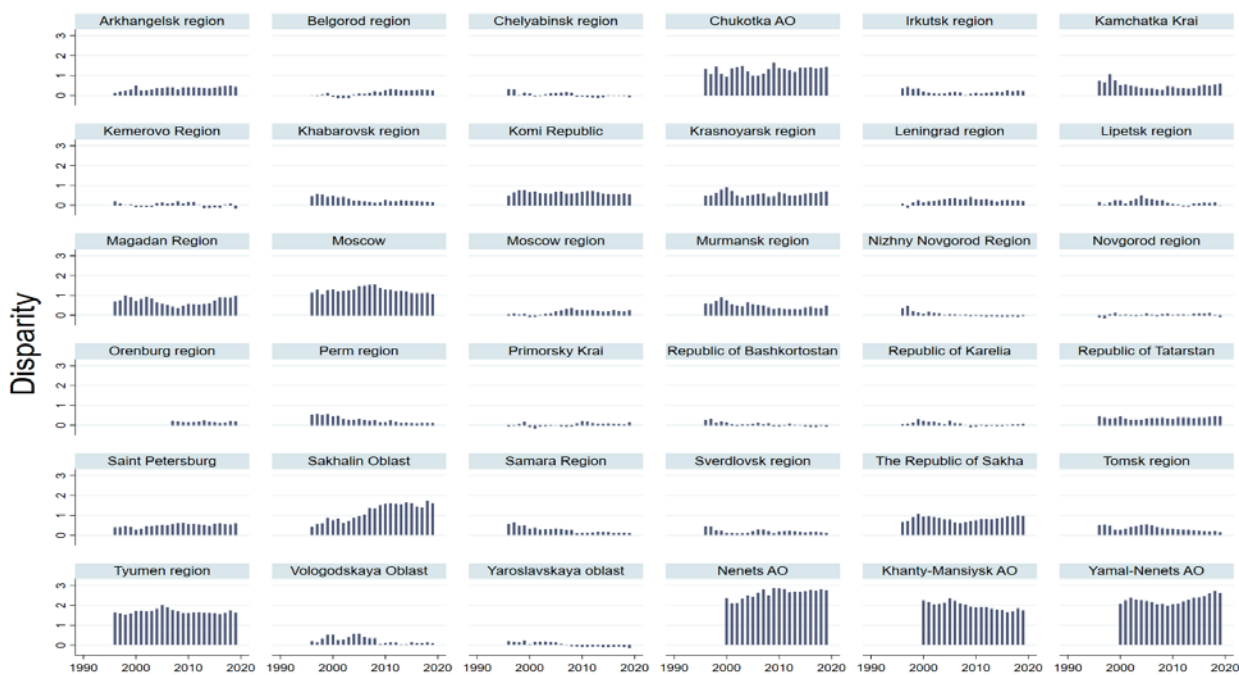


## Appendices

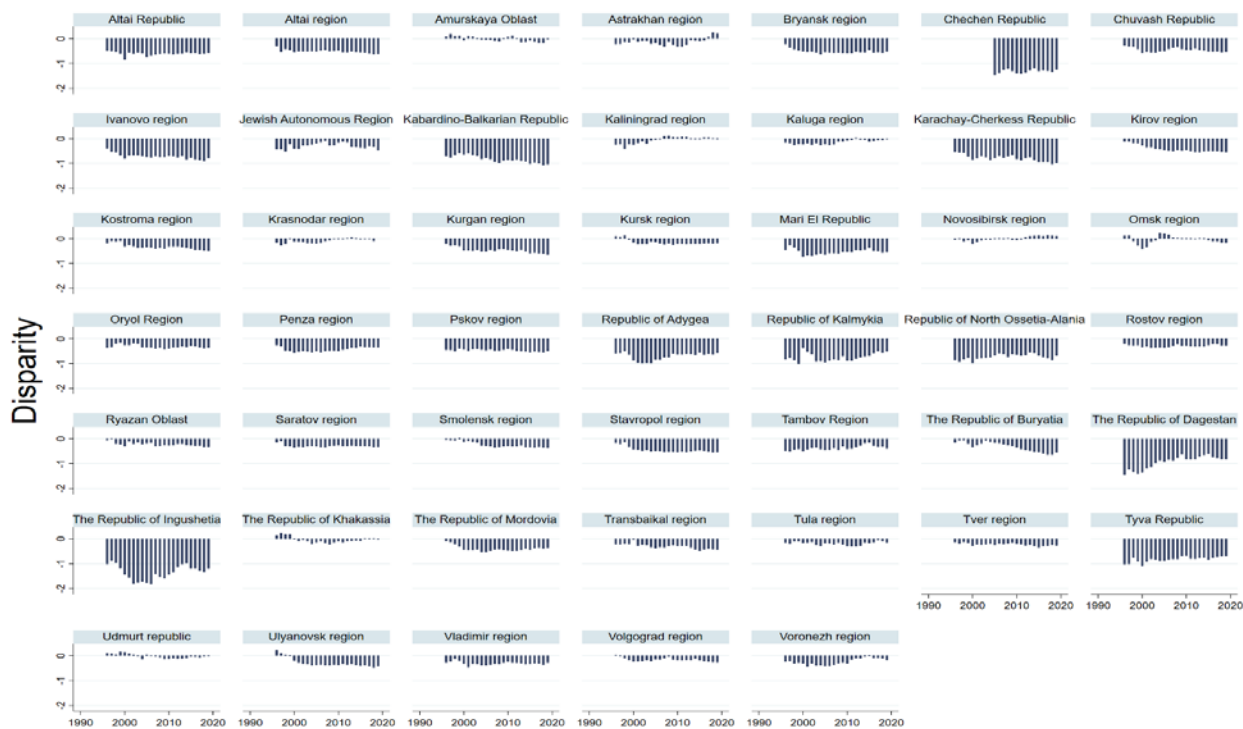
### Appendix 1. Russian regions with GRP per capita higher than the average



Graphs by region

Data source: Federal Statistics Service

### Appendix 2. Russian regions with GRP per capita less than the average



Data source: Federal Statistics Service

### Appendix 3. The preliminary test results

**Table A3.1. Cross-sectional dependency test**

Variable	CD-test	p-value	average joint T	mean $\rho$	mean abs( $\rho$ )
Disparity	16.199	0.000	23.22	0.06	0.39
Real GRP per capita (log)	275.739	0.000	23.22	0.98	0.98
Trade openness	161.701	0.000	19.84	0.61	0.65
Investment (share of GRP)	269.532	0.000	23.50	0.95	0.95
Labor force	41.837	0.000	23.67	0.14	0.50
Natural resources (share of GRP)	19.068	0.000	15.98	0.08	0.49
FDC (regional)	218.27	0.000	14.00	1.00	1.00

Source: authors.

**Table A3.2. Heteroscedasticity test**

Variable	Disparity	Disparity with T-vars
delta	15.089	2.060
p-value	0.000	0.039
adj. delta	19.229	5.868
adj. p-value	0.000	0.000

