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

Supplementary On-Line Appendix

Draft version: July 24, 2015

Contents

1 Data Description: Further Details

Our final sample includes 78 regions: we exclude

- Chechen Republic, Ingush Republic – due to the low quality of the data (or the complete lack of them)
- Yamalo-Nenets AO, Nenets AO, Khanty-Mansi AO – as these regions are included into larger regions (Arkhangelsk oblast and Tyumen oblast, respectively)

Figure 1: Duma Elections Vote Margin

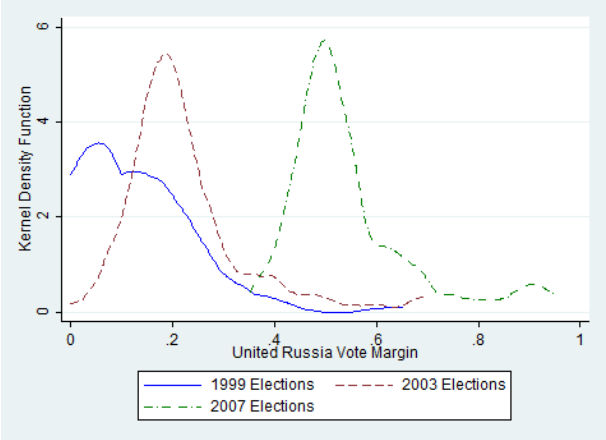
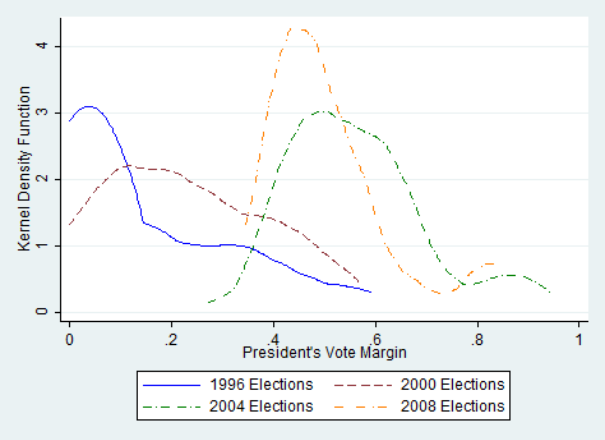


Figure 2: Presidential Elections Vote Margin



2 Regression-based Identification Strategy: Further Technical Details

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

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

Where Δy_{it} is the year-on-year change in total transfers, 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 wish to test the trade-off between the provision of economic growth and the electoral outcome measures, we also include the interaction term, $z_{it-1}\omega_{it-1}$. Finally, c_i is a vector of region fixed effects, d_t is a vector of time fixed effects, and ε_{it} is a idiosyncratic, serially correlated, and heteroskedastic error term.

- Applying the Hadri (2000) unit root test to our dependent variable (total transfers per capita) suggests that transfers are non-stationary for all regions (taking into account heterogeneity in errors), whereas first-differenced transfers are stationary. We should treat the results of the unit root test with caution since most existing panel-data unit root tests assume the case of large N and large or fixed T, which is not the case for our data (see De Blunder and Dhaene (2012)). We retain absolute values of transfers per capita and GRP per capita at $t-1$ on the right-hand side of equation, both of

which may be non-stationary, in order to control for the base level from which the change in transfers and the GRP growth is observed. We argue these more limited non-stationarity problems may be partially mitigated by our modeling strategy as the Persyn and Westerlund (2008), Westerlund (2007) approach suggests the existence of cointegration between these two variables according to panel statistics (P_τ and P_α). Therefore, Equation 1 may be roughly treated as an error correction model.

- The results of the Arellano and Bond (1991) autocorrelation test allow us to conclude that there is no AR(2) autocorrelation in our models estimated by the system GMM, which means we have no AR(1) autocorrelation in ε_{it}.

- Although the small number of cross-sectional units, N remains a concern, Soto (2009) shows that system GMM still outperforms other types of estimation strategies.

- The Blundell-Bond System GMM Estimation Approach. See Blundell and Bond (1998) for the theoretical outline of the method, and Rodman (2006) on its implementation in Stata.

