfers at growth rates below about 12.3%. Swing regions growing faster than this – about 10% of regions – receive higher transfers compared to the previous year. As we can see from the 90% confidence interval for the predicted transfers for the “swing” region, however, this effect is statistically significant for a much smaller range of values than for our hypothetical “core” region. While “swing” regions growing slower than 6.3% (the median growth rate) see negative growth in transfers, only those regions growing faster than 32.3% see increases that are statistically distinguishable from zero (the top 1%). This result can likely be explained by the nature of the data we work with: there are few regions with close vote margins in legislative elections. These were observed mostly during the 1999 election (see Figure 1 in the [”Supplementary Online Appendix”](#)). Because of this data sparsity, it is much harder to estimate the conditional effect of growth on transfers for such regions.

Figure 2 allows us to compare the core and swing regions to each other to see who is getting more funding at different levels of economic growth. For negative values of economic growth we can see that the hypothetical core region receives more transfers than its twin hypothetical “swing” region. That is,

⁵⁰Technical details on the interpretation of interactions terms can be found in [Brambor, Clark, and Golder \(2006\)](#). We also have more details on calculation of marginal effects and their confidence intervals in the [”Supplementary Online Appendix”](#).

the change in transfers for the “core” region is positive, whereas the change in transfers for the “swing” region is negative. Crucially, the 90% confidence intervals for the estimated predicted growth in transfers do not overlap below about 4.3% growth, indicating that this difference is statistically significant. For the positive values of growth the “core” region gets less transfers than the “swing” region. The change in transfers for the “swing” region in this case is positive, whereas the change in transfers for the “core” region is negative. Again the 90% confidence intervals, for these estimates do not overlap after about 16.8% growth, indicating that this difference is statistically significant at high levels of growth. Taken together, this suggests that when economic growth is low swing regions get less money compared to core regions and vice-versa when economic growth is high. In real terms, this means that the “core” region growing 4.3% a year receives 1,995 Rubles (per capita) more compared to the previous year, while the “swing” region growing at the same pace gets 3,828 Rubles (per capita) less. On the other hand, the fast growing “core” region (at the pace of 16.8% a year) receives 3,764 Rubles (per capita) less compared to the previous year, and the “swing” region, on the other hand, gets 2,143 Rubles (per capita) more.

For presidential elections we generate a similar figure. We set the vote margin for our more loyal “core” region to 64%, which again corresponds to the upper 10th percentile of vote margins for Putin/Medvedev, and set the vote margin for the less loyal “swing” region to 1%. Our results, given in Figure 2 (presidential elections), are qualitatively similar to those for legislative elections. Again, we see a statistically significant relationship, whereby the “core” region experiences positive growth in transfers when economic growth is low and negative growth in transfers when economic growth is high. The opposite holds true for the “swing” region: growth in transfers are negative when economic growth is low and positive when it is high. The latter results is not statistically distinguishable from zero, however.⁵¹

⁵¹It is worth noting that the marginal effect graph (Figure 4 in the “[Supplementary Online Appendix](#)”) shows a significant negative effect of a 1% increase in vote margin on the change in transfers (for an average region), conditional on economic growth. This suggests that even here our hypothesized effect exists, although it may be harder to identify. We speculate this may be due to the relative paucity of observations where Putin/Medvedev lose regions or win by small amounts as indicated by Figure 2 in the “[Supplementary Online Appendix](#)”.

4.1 Robustness Checks

As noted in section 2.2, our model is predicated on the fact that the central government distributes transfers in order to maximize vote share, not to co-opt or reward powerful elites. We assume that regional elites serve as conduits and brokers, channeling transfers in ways that maximize vote shares for national politicians rather than consuming them as rents. If, however, powerful regional elites are able to collect transfers from the federal center *independent* of the vote shares they provide, our interpretation of the main results may be wrong. Suppose that UR's margin of victory in elections is correlated with the presence of powerful regional elites, who happen to be able to turn out the vote for UR. If this is the case, transfers may be awarded to specific types of elites rather than according to an electoral logic. As discussed in section 2.3, this description characterized transfers in the 1990's, when the federal center was weak and regional elites powerful (Treisman (1999, 1998, 1996)), although recent work has indicated that regional elites have lost a lot of power vis-a-vis the center (Jarocinska (2010)).

