

Decentralisation and the Distributive Incidence of the Great Recession
Supplemental File

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A1 Data Summary

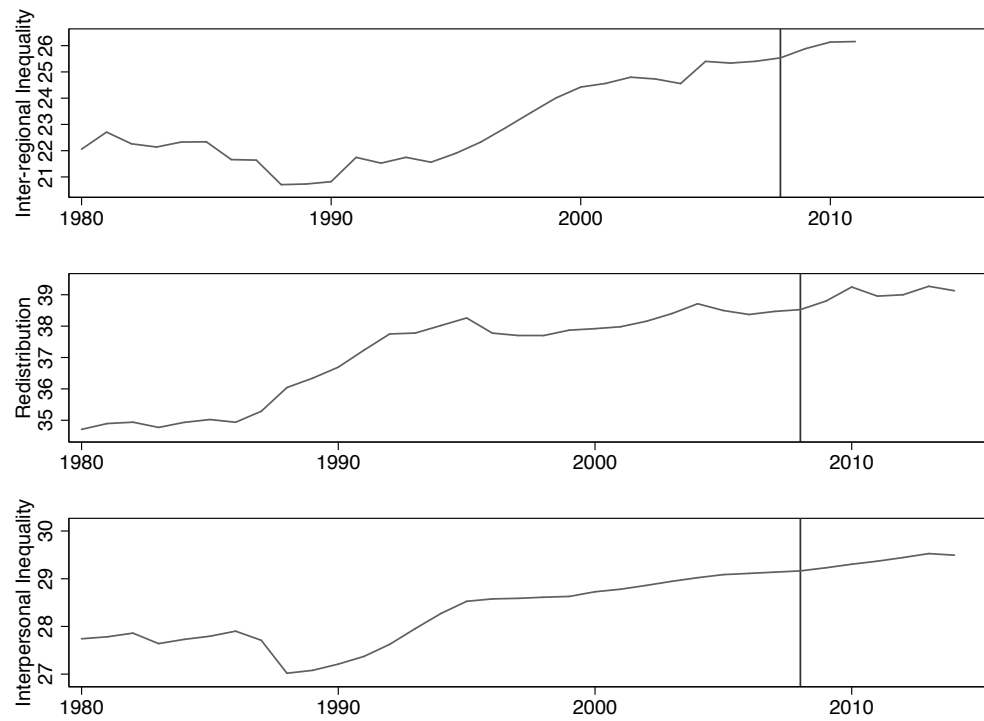
A1.1 Summary Statistics

Table A1: Summary Statistics and Data Sources

Variable Name	N	Mean	SD	Min	Max	Source
Inequality Measures- Main Text						
Interregional Inequality (COV)	363	25.399	12.011	13.364	77.177	Lee and Rogers (2018)
Relative Redistribution	363	38.686	7.393	22.672	52.260	Solt v6.2 (2015)
Interpersonal Inequality	363	28.408	4.186	20.730	37.450	Solt v6.2 (2015)
Inequality Measures- Appendix						
Interregional Inequality (COVW)	363	25.739	8.815	11.382	54.859	Lee and Rogers (2018)
Interregional Inequality (ADGINI)	363	12.120	4.320	5.382	29.229	Lee and Rogers (2018)
Interregional Inequality (SSGINI)	363	11.897	3.891	6.300	24.650	Lee and Rogers (2018)
Interregional Inequality (COV, NUTS 3)	316	28.537	9.089	12.889	56.800	Lee and Rogers (2018)
Interregional Inequality (COVW, NUTS 3)	332	33.228	12.148	15.473	61.159	Lee and Rogers (2018)
Interregional Inequality (ADGINI, NUTS 3)	316	13.491	3.835	4.539	23.984	Lee and Rogers (2018)
90/10 Income Ratio	269	3.139	0.761	1.938	5.034	Lupu and Pontusson (2011)
Central Social Spending	273	14.583	6.098	2.800	26.600	Eurostat
State and Local Social Spending	327	20.148	12.803	3.964	56.572	GFS
Decentralisation Measures						
Local Expenditure	363	0.112	0.161	0.000	0.629	World Bank
Local Tax Revenue	363	0.040	0.076	0.000	0.333	World Bank
Local Revenue	363	0.181	0.114	0.025	0.473	World Bank
Recession Measure						
Post-Recession	363	0.173	0.379	0.000	1.000	Authors' Calculation
Control Measures						
ln(Per capita GDP)	363	10.224	0.324	9.232	10.855	Penn World Tables
Working Age Population	363	67.216	1.738	63.685	72.566	World Bank
Trade Openness	363	86.930	41.147	17.186	187.849	World Bank
Proportional Representation	363	1.066	0.966	0.000	2.000	Armingeon et al. (2011)
Leftist Government	363	21.306	19.695	0.000	63.600	Armingeon et al. (2011)
Market Inequality	363	46.178	3.960	36.980	58.630	Solt v6.2 (2015)
Federalism	363	0.567	0.878	0.000	2.000	Armingeon et al. (2011)
Parliamentary Systems	363	1.719	0.611	0.000	2.000	Armingeon et al. (2011)
Centripetal Institutions	363	189.812	108.586	0.000	360.874	Gerring et al. (2005)
Party System Nationalisation	328	0.741	0.133	0.281	0.923	Bochsler (2011)
Lower House Malapportionment	299	-3.485	0.859	-4.805	-2.027	Samuels & Snyder (2001)