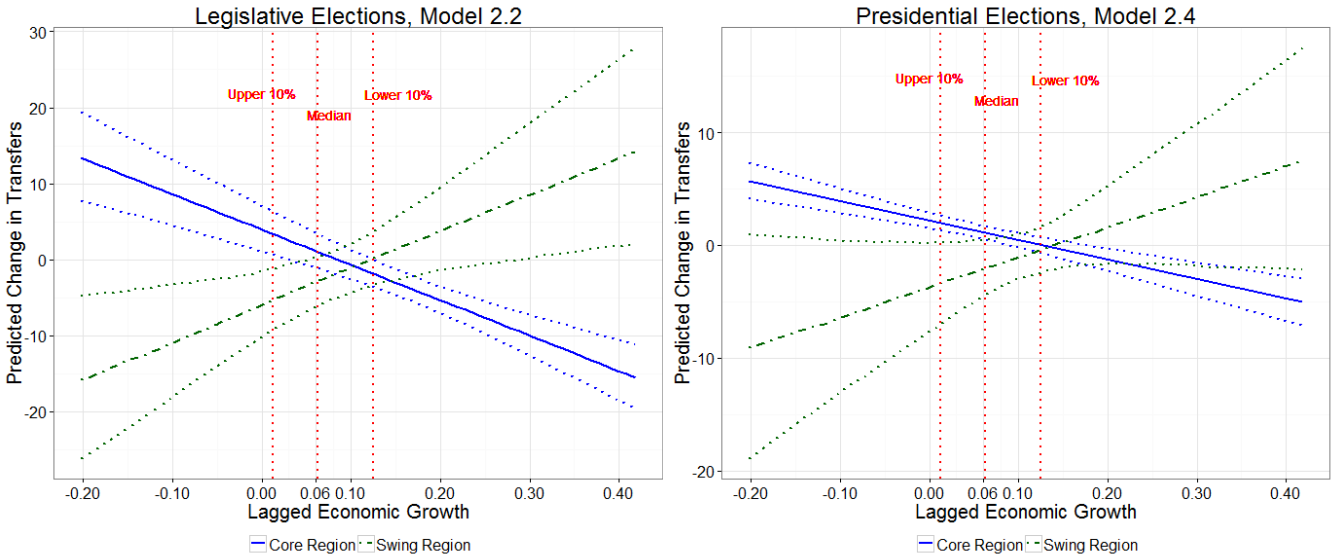
3 Simulated Predicted Transfers

In order to calculate predicted change in transfers per capita (our dependent variable) for different values of vote margins, along with the confidence intervals, we follow the approach by Tomz, Wittenberg, and King (2003). First, we estimate Equation 1 by the system GMM method, and then take the coefficient estimates $\hat{\beta}$ and their estimated covariance matrix $\widehat{V}(\hat{\beta})$ to simulate 1,000 coefficients out of the multivariate normal distribution $N_p\left(\hat{\beta}, \widehat{V}(\hat{\beta})\right)$, where $p = 20$ is the number of parameters in Equation 1. Second, we calculate 1,000 simulated predicted values (predicted change in transfers per capita) as $\widehat{\Delta y} = X\beta_{\text{sim}}$, where X includes all 20 covariates. We create a grid for the lagged growth variable, from its minimum value in 2000–2008 (-0.202) to its maximum value (0.42) with the step 0.01. We calculate $\widehat{\Delta y}$ for each value of growth on the grid.

We then use the quantile function to plot the median value for the distribution of $\widehat{\Delta y}$, conditional on economic growth. To get the 90% confidence intervals we take 5% and 95% percentiles of the distribution for $\widehat{\Delta y}$ (conditional on growth).

Simulated predicted change in transfers (per capita) is plotted in Figure 3 for Model (2) Table 2 (see the main text) for the United Russia vote margin, and for Model (4) Table 2 for the President's vote margin.

Figure 3: Predicted Transfers for a Core and a Swing Region, Conditional on Economic Growth (with 90% confidence intervals)



4 Marginal Effects

Another possible way to interpret the effect of vote margin in the interaction term is to calculate marginal effects (based on Brambor, Clark, and Golder (2006)).

From Equation (1) we can calculate the marginal effect of the vote margin z_{it-1} in the following way:

$$ME_z = \frac{\partial \Delta y_{it}}{\partial z_{it-1}} = \alpha + \beta \omega_{it-1}, \tag{2}$$

i.e. interpretation of the 1% change in the vote margin z_{it-1} is conditional on economic growth ω_{it-1}.

We calculate conditional (on ω_{it-1}) variance of the estimated marginal effect $\widehat{ME}_z$ in the following way

[0]In Figure 3 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.

$$Var\left(\widehat{ME}_z|\omega_{it-1}\right) = Var\left(\hat{\alpha}\right) + Var\left(\hat{\beta}\right)\left(\omega_{it-1}\right)^2 + 2Cov\left(\hat{\alpha},\hat{\beta}\right)\omega_{it-1}, \tag{3}$$

where $\hat{\alpha}$ and $\hat{\beta}$ are system GMM estimates from Equation 1.