Empirically, if the electoral logic identified in the previous section is actually a function of the power of governors then characteristics associated with powerful governors should be significant predictors of growth in transfers and crowd out electoral variables in our regressions. In order to distinguish between these explanations, we use several proxies for governors' bargaining power constructed from a novel database of regional elites.⁵² For these tests, we assume that governors with strong ties to their regions are more likely to be able to mobilize regional allies and voters as a negotiating tactic with national elites (Reuter (2013), Robertson (2010), Treisman (1998, 1996)). To proxy for governors' connections to their region, we coded several variables. First, we code a simple dummy equal to one if a governor had any ties to his or her region prior to gaining office. This dummy includes both governors whose careers (political and/or non-political) mainly occurred in their region and those who worked in their region for a period

⁵²These data were collected as a part of the 2011–2013 project on “Institutions and Economic Development: the Role of Bureaucracy and Experiments and an Instrument for Reform Analysis and Evaluation” (supported by the NRU HSE Basic Research Program), <http://iims.hse.ru/en/csid/databases/en>. This was a joint project between the Harriman Institute (Columbia University) and the University of Wisconsin-Madison.

before moving away. Second, we use a measure of the number of years a governor worked in his or her region prior to being elected or appointed. Longer work experience in a region is likely to proxy for stronger connections between the governor and local elites and, by extension, a stronger political machine.

Third, ties to the federal center are also potential indicators of elite bargaining power, although here it stems more from connections to national politicians. To proxy for these types of connections, we create a dummy variable equal to one if governors previously served in a federal government organ or held a federal position. Fourth, we create a dummy variable equal to one if a governor was appointed or elected in the previous year. Such governors should have weaker political machines and less capacity to mobilize the electorate than governors who have spent more time in office. Finally, we also control for the amount of time the governor has spent in office. Again, the longer a governor has served, the more likely he or she is to have been able to build a strong political machine.

Table 3 presents our main results controlling for the strength of regional elites. For comparison, Model 3.1 presents our baseline results from Table 2 (Model 2). The results from models 3.2–3.5, which introduce our proxies for the power of the governor, mostly conform to the results from Table 2: the signs on the main effect for vote margins in the Duma are positive, while the signs on the interaction term between GRP growth rate and vote margins in the Duma are negative. The governor characteristics that we measure are not statistically significant. This evidence is consistent with our model and implies electoral considerations independently matter for transfers.⁵³

Another potential concern is related to the presence of political business cycles in our data. The main core and swing voter models disagree as to the timing of transfers. While most models assume that transfers occur before elections, as a means of buying votes, others allow for voters to make decisions based

⁵³We note that our measures do not capture the full breadth of elite power. We would like to control for mobilizational power of governors more directly by using governor's popularity in our regressions. Unfortunately, this data is only available after 2003 and including it cuts our sample size by 60%.

on anticipated rewards or punishments. More importantly, if transfers are driven by political business cycles, then a significant effect for presidential vote shares may be driven by pre-election spending aimed at legislative elections, while a significant relationship between legislative vote shares may be related to post-election spending on presidential elections. The stronger the correlation between presidential and legislative results, the more this becomes a worry. As the timing of transfers has important implications for our model, we ran an additional set of robustness checks to see whether our results were being driven by dynamics before, after, or during election years.

Table 4 presents these results: models 4.1– 4.3 test political business cycles for legislative elections and models 4.4– 4.6 for presidential ones. In models 4.1 and 4.4, we drop the year after the legislative and presidential elections respectively. In models, 4.2 and 4.5, we drop the year before legislative and presidential elections, respectively. Finally, in models 4.3 and 4.6, we drop the year of legislative and presidential elections. In each case we are looking at whether excluding the relevant period before, after, or during elections alters our main results. If our main variables of interest are insignificant in any of these specifications, this would be evidence of a political business cycle. The dynamics of the cycle depend on which specifications our main effects are insignificant for. For example, if our main results are insignificant when dropping post-election years (but are significant in the other specifications), this implies transfers occur only after elections consistent with a reward mechanism. Conversely if our results hold in all specifications except that which drops pre-election years, this suggests that transfers occur right before elections to buy support. If our main results hold through all of these tests, however it suggests that vote buying is a constant, ongoing process, not subject to electoral timing.