A1.2 Data Trends, by Year

Figure A1: Interpersonal Inequality, Redistribution, and Inter-regional Inequality, Sample Trends



A1.3 Distributive Trends, by Country

Figure A2: Interregional Inequality, by Country

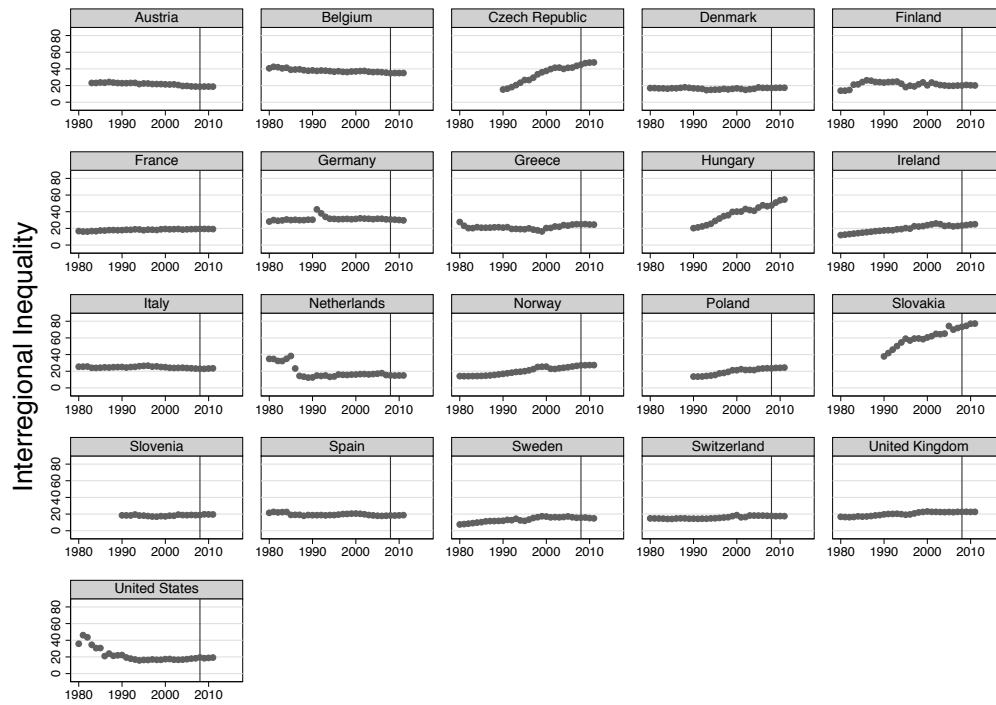


Figure A3: Redistribution, by Country

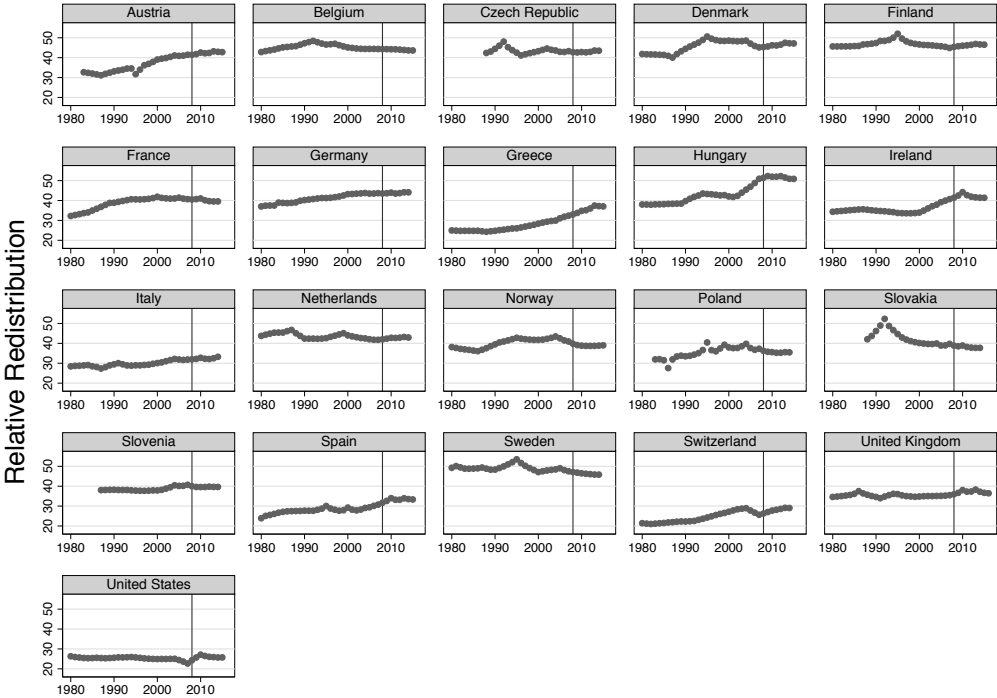
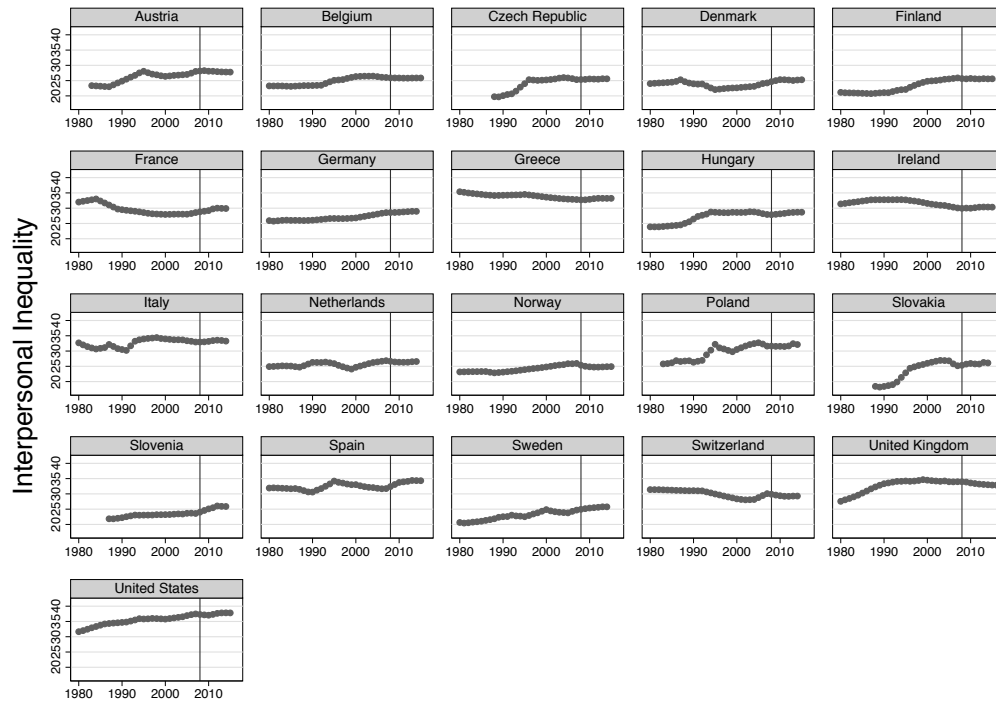