Source: authors.

### Appendix 4. Descriptive statistics (brackets show mean value)

Level	Std. Dev.	Min	Max
<b><i>DSPR (-0.0000)</i></b>			
overall	0.6783	-1.8249	2.8857
between	0.6931	-1.3614	2.6105
within	0.1333	-0.7590	0.5755
<b><i>FDC (0.2306)</i></b>			
overall	0.0117	0.2061	0.2459
between	0	0.2306	0.2306
within	0.0117	0.2061	0.2459
<b><i>TRO (0.0117)</i></b>			
overall	0.0220	0.00001	0.4994
between	0.0098	0.0002	0.0644
within	0.0198	-0.0344	0.4690
<b><i>INV (63.4897)</i></b>			
overall	102.5171	0.0633	804.4211
between	28.3152	17.1258	176.5883
within	98.8415	-112.9983	691.3226
<b><i>LLF (13.3277)</i></b>			
overall	0.9538	9.9570	15.8028
between	0.9563	10.0484	15.6018
within	0.0967	11.8800	13.9626
<b><i>NRS (10.9505)</i></b>			
overall	15.7330	0	78.6000
between	13.0162	0	54.1000
within	8.9405	-42.9496	41.3692

Notes. DSPR denotes regional disparity, FDC represents fiscal decentralization, TRO refers to open trade, INV indicates regional investment, LLF denotes labor force, NRS defines natural resources.

Data source: Federal Statistics Service.