In model 4.1, which omits post-election years, the interaction term between GRP growth rates and margin of victory in the Duma for United Russia is negative and insignificant, with P-value 0.125. The main effect of United Russia's margin of victory is positive, as expected, but not significant at conventional levels. In models 4.2 and 4.3, which omit pre-election and election years, our main results are of

the expected sign and are significant at conventional levels. Taken together, this suggests that for legislative elections, there does not appear to be a strong political business cycle. However, we do find some evidence in favor of the reward mechanism.⁵⁴ Results using presidential vote margins and elections also roughly conform to this pattern, with most of our variables of interest remaining significant even after we drop pre- and post-election years. Interestingly, however, the signs on the coefficient for the interactions flips, and becomes insignificant, if we omit presidential election years (Model 4.6). We are unsure what to make of this result, although the remainder of our evidence suggests that transfers tied to presidential vote margins behave similarly to legislative ones.

As additional robustness checks we also tried excluding regions which are normally considered outliers in regional analyses (e.g. Moscow and St. Petersburg). Results remain robust for legislative elections, and less robust for presidential elections. We then tried estimating model specifications with interaction terms taken for all of our control variables and GRP growth rate to check for a general, unmodeled non-linearity in growth rates. This could indicate our results for the interaction of vote margin and GRP growth rate are spurious. These interaction effects are not significant at conventional levels, indicating that our main interaction is probably not a spurious⁵⁵.

5 Conclusions

In this paper, we have argued that core regions receive transfers when economic growth is slow, whereas swing regions receive transfers when economic growth is fast. In our model, which types of regions are targeted for transfers depends on national politicians' expectations about how economic growth will shape the regional distribution of voters loyal to them. Regions that are overwhelmingly supportive at

⁵⁴Because of limits on our data and our empirical strategy of using lags as instruments, we are unable to include the year before the 1999 election in our analysis. Consequently, there are fewer pre-election and election years than post-election years. This likely accounts for weak results in 4.1, as there are only 5 years once we omit post-election years. Models 4.2 and 4.3 each have 6 years of data.

⁵⁵See the "Supplementary Online Appendix".

the ballot box receive transfers when their economic growth is slow, as politicians expect unfavorable shifts in the distribution of voter loyalty. When economic growth is relatively fast, however, politicians prefer to opportunistically target swing regions, since they can rely on good growth outcomes to maintain support amongst core voters. We find some evidence that this is in fact the case. All else equal, higher additional transfers were given to Russian regions that voted more heavily in favor of United Russia if they experienced slow (or negative) GRP growth. Regions that were growing fast, by contrast, saw growth in transfers decrease as vote margins for United Russia increased.

Our findings have important implications for the broader literature. By showing how the logic of transfers changes based on economic conditions, we offer a potential solution to the theoretical and empirical controversy surrounding the core versus swing debate in existing work. Our results are particularly relevant in the low and middle income countries of the developing world with characteristics similar to Russia. They likely travel to the developed world as well, since Russian voters differ little from Western voters in terms of the issues dimensions that inform their party choices and how they evaluate incumbents (Colton and Hale (2009a,b), Konitzer-Smirnov (2006), Treisman (2011)).

In so far as we explore distributive politics under conditions of competitive authoritarianism, our work also has important implications for work on democratization. Our results suggest that the effect of economic growth on an incumbent's chances of reelection, and their electoral strategy, are potentially larger than previously thought. Whereas strong economic growth creates conditions that allow incumbents to use distributive politics to expand their coalitions, weak growth forces them to use transfers in a rear-guard maneuver to shore up their core. Thus, economic growth has a compounding effect on incumbents' reelection possibilities: directly through growth-induced prosperity and indirectly through its effect on transfers that may widen the incumbent's support base.⁵⁶ This area is ripe for future research.