Figure A4: Interpersonal Inequality, by Country



A2 Alternative Dependent Variables

A2.1 Interregional Inequality Measures

Existing research in economic geography focuses on three common measures of dispersion of regional productivity—the coefficient of variation (COV), the population-weighted coefficient of variation (COVW), and the region-adjusted gini coefficient (ADGINI) (Lessmann, 2009). COV, COVW, and ADGINI are measures of dispersion with different properties. These indicators are explained below.

The most simple, easy to interpret, regional variation measure is COV, described in the main text. Political scientists will often require a regional variation measure that scales to important political features, such as population or land area. It may be important to know in research on civil conflict, for example, that a highly populated region has a very low GDP per capita or a sparsely populated region has very high per capita GDP. The COV measure gives the same analytical weight to all regions. A weighted coefficient of variance (COVW)—in this case weighted by population—adjusts for differences in population according to the following formula:

$$\text{COVW} = \frac{1}{\bar{y}} \left(\sum_{i=1}^n p_i (\bar{y} - y_i)^2 \right)^{1/2} \quad (1)$$

where p_i represents the share of the country's total population in the region i . Values of COVW are calculated as the ratio of the standard deviation to the mean ($\bar{y}$) when p_i is equally applied to every region (i.e., $1/n$) within a country. When assigning a different value of p_i to these regions according to their proportion of population, it is mean-independent. COVW is thus robust against single extreme observations, in addition to satisfying the Pigou-Dalton transfer principle (Dalton, 1920, Pigou, 1912).

Alternatively, we test the region-adjusted Gini coefficient (ADGINI). This measure captures the dispersion of productivity across sub-national regions. ADGINI retains meaningful information about the type of distribution. In ADGINI, additional weight is given to a region's per capita productivity as it veers father away from the mean of the inter-regional productivity distribution. This weighted value makes the inequality measure more sensitive to changes in the upper or lower tail of this distribution. ADGINI is calculated as follows:

$$\text{ADGINI} = \frac{2 \sum_{i=1}^n i y_i}{n \sum_{i=1}^n y_i} - \frac{n+1}{n} \quad (2)$$

where y_i is the GDP per capita for region i and n is the number of subnational units (Lessmann, 2009).

In Appendix Table A2, we show our results for interregional inequality measured with COV, COVW, and ADGINI using data at the NUTS3 geographic level.¹ Our models in the main text use the NUTS2 (state, province) level. We view this level as the most appropriate, given our focus on decentralisation, because NUTS2 or the NUTS2 equivalent is the most common geographic level for sub-national spending and revenue collection. However, in some countries in our sample, certain spending and revenue policies may be administered at a lower geographic level. Thus, we check our results using data for interregional inequality calculated at the (lower) NUTS3 level.

In Appendix Table A3, we show our results are robust using these alternative measures of inter-regional inequality, COVW and ADGINI, and a new scale and scope-independent measure of interregional inequality (SSGINI), described below.