$(1-\delta)$ confidence intervals can then be found as

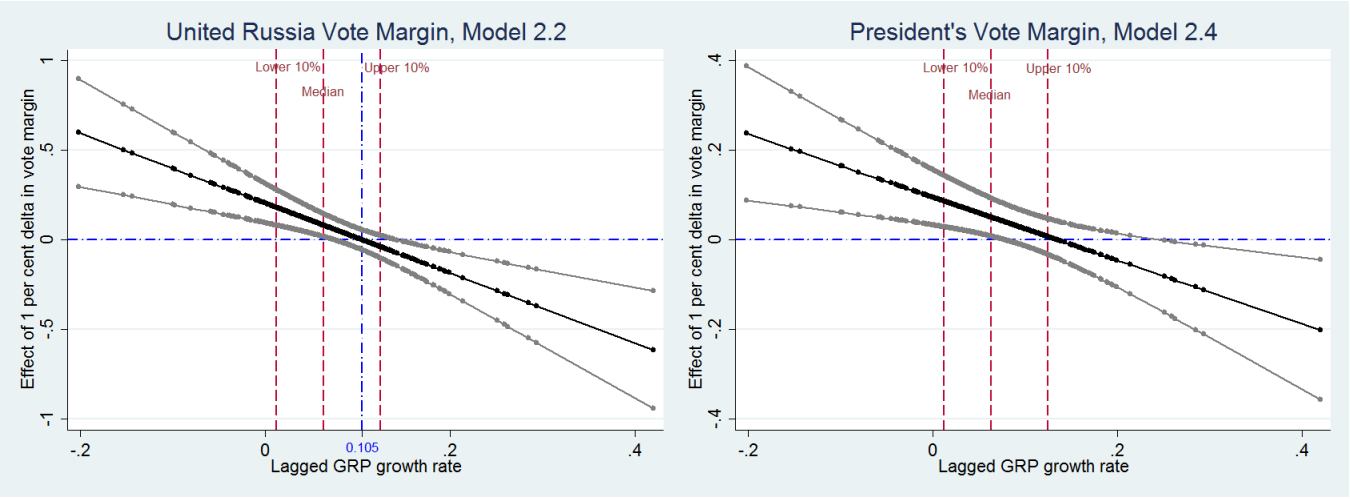
$$\tilde{ME}_z \pm \phi_{\delta/2}\sqrt{\widehat{Var}\left(\widehat{ME}_z|\omega_{it-1}\right)}, \tag{4}$$

where $\phi_{\delta/2}$ is the $(1-\delta/2)$ percent quantile taken from the cumulative standard normal distribution (assuming that our system GMM estimates are asymptotically normal).

The examples of the marginal effects, with the 90% confidence intervals, are presented below:

- in Figure 3 for the model specification (2) from the main table (2) (see the main text);
- in Figure 3 for the model specification (4) from the main table (2) (see the main text).

Figure 4: Marginal Effects for Vote Margins (Model 2 & 4 Table 2), pooled 2000–2008 (with 90% confidence intervals), 702 observations



5 Tables: Robustness Checks

1. **Fixed Effects Estimation.** Table 1: the main models for the dependent variable – transfers per capita – fixed effects estimation. Fixed effects estimation results are biased, when there is a lagged dependent variable included as a covariate. The results suggest that even with fixed effects estimation we can find evidence in favor of our hypothesis, but the size of the effect is smaller (possibly, because it is based on biased estimates).

   Figure 5 presents the predicted outcomes for a core and a swing region, based on Model 1.2. The magnitude of the effects is different (in terms of the predicted growth in transfers), but the direction is similar to our main results.

2. **Modeling in Levels.** Table 2: the main models for the dependent variable – transfers per capita – in levels. Results when levels of transfers rather than first differences used suggest that our main effects of interest still exist, but the identification problems may interfere: coefficients for lagged transfers close to 1 (when we take into account their standard errors), which confirms nonstationarity issues.

3. **Additional Instrumental Variable for Growth.** Table 3: the main models with the additional instrument for economic growth added, the lagged by three periods $(t-3)$ growth in transfers. Adding this instrument decreases the sample size from the period 2000–2008 (702 obs) to 2002–2008 (540 obs). The results remain roughly robust, the main difference is that the vote margin variable is now significant only in Model (3). However, since we have the statistically significant interaction term with economic growth, the direction of the total effect of vote margin remains the same.

   Figure 6 presents the effect of 1% change in the UR vote margin on the change in transfers (the outcome variable) from Model 3.2.

4. **Omitting Potential Outliers.** Table 4: the main models for first differenced per capita transfers in 2000–2008, for the sample of 75 regions: without the Moscow city and the Saint-Petersburg city regions in Models (1) and (2) (a usual strategy to eliminate this large regions as outliers); and without Chukotka AO as another potential outlier in Models (3) and (4) (this region has high per capita indicators due to low population levels).