Our model also suggests that autocrats face a more pernicious dilemma with respect to growth than

⁵⁶We thank an anonymous reviewer for emphasizing this point to us.

previously acknowledged. Magaloni (2006) famously points out that economic growth decreases the marginal utility of economic transfers to voters, creating a trap. Keeping voters poor is the only way to insure that transfers can be used to buy support. Our model suggests that this strategy is problematic in the long-run. As economic growth declines, the affinity of voters turns more and more against the incumbent. Over time, this forces the incumbent to begin treating core constituencies as swing voters and making transfers to buy their support. Thus, holding down economic growth can catch incumbents in a long term trap of spiraling electoral costs, making subsequent victory more costly and draining the funds available for rents and other priorities. How autocrats strike the balance between these dynamics is a key issue for understanding democratization and promises to provide productive ground for future research.

Much work remains to be done, however, as our project leaves open several unanswered questions. First, to what extent are the findings we generate here the result of an unconsolidated dominant party system? United Russia was formed in 2003, part way through the period we test. As a consequence, it is unclear if our results would travel to more fully autocratic regimes, where the dominant party has had time to consolidate control over the populace and eliminate competition. Second, to what extent do the core and swing voter dynamics we have identified in this paper depend on the dominant party setting. As we note above, we believe the results are more generalizable. Nonetheless, a valuable extension of this work would employ our theoretical framework to test transfer strategies in other low to middle income, federal settings. A final open question is what other sub-national conditions – structural or institutional – might also effect the decisions of politicians to target transfers to swing versus core voters.

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Figure 1: Total Transfers Per Capita in 1998–2008 (1,000 Rub in 2000 prices), 78 regions

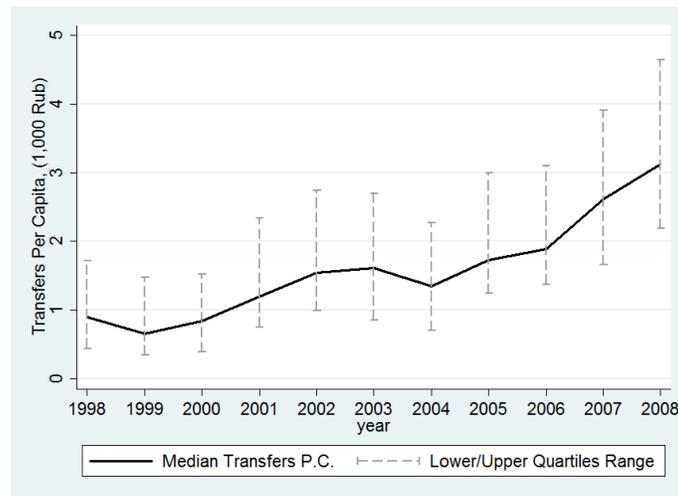
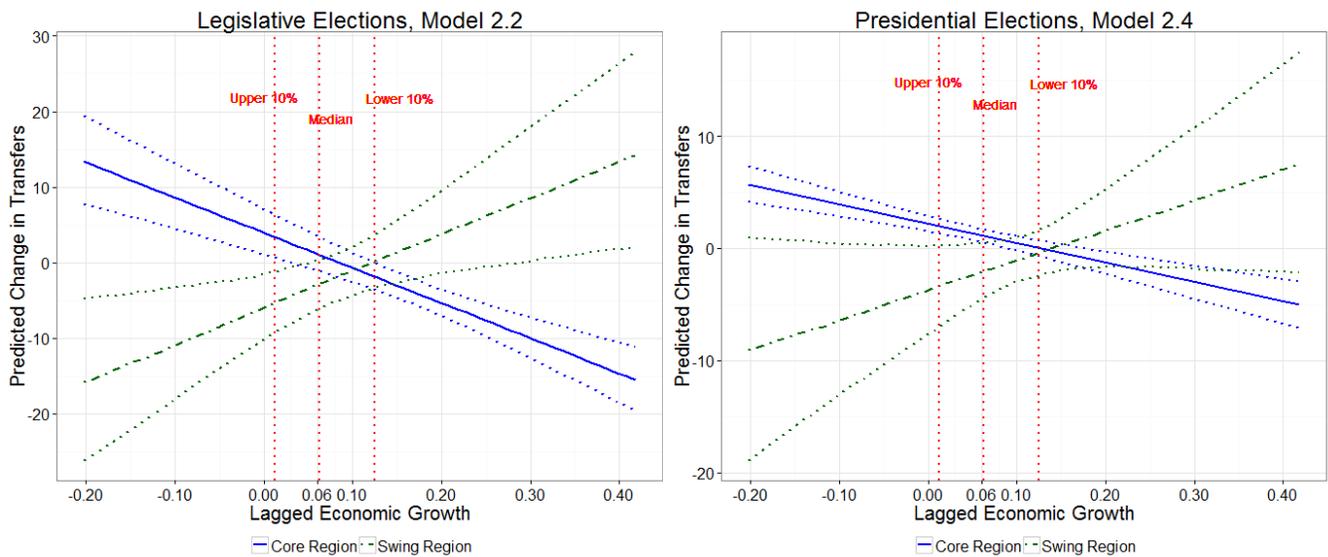