Existing research in economics and political geography employs indicators that typically assume that the variance in the number of units has no effect on the measures. Nations vary considerably in how many regional units exist at this level. This assumption may be misleading: it would require that there is no within-unit variation (Bochsler, 2010). Lee and Rogers (2019) build upon existing research on the measurement of party system nationalization (which has similar unit concerns) to construct a measure that is standardized across the number of units (Bochsler, 2010, p.163). They calculate a new standardized gini indicator based on the formula developed by Bochler (2010) to measure regional inequality, independent of the number political units considered. Thus, this measure should not be sensitive to the size or number of regions involved. The standardized adjusted Gini coefficient of

¹NUTS3 is a standardized indicator for countries in the European Union. Thus Japan and the USA drop from our sample in these results.

regional GDP, labeled SSGINI, is constructed as follows:

$$\text{SSGINI} = 1 - \left(\frac{2 \sum_{i=1}^n (p_i (\sum_{j=1}^i y_j - \frac{y_i}{2}))}{\sum_{i=1}^n p_i \sum_{i=1}^n y_i} \right)^{1/\log \left(\frac{(\sum_{i=1}^n p_i)^2}{\sum_{i=1}^n p_i^2} \right)} \quad (3)$$

where y_i is for a region's GDP and y_j is thus the accumulated proportion of regional GDP. In the equation, the value subtracted from 1 represents portion of regional equality, equivalent to the measure of 'party nationalisation' developed by Bochsler (2010). This subtraction obtains the residual commensurate with the measure of interregional inequality. This modification creates an cross-nationally comparable regional inequality index ranging from 0 to 1, where the larger the value, the higher the level of interregional inequality.

Table A2: Results with Interregional Inequality Measured at NUTS3 Level

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Dependent variable:</i>	COV (NUTS3)		COVW (NUTS3)		ADGINI (NUTS3)	
Post-Recession	-0.039* (0.024)	-0.023 (0.021)	-0.044* (0.027)	-0.020 (0.024)	-0.016 (0.012)	-0.010 (0.011)
Local Expenditure _{t-1}	-0.064** (0.026)		-0.096*** (0.029)		-0.048*** (0.014)	
Post-Recession*Local Expenditure_{t-1}	-0.037*** (0.014)		-0.030** (0.013)		-0.022** (0.010)	
Local Tax Revenue _{t-1}		0.175*** (0.033)		0.266*** (0.039)		0.055*** (0.014)
Post-Recession*Local Tax Revenue_{t-1}		-0.035* (0.021)		-0.026 (0.021)		-0.026* (0.014)
ln(Per capita GDP) _{t-1}	0.094*** (0.025)	0.051** (0.024)	0.159*** (0.035)	0.100*** (0.033)	0.048*** (0.012)	0.029*** (0.011)
Working Age Population _{t-1}	0.010*** (0.002)	0.013*** (0.002)	0.008*** (0.002)	0.012*** (0.002)	0.004*** (0.001)	0.006*** (0.001)
Trade Openness _{t-1}	0.001*** (0.000)	0.001*** (0.000)	0.001** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Proportional Representation	0.007 (0.004)	-0.003 (0.005)	0.014** (0.006)	-0.002 (0.007)	-0.002 (0.001)	-0.006** (0.002)
Leftist Government _{t-1}	-0.000* (0.000)	-0.000* (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)
Market Inequality _{t-1}	0.004*** (0.001)	0.004*** (0.001)	0.006*** (0.001)	0.007*** (0.001)	0.000 (0.000)	0.001** (0.000)
Observations	316	316	316	316	316	316
R-squared	0.973	0.974	0.976	0.977	0.971	0.970
Number of Countries	19	19	19	19	19	19
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.10