5. **Not Truncated Vote Margins.** Table 5: the main models with vote margin variables are not truncated at zero (we preserve negative values). The results are quite similar to the results in the main text for truncated vote margins.

   Figure 7 presents the predicted outcomes for a core and a swing region, based on Model 5.2.

6. **Different Interaction Terms: Nonlinearities in Growth.** Tables 6 and 7 estimate 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 spurious.

Table 1: Determinants of Total Transfers 2000–2008, Per Capita: Fixed Effects Estimation

	(1) Model	(2) Model	(3) Model
L.GRP Growth Rate	-3.542**	0.312	1.200
	(1.719)	(1.163)	(1.420)
L.GRP per capita	0.000	0.000	0.001
	(0.008)	(0.008)	(0.008)
L.Transfers per capita	-0.249***	-0.240***	-0.239***
	(0.018)	(0.020)	(0.019)
L.UR Vote Margin in Duma	-0.401	0.779	
	(0.448)	(0.660)	
L.GRP Growth*UR Margin in Duma		-16.359*	
		(8.580)	
L.President's Vote Margin			0.063
			(0.594)
L.GRP growth*President's Vote Margin			-11.610**
			(5.753)
LD.Ratio of Urbanization	4.087**	3.707**	3.781**
	(1.851)	(1.716)	(1.740)
LD.Share of Employed in Public Sector	0.176	0.163	0.159
	(0.177)	(0.167)	(0.167)
LD.Ratio of Young People to Labor Force	-0.007	-0.006	-0.004
	(0.005)	(0.005)	(0.005)
LD.Ratio of Pensioners to Labor Force	-0.000	-0.001	-0.000
	(0.004)	(0.005)	(0.004)
LD.Index of Tax Potential	-0.569**	-0.566**	-0.591**
	(0.263)	(0.262)	(0.263)
LD.Index of Budget Expenditures	5.466**	5.270**	5.329**
	(2.665)	(2.529)	(2.571)
Constant	1.340***	1.041**	1.146**
	(0.456)	(0.409)	(0.499)
Year Effects	Yes	Yes	Yes
Observations	702	702	702

Cluster-robust standard errors in parentheses.

Dependent Variable: Difference in Total Transfers, Per Capita.

Model (1): Base specification.

Model (2): Interaction Term.

Model (3): Base specification with Presidential Vote Share.

Model (4): Interaction Term with Presidential Vote Share.

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

[0]In Figure 3 Vote Margin for the Core Region is assumed to be 50%, and Vote Margin for the Swing Region is 1%. Predicted Transfers and their 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.

Figure 5: Predicted Transfers for a Core and a Swing Region from FE Regressions, Conditional on Economic Growth (with 90% confidence intervals)

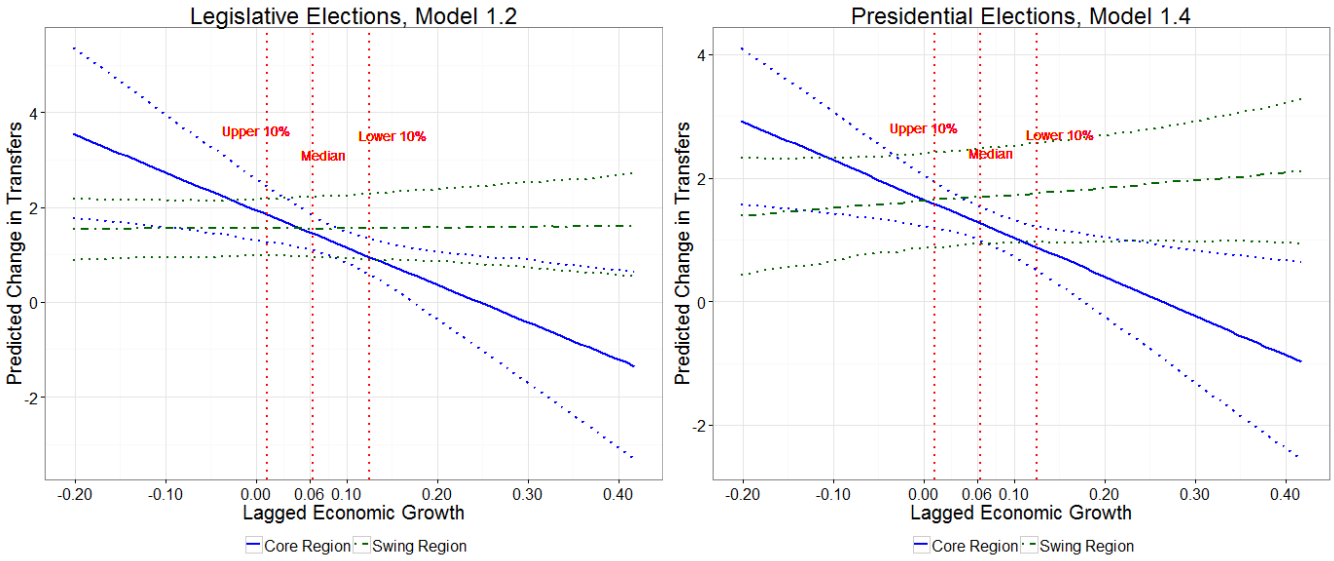


Table 2: Determinants of Total Transfers 2000–2008, Per Capita: Main Models In Levels