Figure 2: Predicted Transfers for a Core and a Swing Region, Conditional on Economic Growth (with 90% confidence intervals)



⁵⁶In Figure 2 Vote Margin for the Core Region is assumed to be 50% (64% for presidential elections), and Vote Margin for the Swing Region is 1%. Predicted Transfers and their 90% confidence intervals are calculated based on 1,000 Monte-Carlo simulations. The median change in transfers (per capita) and the 5% and 95% quantiles are plotted in the graph.

Table 1: Summary statistics, 2000–2008

Variable	Mean	Std. Dev.	Min.	Max.	N
D.Total Transfers Per Capita	0.41	1.954	-15.113	36.166	702
GRP Growth Rate	0.066	0.052	-0.202	0.42	702
UR Vote Margin in Duma	0.263	0.2	0	0.948	702
President's Vote Margin	0.407	0.217	0	0.943	702
D.Ratio of Urbanization	0.001	0.010	-0.099	0.167	702
D.Share of Employed in Public Sector	-0.040	0.480	-3.6	2.9	702
D.Ratio of Young People to Labor Force	-11.755	11.887	-69	47	702
D.Ratio of Pensioners to Labor Force	-1.523	10.351	-75	69	702
D.Index of Tax Potential	0.00743	0.387	-2.65	7.113	702
D.Index of Budget Expenditures	0.000538	0.105	-1.617	0.881	702
TPC Indicator	-0.009	0.043	-0.403	0.001	702
KPRF Votes Share	0.243	0.109	0	0.624	702
Governor's Experience: Years Worked in Region	12.377	8.396	0	38	702
Insider Governor: Any Ties to Region	0.856	0.351	0	1	702
Governor's Experience in Federal Structures	0.020	0.140	0	1	702
Governor's Tenure	6.692	4.089	0	17	702
Governor Turnover	0.0926	0.290	0	1	702

D – first difference operator.