Table A3: Results with Alternative Interregional Inequality Measures

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Dependent variable:</i>	COVW		ADGINI		SSGINI	
Post-Recession	-2.270*** (0.517)	-2.008*** (0.492)	-1.246*** (0.252)	-1.189*** (0.228)	-2.738*** (1.030)	-2.428** (0.972)
Local Expenditure _{t-1}	-0.405 (0.900)		0.571 (0.506)		-0.795 (1.641)	
Post-Recession*Local Expenditure_{t-1}	-0.255 (0.294)		-0.244 (0.176)		-1.408* (0.760)	
Local Tax Revenue _{t-1}		1.150 (1.622)		0.442 (0.799)		-2.938 (1.889)
Post-Recession*Local Tax Revenue_{t-1}		-1.848*** (0.604)		-0.747*** (0.231)		-4.399*** (1.499)
ln(Per capita GDP) _{t-1}	1.000 (0.753)	0.726 (0.667)	0.382 (0.314)	0.402 (0.291)	8.292*** (1.128)	7.993*** (1.162)
Working Age Population _{t-1}	0.162 (0.102)	0.173* (0.100)	0.162*** (0.044)	0.160*** (0.043)	0.109 (0.075)	0.125 (0.078)
Trade Openness _{t-1}	0.013** (0.006)	0.013** (0.006)	0.006** (0.003)	0.007*** (0.002)	0.009 (0.008)	0.008 (0.007)
Proportional Representation	0.014 (0.244)	-0.028 (0.281)	0.197 (0.141)	0.192 (0.150)	-0.391** (0.189)	-0.182 (0.247)
Leftist Government _{t-1}	0.002 (0.001)	0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.002 (0.003)	-0.003 (0.003)
Market Inequality _{t-1}	0.033 (0.033)	0.036 (0.027)	0.029* (0.016)	0.022* (0.012)	0.077 (0.051)	0.091* (0.047)
COVW _{t-1}	0.870*** (0.020)	0.869*** (0.019)				
ADGINI _{t-1}			0.799*** (0.021)	0.794*** (0.021)		
SSGINI _{t-1}					-14.352*** (3.361)	-15.329*** (3.162)
Observations	363	363	363	363	363	363
R-squared	0.990	0.990	0.990	0.990	0.939	0.940
Number of Countries	21	21	21	21	21	21
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.10

A2.2 Redistribution Measures

Table A4: Results with Alternative Redistribution Measures

	(1)	(2)	(3)	(4)
<i>Dependent variable:</i>	Central Social Spending		State and Local Social Spending	
Post-Recession	6.433*** (1.509)	6.355*** (1.580)	6.563*** (1.747)	3.487** (1.544)
Local Expenditure _{t-1}	-8.775*** (2.142)		-2.852 (3.990)	
Post-Recession*Local Expenditure_{t-1}	-4.331*** (1.480)		-6.887*** (2.407)	
Local Tax Revenue _{t-1}		4.481 (3.050)		-27.417*** (5.883)
Post-Recession*Local Tax Revenue_{t-1}		-8.500*** (2.531)		-2.971*** (1.072)
ln(Per capita GDP) _{t-1}	0.899 (1.183)	-0.373 (1.510)	-4.956*** (1.661)	-2.678 (2.014)
Working Age Population _{t-1}	-0.229** (0.108)	-0.106 (0.097)	-0.573*** (0.123)	-0.582*** (0.119)
Trade Openness _{t-1}	-0.024*** (0.009)	-0.036*** (0.010)	0.016 (0.015)	0.013 (0.016)
Proportional Representation	0.866*** (0.297)	0.789** (0.397)	-2.503*** (0.334)	-0.989** (0.499)
Leftist Government _{t-1}	-0.015*** (0.004)	-0.020*** (0.005)	-0.004 (0.005)	-0.004 (0.005)
Market Inequality _{t-1}	0.144** (0.056)	0.257*** (0.049)	-0.168*** (0.053)	-0.094 (0.060)
Observations	273	273	327	327
R-squared	0.972	0.970	0.982	0.982
Number of Countries	18	18	20	20
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.10