	(1) Model	(2) Model	(3) Model	(4) Model
L.GRP Growth Rate	-20.968***	43.189**	42.953*	7.955
	(4.288)	(21.010)	(22.446)	(8.223)
L.GRP per capita	0.002	-0.006	-0.014	0.001
	(0.008)	(0.008)	(0.014)	(0.010)
L.Transfers per capita	0.829***	0.905***	0.905***	0.859***
	(0.082)	(0.086)	(0.062)	(0.097)
L.UR Vote Margin in Duma	8.667	19.976***	17.575***	
	(7.679)	(7.463)	(6.385)	
L.GRP Growth*UR Margin in Duma		-186.687***	-183.174***	
		(63.032)	(63.842)	
L.President's Vote Margin				11.844
				(7.660)
L.GRP growth*President's Vote Margin				-45.160***
				(13.704)
L.Ratio of Urbanization	1.122	1.986	1.745	0.817
	(3.764)	(2.607)	(2.037)	(2.682)
L.Share of Employed in Public Sector	-0.251	-0.154	-0.436	-0.241
	(0.359)	(0.262)	(0.350)	(0.417)
L.Ratio of Young People to Labor Force	0.029	0.014	0.024	0.025
	(0.027)	(0.017)	(0.018)	(0.025)
L.Ratio of Pensioners to Labor Force	0.017	0.006	-0.003	0.017
	(0.014)	(0.010)	(0.006)	(0.014)
L.Index of Tax Potential	-0.326	-0.113	-0.001	-0.234
	(0.230)	(0.383)	(0.520)	(0.418)
L.Index of Budget Expenditures	2.032**	1.368	1.132***	1.691**
	(0.956)	(0.838)	(0.432)	(0.816)
Constant	-14.246	-9.873	-4.530	-14.667
	(12.126)	(8.958)	(4.002)	(10.150)
Year Effects	Yes	Yes	Yes	Yes
Observations	702	702	702	702

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

Dependent Variable: 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

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

Table 3: Determinants of Total Transfers 2002–2008, Per Capita: Main Results With Additional Instrument – Growth in Transfers at $(t-3)$

	(1) Model	(2) Model	(3) Model	(4) Model
L.GRP Growth Rate	-12.527***	30.553*	30.685*	49.844*
	(2.772)	(15.709)	(16.400)	(26.339)
L.GRP per capita	0.000	0.002	0.000	-0.002
	(0.005)	(0.005)	(0.005)	(0.004)
L.Transfers per capita	0.059*	0.087***	0.092***	0.045
	(0.035)	(0.031)	(0.031)	(0.030)
L.UR Vote Margin in Duma	5.705	12.457	12.581	
	(7.687)	(8.921)	(8.129)	
L.GRP Growth*UR Margin in Duma		-134.125***	-136.377***	
		(43.824)	(46.536)	
L.President's Vote Margin				11.379**
				(5.368)
L.GRP growth*President's Vote Margin				-105.788***
				(38.573)
LD.Ratio of Urbanization	5.610	-11.722	-12.404	43.311
	(24.182)	(23.829)	(30.116)	(38.881)
LD.Share of Employed in Public Sector	-0.361	-0.707	-0.746	-0.248
	(0.606)	(0.996)	(0.963)	(1.034)
LD.Ratio of Young People to Labor Force	0.021	-0.012	-0.009	-0.010
	(0.033)	(0.023)	(0.026)	(0.030)
LD.Ratio of Pensioners to Labor Force	0.062*	0.010	0.001	0.003
	(0.032)	(0.027)	(0.033)	(0.026)
LD.Index of Tax Potential	-0.826***	-0.857***	-0.600**	-0.648*
	(0.286)	(0.321)	(0.295)	(0.334)
LD.Index of Budget Expenditures	9.499***	8.768***	8.138***	8.479***
	(0.702)	(0.901)	(0.885)	(0.978)
Constant	-1.962	-3.000	-2.780	-5.003
	(4.043)	(4.263)	(3.600)	(3.260)
Year Effects	Yes	Yes	Yes	Yes
Observations	540	540	540	540

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 IVs for growth

Model (2): Interaction Term Added, with IVs 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