Table 2: Determinants of Total Transfers 2000–2008, Per Capita: Main Results

	(1) Model	(2) Model	(3) Model	(4) Model
L.GRP Growth Rate	-12.437*** (2.490)	50.952** (23.337)	47.104** (23.875)	27.770 (19.385)
L.GRP per capita	-0.002 (0.004)	-0.007 (0.004)	-0.010* (0.006)	-0.002 (0.003)
L.Transfers per capita	0.050 (0.037)	0.060*** (0.021)	0.054* (0.028)	0.038 (0.026)
L.UR Vote Margin in Duma	5.730 (4.957)	20.354*** (6.687)	20.128*** (7.445)	
L.GRP Growth*UR Margin in Duma		-194.682*** (60.495)	-187.924*** (60.322)	
L.President's Vote Margin				9.453** (3.766)
L.GRP growth*President's Vote Margin				-70.282** (28.932)
LD.Ratio of Urbanization	1.865 (25.782)	17.828 (23.513)	39.679 (43.132)	10.189 (18.122)
LD.Share of Employed in Public Sector	-0.239 (0.523)	-0.867 (1.142)	-1.426 (1.337)	-0.137 (0.730)
LD.Ratio of Young People to Labor Force	0.043 (0.046)	0.046 (0.048)	0.073 (0.060)	0.026** (0.013)
LD.Ratio of Pensioners to Labor Force	0.045 (0.057)	0.028 (0.059)	0.042 (0.086)	0.009 (0.016)
LD.Index of Tax Potential	-0.848*** (0.296)	-0.738*** (0.285)	-0.479* (0.280)	-0.965** (0.448)
LD.Index of Budget Expenditures	10.089*** (0.843)	8.446*** (1.163)	7.618*** (1.024)	9.214*** (0.800)
Constant	1.177 (1.423)	-2.201 (2.685)	-1.045 (2.726)	-1.877 (1.167)
Year Effects	Yes	Yes	Yes	Yes
Observations	702	702	702	702
Number of Instruments	50	51	52	51
Hansen OverID Stat	$\chi^2(31)=46.34$	$\chi^2(31)=35.52$	$\chi^2(32)=33.28$	$\chi^2(31)=37.44$
P-Value for Hansen OverID Stat	0.038	0.264	0.405	0.197
Resid AR(1) Z-Stat	-1.92	-2.31	-1.98	-1.65
Resid AR(2) Z-Stat	-0.60	-0.91	-0.31	-0.98

Cluster-robust standard errors in parentheses. L is $(t - 1)$ lag, D is first difference

Dependent Variable: Difference in Total Transfers, Per Capita

Model (1): Baseline specification, with IV for growth

Model (2): Interaction Term Added, with IV for growth

Model (3): Model (2) with KPRF Vote Share as IV for UR VM

Model (4): Model (2) for President's Vote Margin as the electoral outcome

Hansen OverID test: H_0 is additional instruments (overID restrictions) are valid

Resid AR(2) test: H_0 is no AR(1) autocorrelation in residuals

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Determinants of Total Transfers 2000–2008, Per Capita: Robustness Checks for Governors as Brokers, with UR Vote Margin as the Electoral Outcome

	(1)	(2)	(3)	(4)	(5)	(6)
	Model	Model	Model	Model	Model	Model
L.GRP Growth Rate	50.952** (23.337)	50.890** (24.431)	42.507** (18.300)	50.377** (20.030)	43.438* (23.197)	49.544** (24.667)
L.GRP per capita	-0.007 (0.004)	-0.007 (0.004)	-0.007 (0.006)	-0.006 (0.005)	-0.008* (0.005)	-0.006 (0.004)
L.Transfers per capita	0.060*** (0.021)	0.060*** (0.020)	0.038 (0.041)	0.066** (0.026)	0.055** (0.028)	0.064*** (0.021)
L.UR Vote Margin in Duma	20.354*** (6.687)	20.335*** (6.795)	18.670*** (5.823)	18.286*** (6.685)	18.376*** (6.577)	19.926*** (6.829)
L.GRP Growth*UR Margin in Duma	-194.682*** (60.495)	-193.993*** (62.810)	-170.120*** (52.751)	-193.844*** (51.631)	-173.157*** (54.640)	-193.802*** (62.089)
LD.Ratio of Urbanization	17.828 (23.513)	18.584 (25.658)	19.699 (25.294)	15.404 (22.280)	33.648 (32.622)	16.258 (24.635)
LD.Share of Employed in Public Sector	-0.867 (1.142)	-0.851 (1.140)	-0.939 (1.036)	-0.923 (1.191)	-1.449 (1.206)	-0.868 (1.083)
LD.Ratio of Young People to Labor Force	0.046 (0.048)	0.048 (0.049)	0.066 (0.056)	0.039 (0.049)	0.073 (0.051)	0.043 (0.046)
LD.Ratio of Pensioners to Labor Force	0.028 (0.059)	0.032 (0.059)	0.047 (0.075)	0.017 (0.067)	0.032 (0.065)	0.019 (0.056)
LD.Index of Tax Potential	-0.738*** (0.285)	-0.706** (0.313)	-0.722** (0.329)	-0.812** (0.384)	-0.380 (0.351)	-0.759*** (0.288)
LD.Index of Budget Expenditures	8.446*** (1.163)	8.454*** (1.196)	8.921*** (1.303)	8.299*** (1.180)	8.207*** (1.444)	8.258*** (1.274)
L.Insider Governor: Any Ties to Region		-0.126 (0.997)				
L.Governor's Experience: Years Worked in Region			-0.089 (0.105)			
L.Governor's Experience in Federal Structures				-5.026 (6.567)		
L.Governor Turnover					-2.544 (1.683)	
L.Governor's Tenure						0.066 (0.116)
Constant	-2.201 (2.685)	-5.223** (2.593)	-0.438 (2.972)	-2.178 (2.100)	-0.608 (1.841)	-3.055 (2.591)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	702	702	702	702	702	702