A2.3 Interpersonal Inequality Measures

Table A5: Results with Alternative Interpersonal Inequality Measures

	(1)	(2)	(3)	(4)
<i>Dependent variable:</i>	Market Inequality		90-10 Income Ratio	
Post-Recession	7.863*** (1.017)	8.445*** (1.110)	1.025*** (0.175)	1.106*** (0.169)
Local Expenditure _{t-1}	-13.988*** (2.091)		0.594** (0.253)	
Post-Recession*Local Expenditure_{t-1}	1.627* (0.861)		0.294** (0.133)	
Local Tax Revenue _{t-1}		0.285 (2.891)		0.012 (0.432)
Post-Recession*Local Tax Revenue_{t-1}		5.112*** (1.503)		0.140 (0.189)
ln(Per capita GDP) _{t-1}	-0.376 (1.536)	-1.771 (1.779)	-0.178 (0.189)	-0.122 (0.181)
Working Age Population _{t-1}	-0.178 (0.109)	-0.158 (0.107)	0.017 (0.013)	0.016 (0.012)
Trade Openness _{t-1}	-0.010 (0.009)	-0.013* (0.007)	-0.002 (0.001)	-0.002 (0.001)
Proportional Representation	0.247 (0.230)	-0.308 (0.300)	-0.257*** (0.048)	-0.236*** (0.040)
Leftist Government _{t-1}	-0.028*** (0.005)	-0.026*** (0.005)	0.001** (0.000)	0.001* (0.001)
Observations	363	363	269	269
R-squared	0.834	0.824	0.979	0.978
Number of Countries	21	21	20	20
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.10

A3 Additional Measure of Fiscal Decentralisation

Table A6: Results with Alternative Fiscal Federalism Measure

	(1)	(2)	(3)
<i>Dependent variable:</i>	Interregional Inequality	Redistribution	Interpersonal Inequality
Post-Recession	-7.295*** (0.671)	-5.974*** (1.720)	1.673*** (0.552)
Local Revenue _{t-1}	-2.545 (2.164)	25.358*** (5.347)	-2.677** (1.351)
Post-Recession*Local Revenue_{t-1}	-1.415** (0.634)	-5.071* (2.663)	1.503 (0.914)
ln(Per capita GDP) _{t-1}	1.724* (0.921)	3.524 (2.177)	-0.633 (0.702)
Working Age Population _{t-1}	0.291** (0.146)	0.125 (0.117)	-0.207*** (0.032)
Trade Openness _{t-1}	0.014* (0.008)	-0.037** (0.016)	0.016*** (0.004)
Proportional Representation	0.592* (0.328)	0.784** (0.349)	-1.056*** (0.168)
Leftist Government _{t-1}	0.001 (0.002)	0.007** (0.003)	0.002 (0.002)
Market Inequality _{t-1}	0.067 (0.046)	0.759*** (0.111)	0.064*** (0.020)
Interregional Inequality _{t-1}	0.829*** (0.018)		
Redistribution _{t-1}		0.225*** (0.022)	
Interpersonal Inequality _{t-1}			0.423*** (0.023)
Observations	363	363	363
R-squared	0.989	0.977	0.992
Number of Countries	21	21	21
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.10