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

Figure 6: Marginal Effects for Vote Margin in Duma and Growth (Model 2 Table 3), pooled 2002–2008 (with 90% confidence intervals), 540 observations, with additional instrument for lagged economic growth: $(t-3)$ growth in transfers

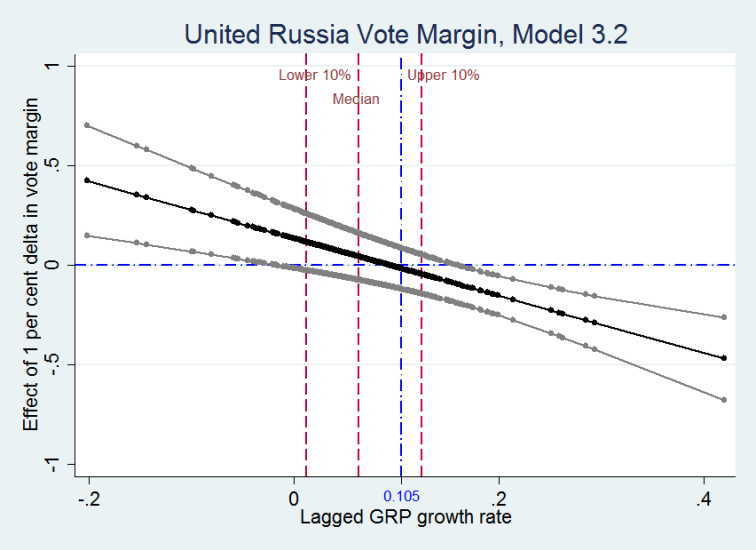


Table 4: Determinants of Total Transfers 2000–2008, Per Capita: Without Outliers

	(1) Model	(2) Model	(3) Model	(4) Model
L.GRP Growth Rate	41.952**	32.530**	14.520**	7.276
	(18.310)	(14.917)	(6.323)	(8.527)
L.GRP per capita	-0.004	-0.004	-0.001	0.001
	(0.006)	(0.003)	(0.001)	(0.003)
L.Transfers per capita	0.070***	0.033	0.080**	0.091***
	(0.025)	(0.037)	(0.035)	(0.034)
L.UR Vote Margin in Duma	18.005**		4.756**	
	(7.987)		(2.290)	
L.GRP Growth*UR Margin in Duma	-165.175***		-55.374*	
	(49.248)		(28.733)	
L.President's Vote Margin		11.870*		0.146
		(6.573)		(1.851)
L.GRP growth*President's Vote Margin		-75.134***		-8.799
		(20.687)		(17.585)
LD.Ratio of Urbanization	23.043	99.094	12.016	9.127
	(53.723)	(88.528)	(8.358)	(20.282)
LD.Share of Employed in Public Sector	-0.505	-0.119	-0.593	-0.311
	(1.073)	(1.256)	(0.598)	(0.534)
LD.Ratio of Young People to Labor Force	0.007	0.010	0.003	-0.009
	(0.025)	(0.026)	(0.018)	(0.020)
LD.Ratio of Pensioners to Labor Force	-0.005	-0.017	0.006	0.008
	(0.033)	(0.027)	(0.024)	(0.026)
LD.Index of Tax Potential	-0.706***	-0.737***	0.139	0.104
	(0.252)	(0.234)	(0.181)	(0.370)
LD.Index of Budget Expenditures	8.852***	9.019***	-2.088	-1.714
	(1.053)	(1.017)	(1.861)	(1.975)
Constant	-4.683	-4.923	-0.792	-0.045
	(3.132)	(3.567)	(0.589)	(0.835)
Year Effects	Yes	Yes	Yes	Yes
Observations	684	684	693	693

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

Dependent Variable: Difference in Total Transfers, Per Capita

Models (1), (3): Model (2) Main Table, UR Vote Margin: Without Moscow and Saint-Petersburg

Models (2), (4): Model (2) Main Table, Vote Margin for President: Without Chukotka AO

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

[0]In Figure 3 Vote Margin for the Core Region is assumed to be 50%, and Vote Margin for the Swing Region is 1%. Predicted Transfers and their 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 5: Determinants of Total Transfers 2000–2008, Per Capita: Main Results with Vote Margins Not Truncated at Zero (with Negative Values)