Cluster-robust standard errors in parentheses. L is $(t - 1)$ lag, D is first difference
 Dependent Variable: Difference in Total Transfers, Per Capita. Specifications Without IVs
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Determinants of Total Transfers 2000–2008, Per Capita: Robustness Checks for Political Business Cycles

	(1)	(2)	(3)	(4)	(5)	(6)
	Model	Model	Model	Model	Model	Model
L.GRP Growth Rate	7.764 (22.397)	38.529** (17.640)	45.219** (22.443)	29.291* (16.991)	21.134 (17.905)	-37.292 (34.121)
L.GRP per capita	0.007 (0.006)	-0.008 (0.009)	-0.017** (0.008)	-0.007 (0.006)	-0.004 (0.007)	0.006 (0.010)
L.Transfers per capita	0.318*** (0.107)	0.047 (0.033)	-0.037 (0.089)	0.025 (0.030)	0.010 (0.048)	0.253*** (0.086)
L.UR Vote Margin in Duma	5.436 (7.733)	16.922** (6.903)	25.339*** (7.451)			
L.GRP Growth*UR Margin in Duma	-99.621 (64.888)	-153.343*** (52.336)	-204.031*** (71.810)			
L.GRP growth*President's Vote Margin						
L.President's Vote Margin				-76.770*** (28.449)	-65.354** (32.736)	39.877 (52.638)
LD.Ratio of Urbanization	-51.235 (63.728)	30.485 (33.476)	91.326 (72.162)	44.370 (41.900)	39.469 (84.829)	2.423 (4.821)
LD.Share of Employed in Public Sector	-0.039 (1.856)	-1.005 (0.868)	-2.865** (1.446)	-1.224* (0.629)	-0.911 (0.861)	-0.298 (1.463)
LD.Ratio of Young People to Labor Force	-0.041 (0.075)	0.034 (0.035)	0.162 (0.121)	0.088* (0.046)	0.058 (0.049)	-0.028 (0.057)
LD.Ratio of Pensioners to Labor Force	-0.049 (0.081)	0.042 (0.052)	0.172 (0.199)	0.044 (0.053)	0.021 (0.052)	-0.015 (0.065)
LD.Index of Tax Potential	-1.172* (0.704)	-0.763 (0.470)	-0.642 (0.566)	-0.775** (0.360)	-1.214 (0.856)	-1.747** (0.883)
LD.Index of Budget Expenditures	8.966*** (1.585)	9.337*** (1.132)	7.021*** (2.416)	9.410*** (1.014)	7.999*** (1.196)	13.033*** (1.876)
Constant	-2.364 (1.514)	-2.335** (1.067)	1.790 (4.355)	0.779 (2.137)	-1.026 (1.739)	0.075 (1.818)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	468	546	546	546	546	468

Cluster-robust standard errors in parentheses. L is $(t - 1)$ lag, D is first difference

Dependent Variable: Difference in Total Transfers, Per Capita. Without IVs for Vote Margins

Model (1): Years After Legislative Elections Excluded (2000, 2004, 2008)

Model (2): Years Before Legislative Elections Excluded (2002, 2006)

Model (3): Years Of Legislative Elections Excluded (2003, 2007)