## Appendix 5. The results of the quantile regression

**Table A5.1. The results of quantile regression (governor is a member of the “United Russia” party)**

Variables	location	scale	Q10	Q20	Q30	Q40	Q50	Q60	Q70	Q80	Q90
FDC	-1.398	1.859*	<b>-4.120**</b>	<b>-3.307**</b>	<b>-2.689*</b>	-2.151	-1.543	-1.000	-0.466	0.271	1.618
	(-1.532)	(-1.089)	(-1.796)	(-1.56)	(-1.459)	(-1.443)	(-1.505)	(-1.624)	(-1.791)	(-2.078)	(-2.706)
TRO	<b>5.107***</b>	1.837	2.417	<b>3.221*</b>	<b>3.831**</b>	<b>4.363***</b>	<b>4.964***</b>	<b>5.500***</b>	<b>6.028***</b>	<b>6.756***</b>	<b>8.087**</b>
	(-1.781)	(-1.266)	(-2.089)	(-1.814)	(-1.697)	(-1.678)	(-1.75)	(-1.888)	(-2.082)	(-2.416)	(-3.146)
INV	0.0019***	0.0008**	0.0007	<b>0.001**</b>	<b>0.001***</b>	<b>0.0016***</b>	<b>0.0019***</b>	<b>0.0021***</b>	<b>0.002***</b>	<b>0.003***</b>	<b>0.003***</b>
	(-0.0005)	(-0.0003)	(-0.0005)	(-0.0005)	(-0.0004)	(-0.0004)	(-0.0005)	(-0.0005)	(-0.0005)	(-0.0006)	(-0.0008)
LLF	<b>0.170***</b>	-0.009	<b>0.184***</b>	<b>0.180***</b>	<b>0.177***</b>	<b>0.174***</b>	<b>0.171***</b>	<b>0.168***</b>	<b>0.166***</b>	<b>0.162***</b>	<b>0.155***</b>
	(-0.0196)	(-0.014)	(-0.023)	(-0.02)	(-0.019)	(-0.019)	(-0.0193)	(-0.021)	(-0.023)	(-0.027)	(-0.035)
NRS	<b>0.029***</b>	<b>0.003***</b>	<b>0.025***</b>	<b>0.026***</b>	<b>0.027***</b>	<b>0.028***</b>	<b>0.0284***</b>	<b>0.029***</b>	<b>0.0299***</b>	<b>0.031***</b>	<b>0.033***</b>
	(-0.0013)	(-0.001)	(-0.002)	(-0.0013)	(-0.0012)	(-0.0012)	(-0.0013)	(-0.0014)	(-0.002)	(-0.0018)	(-0.0023)
Const	-33.29	73.31***	140.6***	108.6***	-84.19**	-62.97*	-38.99	-17.6	3.488	32.53	85.67
	(-39.79)	(-28.29)	(-46.65)	(-40.53)	(-37.9)	(-37.48)	(-39.08)	(-42.09)	(-46.43)	(-53.95)	(-70.38)
Obs.	975	975	975	975	975	975	975	975	975	975	975

Notes: the symbols are explained the under-table-notes of Table 6

Data source: Federal Statistics Service.