	(1) Model	(2) Model	(3) Model	(4) Model
L.GRP Growth Rate	-12.510***	48.669**	45.229*	27.500
	(2.522)	(24.668)	(24.542)	(19.621)
L.GRP per capita	-0.002	-0.006	-0.009	-0.001
	(0.004)	(0.004)	(0.006)	(0.003)
L.Transfers per capita	0.054	0.063***	0.057**	0.041*
	(0.036)	(0.018)	(0.027)	(0.024)
L.Not Trimmed UR Vote Margin in Duma	5.046	19.365***	19.288***	
	(4.633)	(6.968)	(7.362)	
L.GRP Growth*Not Trimmed UR Margin in Duma		-188.189***	-182.271***	
		(62.435)	(62.247)	
L.Not Trimmed President's Vote Margin				8.859***
				(3.433)
L.GRP Growth*Not Trimmed President's Vote Margin				-70.421**
				(29.298)
LD.Ratio of Urbanization	2.399	15.798	38.358	11.245
	(26.551)	(23.546)	(47.488)	(14.553)
LD.Share of Employed in Public Sector	-0.157	-0.741	-1.261	-0.137
	(0.591)	(1.140)	(1.289)	(0.720)
LD.Ratio of Young People to Labor Force	0.040	0.042	0.068	0.026*
	(0.044)	(0.042)	(0.057)	(0.013)
LD.Ratio of Pensioners to Labor Force	0.042	0.023	0.039	0.007
	(0.056)	(0.049)	(0.080)	(0.016)
LD.Index of Tax Potential	-0.822***	-0.748**	-0.468	-0.958**
	(0.281)	(0.291)	(0.314)	(0.418)
LD.Index of Budget Expenditures	10.003***	8.381***	7.511***	9.157***
	(0.839)	(1.141)	(0.991)	(0.757)
Constant	1.189	-2.096	-0.979	-1.795
	(1.365)	(2.547)	(2.578)	(1.109)
Year Effects	Yes	Yes	Yes	Yes
Observations	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

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: additional instruments (overID restrictions) are valid

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

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

Figure 7: Predicted Transfers for a Core and a Swing Region, Conditional on Economic Growth (with 90% confidence intervals), based on Table 5 for vote margins with negative values

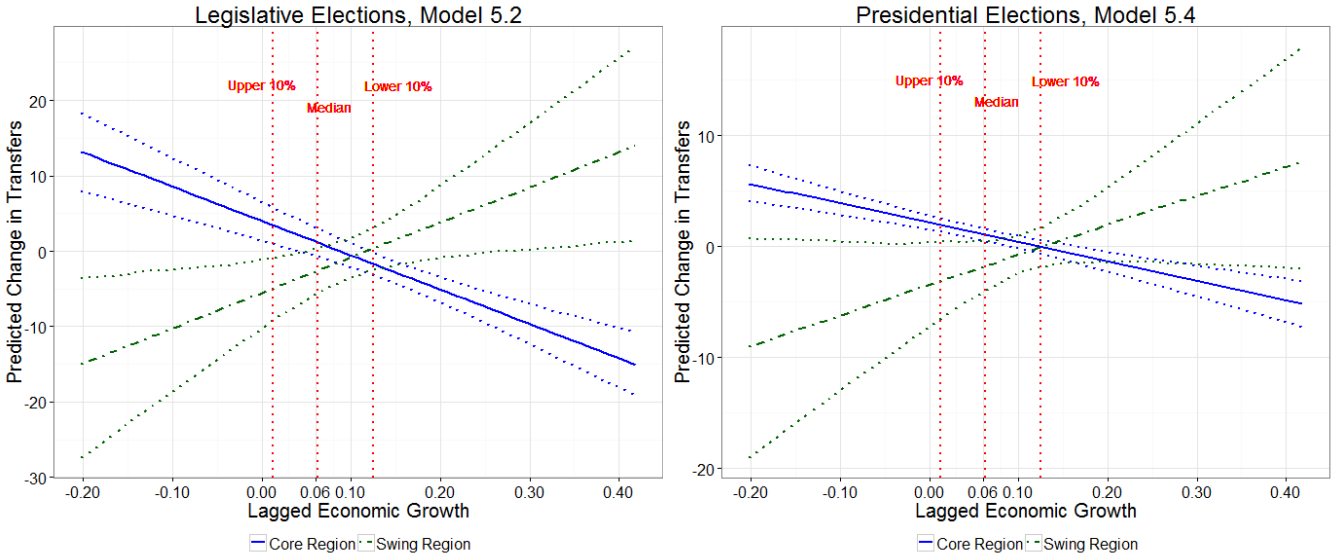


Table 6: Determinants of Total Transfers 2000–2008, Per Capita: Test for Nonlinearities in Growth, with UR Vote Margin