Model (4): Years After Presidential Elections Excluded (2001, 2005)

Model (5): Years Before Presidential Elections Excluded (2003, 2007)

Model (6): Years Of Presidential Elections Excluded (2000, 2004, 2008)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Variables' Description & Data Sources

Variable	Description
Total Transfers, Thnd Rub Per Capita	Total transfers to a region, in 2000 prices (deflated with the cumulative consumer price index taken from Rosstat). Source: Federal Treasury, www.roskazna.ru .
United Russia Margin of Victory in Federal Duma Elections, Share (Out of 1)	The difference between the vote share for UR and the runner-up party (where UR wins a plurality of votes) or between UR and the winner (elsewhere) if UR won the election and 0 otherwise. Years of Duma Elections: 1999, 2003, 2007. Sources: Central Election Commission of the Russian Federation, www.cikrf.ru , and http://www.cikrf.ru ; http://www.electoralgeography.com/en/countries/russia/1996-president-elections-russia.html ; authors' calculations.
Vote Margin for President (Out of 1)	The difference between Putin/Medvedev's (Yeltsin in the 1996 election) vote share and that of the 2nd place candidate in regions where Putin/Medvedev wins and 0 where they do not. For Presidential Elections in 1996 the results of the second round were used. Source: Central Election Commission of the Russian Federation, http://www.cikrf.ru . Sources: www.cikrf.ru , http://www.cikrf.ru , http://www.electoralgeography.com/en/countries/russia/1996-president-elections-russia.html ; authors' calculations.
GRP, Min Rub Per Capita	Gross Regional Product in 2000 prices (CPI Deflated). Source: Rosstat, and authors' calculations, www.gks.ru
GRP Growth, Share (Out of 1)	GRP growth rate calculated from the index of GRP physical volume (year-to-year). Source: Rosstat, www.gks.ru
Ratio of Urbanization, Share (Out of 1)	Share of population living in large cities (with more than 250,000 people). Authors' calculations based on the city-level data taken from the UIS Russia (MSU) Database, www.uisrussia.msu.ru .
Share of Employed in Public Sector (Percent)	The percentage of employed in public sector (healthcare and education). Source: Rosstat, www.gks.ru
Ratio of Young People to Labor Force (Per 1,000 People)	The number of young people (age less than 18) relative to 1,000 people in labor force. Source: Rosstat, www.gks.ru
Ratio of Pensioners to Labor Force (Per 1,000 People)	The number of pensioners relative to 1,000 people in labor force. Source: Rosstat, www.gks.ru
Index of Tax Potential	The ratio between regions' estimated tax income the average regional tax income. Source: Ministry of Finance, www.minfin.ru
Index of Budget Expenditures	The ratio of the estimated regional expenditures relative to the average budget expenditures in Russia's regions. Source: Ministry of Finance, www.minfin.ru
Governor's Experience: Years Worked in Region	The number of years a governor worked in a region before he came into office. Source: ICSID Database.
Insider Governor: Any Ties to Region	Dummy = 1 if a governor's most recent place of work is in region. Governors who served as deputies in the Federation Council, State Duma, or Verkhovny Sovet prior to becoming governor, but were representing the region are coded 1. Governors worked in a region during any period of time before they came into office are coded 1. Source: ICSID Database.
Governor's Experience in Federal Structures	Dummy = 1 if a governor worked in federal structures prior to being elected or appointed. Source: ICSID Database.
Governor Turnover	Dummy = 1 if a new governor was elected or appointed in year t in region i . Source: ICSID Database.
Governor's Tenure	Number of years a governor is holding her office in each year t in region i . Source: ICSID Database.
KPRF Vote Share - Federal Duma Elections, Share (Out of 1)	Share of votes for the KPRF communist party at the Federal Duma Elections (1995, 1999, 2003, 2007). Sources: http://www.cikrf.ru ; Erik Herron's website on Politics in East Central Europe and Eurasia, http://web.ku.edu/herron/elections/index.html
TPC Indicator	Average temperature in January weighted by population density. Instrument. Source: Rosstat, www.gks.ru , and authors' calculations.