**Table A5.2. The results of quantile regression (governor is a member of other parties)**

Variables	location	scale	Q10	Q20	Q30	Q40	Q50	Q60	Q70	Q80	Q90
FDC	-2.141	2.076	-5.063	-4.149	-3.56	-2.866	-2.202	-1.659	-0.731	0.0998	1.5
	(-3.366)	(-2.152)	(-4.059)	(-3.563)	(-3.38)	(-3.294)	(-3.362)	(-3.51)	(-3.951)	(-4.48)	(-5.558)
TRO	7.788	5.588	-0.076	2.383	3.971	5.838	7.624	9.085	11.58	13.82	17.59
	(-8.74)	(-5.586)	(-10.64)	(-9.231)	(-8.777)	(-8.545)	(-8.738)	(-9.109)	(-10.27)	(-11.62)	(-14.36)
INV	-0.0014	-0.0008	-0.0002	-0.0005	-0.0008	-0.0011	-0.0014	-0.0016	-0.0020	-0.0023	-0.0029
	(-0.0012)	(-0.00076)	(-0.0014)	(-0.00125)	(-0.0012)	(-0.0011)	(-0.0011)	(-0.0012)	(-0.0013)	(-0.0015)	(-0.0019)
LLF	0.101	<b>-0.0813**</b>	<b>0.215***</b>	<b>0.180***</b>	<b>0.157**</b>	<b>0.129**</b>	0.103	0.0822	0.0459	0.0134	-0.0414
	(-0.063)	(-0.0402)	(-0.0798)	(-0.0663)	(-0.064)	(-0.062)	(-0.064)	(-0.0658)	(-0.0746)	(-0.0839)	(-0.102)
NRS	<b>0.036***</b>	0.004	<b>0.031***</b>	<b>0.033***</b>	<b>0.034***</b>	<b>0.035***</b>	<b>0.036***</b>	<b>0.037***</b>	<b>0.039***</b>	<b>0.040***</b>	<b>0.043***</b>
	(-0.005)	(-0.003)	(-0.00579)	(-0.005)	(-0.0048)	(-0.0047)	(-0.0048)	(-0.005)	(-0.006)	(-0.0063)	(-0.0078)
Const	-101.6	16.65	-125	-117.7	-112.9	-107.4	-102.1	-97.7	-90.26	-83.59	-72.36
	(-77.39)	(-49.46)	(-92.6)	(-81.92)	(-77.63)	(-75.65)	(-77.12)	(-80.61)	(-90.67)	(-102.9)	(-127.9)
Obs.	161	161	161	161	161	161	161	161	161	161	161

Notes: the symbols are explained the under-table-notes of Table 6

Source: authors.

**Table A5.3. The results of quantile regression (governor is a member of “United Russia”)**

Variables	location	scale	Q10	Q20	Q30	Q40	Q50	Q60	Q70	Q80	Q90
FDC	-0.1163	<b>0.1651*</b>	<b>-0.3597**</b>	<b>-0.2856**</b>	<b>-0.2319*</b>	-0.1805	-0.1278	-0.0823	-0.0344	0.0337	0.1520
	(0.1271)	(0.0897)	(0.1505)	(0.1302)	(0.1220)	(0.1203)	(0.1252)	(0.1341)	(0.1476)	(0.1719)	(0.2228)
TO	<b>0.4274***</b>	0.1538	0.2006	<b>0.2697*</b>	<b>0.3197**</b>	<b>0.3676***</b>	<b>0.4167***</b>	<b>0.4591***</b>	<b>0.5037***</b>	<b>0.5671***</b>	<b>0.6774***</b>
	(0.1483)	(0.1046)	(0.1755)	(0.1519)	(0.1422)	(0.1403)	(0.1460)	(0.1565)	(0.1722)	(0.2005)	(0.2598)
INVS	<b>0.0002***</b>	<b>0.0001**</b>	0.0001	<b>0.0001**</b>	<b>0.0001***</b>	<b>0.0001***</b>	<b>0.0002***</b>	<b>0.0002***</b>	<b>0.0002***</b>	<b>0.0002***</b>	<b>0.0003***</b>
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)
LLF	<b>0.0142***</b>	-0.0008	<b>0.0153***</b>	<b>0.0150***</b>	<b>0.0147***</b>	<b>0.0145***</b>	<b>0.0143***</b>	<b>0.0141***</b>	<b>0.0138***</b>	<b>0.0135***</b>	<b>0.0130***</b>
	(0.0016)	(0.0012)	(0.0019)	(0.0017)	(0.0016)	(0.0015)	(0.0016)	(0.0017)	(0.0019)	(0.0022)	(0.0029)
NRS	<b>0.0024***</b>	<b>0.0002***</b>	<b>0.0021***</b>	<b>0.0022***</b>	<b>0.0023***</b>	<b>0.0023***</b>	<b>0.0024***</b>	<b>0.0024***</b>	<b>0.0025***</b>	<b>0.0026***</b>	<b>0.0027***</b>
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)
Const	-2.7734	<b>6.0528***</b>	<b>-11.696***</b>	<b>-8.978***</b>	<b>-7.0107**</b>	-5.1266	-3.1936	-1.5241	0.2310	2.7253	7.0632
	(3.3068)	(2.3338)	(3.9114)	(3.3871)	(3.1708)	(3.1290)	(3.2532)	(3.4826)	(3.8343)	(4.4698)	(5.8016)
Obs.	975	975	975	975	975	975	975	975	975	975	975

Notes: the symbols are explained the under-table-notes of Table 9

Source: authors.