	(1) Model	(2) Model	(3) Model	(4) Model	(5) Model	(6) Model
L.GRP Growth Rate	-13.336***	-10.828**	-11.562***	-9.439***	-12.641***	-12.095***
	(2.526)	(5.412)	(3.069)	(2.582)	(2.833)	(1.898)
L.GRP per capita	-0.003	-0.001	-0.002	-0.000	-0.002	-0.003
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)
L.Transfers per capita	0.052	0.050	0.054	0.056	0.060	0.047
	(0.034)	(0.043)	(0.039)	(0.038)	(0.040)	(0.041)
L.UR Vote Margin in Duma	4.964	6.188	5.645	5.994	6.112	6.142
	(3.963)	(4.884)	(4.985)	(5.683)	(5.972)	(4.984)
L.Interaction Between a Control Var & Growth	-3067.991	1.716	-0.420	0.107	19.912	13.770
	(2684.183)	(14.341)	(0.350)	(0.183)	(12.901)	(11.401)
LD.Ratio of Urbanization	317.753	-7.503	0.237	0.290	3.649	39.824
	(259.502)	(26.295)	(35.532)	(27.914)	(28.971)	(42.711)
LD.Share of Employed in Public Sector	-0.383	0.079	0.738	0.320	-0.263	-0.561
	(0.583)	(1.725)	(0.901)	(0.709)	(0.407)	(0.427)
LD.Ratio of Young People to Labor Force	0.054	0.030	0.100	0.030	0.053	0.066
	(0.051)	(0.063)	(0.112)	(0.051)	(0.070)	(0.056)
LD.Ratio of Pensioners to Labor Force	0.055	0.050	0.026	0.005	0.037	0.057
	(0.059)	(0.058)	(0.066)	(0.057)	(0.070)	(0.070)
LD.Index of Tax Potential	-0.718**	-0.860***	-0.797***	-0.825**	-1.756***	-0.536*
	(0.306)	(0.302)	(0.257)	(0.327)	(0.601)	(0.284)
LD.Index of Budget Expenditures	9.657***	10.097***	9.461***	9.974***	10.351***	6.278**
	(0.970)	(1.014)	(0.903)	(0.915)	(0.810)	(2.808)
Constant	1.715	0.642	2.042	1.959	1.294	1.907
	(1.571)	(1.632)	(2.476)	(1.856)	(1.950)	(1.916)
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

Specification: Model (2) from the main table

Interaction with Growth: From Urbanization to Index of Budgetary Expenditures (for every control variable)

$^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$

Table 7: Determinants of Total Transfers 2000–2008, Per Capita: Test for Nonlinearities in Growth, with Vote Margin for President

	(1) Model	(2) Model	(3) Model	(4) Model	(5) Model	(6) Model
L.GRP Growth Rate	-9.820***	-11.402*	-10.328***	-6.939**	-11.756***	-9.691***
	(2.581)	(5.854)	(3.530)	(2.921)	(2.844)	(1.701)
L.GRP per capita	-0.006	-0.001	-0.002	-0.000	-0.002	-0.004
	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
L.Transfers per capita	0.047*	0.046	0.055**	0.047	0.060**	0.044
	(0.028)	(0.044)	(0.027)	(0.035)	(0.029)	(0.035)
L.President's Vote Margin	4.328	5.445	4.502	6.597	5.071	4.953
	(2.739)	(4.399)	(3.120)	(4.525)	(4.365)	(4.090)
L.Interaction Between a Control Var & Growth	-3740.139**	-3.903	-0.548	0.144	20.531	11.970
	(1843.045)	(15.527)	(0.463)	(0.159)	(15.551)	(12.884)
LD.Ratio of Urbanization	381.719**	-21.836	-9.623	-14.844	-11.216	19.749
	(181.468)	(37.389)	(28.824)	(38.853)	(30.074)	(28.156)
LD.Share of Employed in Public Sector	0.084	0.649	0.747	0.474	-0.344	-0.388
	(0.763)	(2.050)	(0.991)	(0.917)	(0.518)	(0.419)
LD.Ratio of Young People to Labor Force	0.054	0.022	0.105	0.015	0.041	0.058
	(0.044)	(0.057)	(0.115)	(0.031)	(0.060)	(0.041)
LD.Ratio of Pensioners to Labor Force	0.067	0.012	-0.005	-0.020	0.019	0.055
	(0.052)	(0.036)	(0.031)	(0.035)	(0.064)	(0.053)
LD.Index of Tax Potential	-0.692**	-1.040***	-0.866**	-1.066**	-1.766**	-0.563**
	(0.307)	(0.369)	(0.401)	(0.448)	(0.740)	(0.285)
LD.Index of Budget Expenditures	9.858***	10.704***	9.718***	10.325***	10.674***	6.681**
	(0.917)	(1.077)	(0.897)	(0.775)	(0.879)	(3.025)
Constant	1.431	-0.158	1.616	0.253	0.460	1.226
	(1.613)	(1.905)	(2.635)	(1.704)	(2.031)	(1.723)
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

Specification: Model (2) from the main table

Interaction with Growth: From Urbanization to Index of Budgetary Expenditures (for every control variable)

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

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