**Table A5.4. The results of quantile regression (governor is a member of other parties)**

Variables	location	scale	Q10	Q20	Q30	Q40	Q50	Q60	Q70	Q80	Q90
FDC	-0.1877	0.1810	-0.4412	-0.3639	-0.3128	-0.2498	-0.1970	-0.1478	-0.0617	0.0099	0.1279
	(0.2851)	(0.1840)	(0.3406)	(0.2998)	(0.2845)	(0.2778)	(0.2838)	(0.2973)	(0.3390)	(0.3847)	(0.4750)
TO	0.6528	0.4897	-0.0330	0.1763	0.3143	0.4848	0.6279	0.7609	0.9937	1.1875	1.5067
	(0.7644)	(0.4933)	(0.9213)	(0.8018)	(0.7625)	(0.7441)	(0.7615)	(0.7961)	(0.9098)	(1.0302)	(1.2666)
INVS	-0.0001	-0.0001	-0.0000	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0002	-0.0002	-0.0002
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)
LLF	0.0083	<b>-0.0070**</b>	<b>0.0182***</b>	<b>0.0152***</b>	<b>0.0132**</b>	<b>0.0108**</b>	0.0087	0.0068	0.0035	0.0007	-0.0039
	(0.0055)	(0.0035)	(0.0068)	(0.0057)	(0.0055)	(0.0053)	(0.0055)	(0.0057)	(0.0065)	(0.0073)	(0.0089)
NRS	<b>0.0031***</b>	0.0003	<b>0.0026***</b>	<b>0.0028***</b>	<b>0.0029***</b>	<b>0.0030***</b>	<b>0.0030***</b>	<b>0.0031***</b>	<b>0.0033***</b>	<b>0.0034***</b>	<b>0.0036***</b>
	(0.0004)	(0.0003)	(0.0005)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0005)	(0.0006)	(0.0007)
Const	-8.5580	1.6116	-10.8151	-10.1264	-9.6720	-9.1109	-8.6401	-8.2022	-7.4361	-6.7982	-5.7475
	(6.5860)	(4.2503)	(7.8108)	(6.9279)	(6.5689)	(6.4119)	(6.5422)	(6.8629)	(7.8167)	(8.8844)	(10.9834)
Obs.	161	161	161	161	161	161	161	161	161	161	161

Notes: the symbols are explained the under-table-notes of Table 9

Source: authors.

**Table A5.5. Distribution of regions by the quantiles**

quantile 10	quantile 20	quantile 30	quantile 40	quantile 50
North Ossetia Republic Tyva Republic Ivanovo region Dagestan Republic Karachay-Cherkess Republic Kabardino-Balkarian Republic Ingushetia Republic Chechen Republic	Pskov region Kostroma region Kalmykia Republic Bryansk region Chuvash Republic Stavropol region Mari El Republic Kirov region Buryatia Republic Adygea Republic Altai Republic Altai region Kurgan region	Penza region Mordovia Republic Oryol Region Smolensk region Tambov Region Ulyanovsk region Transbaikal region Jewish Autonomous district	Volgograd region Rostov region Tver region Vladimir region Ryazan region Saratov region	Khakassia Republic Novgorod region Chelyabinsk region Bashkortostan Republic Udmurt republic Kaluga region Nizhny Novgorod Region Yaroslavl region Krasnodar region Tula region Voronezh region Omsk region Amur region Kursk region
quantile 60	quantile 70	quantile 80	quantile 90	
Lipetsk region Vologda region Sverdlovsk region Samara Region Perm region Novosibirsk region Kemerovo region Karelia region Primorsky region Kaliningrad region	Belgorod region Leningrad region Irkutsk region Astrakhan region Orenburg region Tomsk region Moscow region Khabarovsk region	Krasnoyarsk region Saint Petersburg Kamchatka region Komi Republic Murmansk region Tatarstan Republic Arkhangelsk region	Nenets Autonomous district Yamal-Nenets Autonomous district Khanty-Mansiysk Autonomous district Tyumen region Sakhalin region Chukotka Autonomous district Moscow Magadan Region Sakha Republic	

Source: authors.