A4 Results with Added Controls

A4.1 Interregional Inequality

Table A7: Results for Interregional Inequality with Added Controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Dependent variable:</i>					Interregional Inequality					
Post-Recession	-7.423*** (0.737)	-7.423*** (0.737)	-7.750*** (0.773)	-0.070 (0.928)	-6.648*** (0.663)	-7.355*** (0.697)	-7.355*** (0.697)	-7.718*** (0.742)	0.107 (0.849)	-6.233*** (0.679)
Local Expenditure _{t-1}	1.862 (1.271)	1.862 (1.271)	2.330* (1.324)	1.915 (1.298)	0.081 (1.447)					
Post-Rec*Local Expend_{t-1}	-0.901** (0.445)	-0.901** (0.445)	-1.144** (0.493)	-0.659 (0.498)	-0.667 (0.421)					
Local Tax Revenue _{t-1}						0.866 (1.937)	0.866 (1.937)	0.894 (1.913)	-0.515 (2.358)	0.656 (1.789)
Post-Rec*Local Tax Rev_{t-1}						-2.351*** (0.548)	-2.351*** (0.548)	-2.662*** (0.603)	-2.361*** (0.725)	-2.863*** (1.095)
<i>Federalism</i>	0.793 (1.257)					1.541 (1.232)				
<i>Parliamentary System</i>		-0.396 (0.629)					-0.770 (0.616)			
<i>Centripetal Institutions</i>			0.035* (0.020)					0.034* (0.019)		
<i>PS Nationalization</i>				1.587*** (0.609)					1.709** (0.689)	
<i>ln(LH Malapportionment)</i>					-1.257 (0.874)					-1.343* (0.803)
ln(Per capita GDP) _{t-1}	1.491 (1.030)	1.491 (1.030)	1.046 (1.121)	2.418** (1.037)	1.303 (1.061)	1.614* (0.938)	1.614* (0.938)	1.262 (1.010)	2.576** (1.076)	0.919 (0.944)
Working Age Pop _{t-1}	0.300** (0.149)	0.300** (0.149)	0.328** (0.156)	0.178** (0.090)	0.232* (0.135)	0.293** (0.144)	0.293** (0.144)	0.317** (0.149)	0.173** (0.088)	0.240* (0.126)
Trade Openness _{t-1}	0.011 (0.009)	0.011 (0.009)	0.007 (0.008)	0.010 (0.010)	0.020** (0.010)	0.014* (0.008)	0.014* (0.008)	0.010 (0.008)	0.012 (0.009)	0.021** (0.009)
Prop Representation	0.530 (0.351)	0.530 (0.351)	0.368 (0.340)	-0.002 (0.335)	0.319 (0.329)	0.547 (0.382)	0.547 (0.382)	0.402 (0.371)	0.057 (0.319)	0.293 (0.320)
Leftist Government _{t-1}	0.001 (0.002)	0.001 (0.002)	0.000 (0.002)	0.002 (0.002)	0.001 (0.002)	0.000 (0.002)	0.000 (0.002)	-0.000 (0.002)	0.001 (0.002)	-0.000 (0.002)
Market Inequality _{t-1}	0.096* (0.055)	0.096* (0.055)	0.080 (0.056)	0.109*** (0.041)	-0.016 (0.052)	0.073 (0.045)	0.073 (0.045)	0.053 (0.048)	0.086** (0.035)	-0.027 (0.039)
Inter-regional Ineq _{t-1}	0.837*** (0.016)	0.837*** (0.016)	0.816*** (0.024)	0.807*** (0.030)	0.831*** (0.016)	0.832*** (0.016)	0.832*** (0.016)	0.811*** (0.024)	0.799*** (0.031)	0.829*** (0.014)
Observations	363	363	363	328	299	363	363	363	328	299
R-squared	0.989	0.989	0.989	0.987	0.988	0.989	0.989	0.990	0.987	0.988
Number of Countries	21	21	21	19	17	21	21	21	19	17
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10

A4.2 Redistribution

Table A8: Results for Redistribution with Added Controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Dependent variable:</i>										
						Redistribution				
Post-Recession	-4.870*** (1.616)	-4.870*** (1.616)	-4.843*** (1.615)	-4.024** (1.981)	-1.086 (1.281)	-4.487*** (1.611)	-4.487*** (1.611)	-4.436*** (1.638)	-3.849** (1.700)	-0.491 (1.309)
Local Expenditure _{t-1}	-1.928 (2.020)	-1.928 (2.020)	-2.764 (1.911)	0.991 (2.110)	3.918* (2.057)					
Post-Rec*Local Expend_{t-1}	-3.298* (1.890)	-3.298* (1.890)	-3.116* (1.854)	-4.894** (2.176)	-2.151* (1.130)					
Local Tax Revenue _{t-1}						15.453*** (4.142)	15.453*** (4.142)	15.037*** (4.066)	20.802*** (5.203)	10.352*** (3.526)
Post-Rec*Local Tax Rev_{t-1}						-8.489*** (2.861)	-8.489*** (2.861)	-8.408*** (2.847)	-9.644*** (2.779)	-6.810*** (2.278)
<i>Federalism</i>	-13.696*** (1.456)					-17.228*** (1.578)				
<i>Parliamentary System</i>		6.848*** (0.728)					8.614*** (0.789)			
<i>Centripetal Institutions</i>			-0.030 (0.021)					-0.019 (0.019)		
<i>PS Nationalization</i>				-1.231 (1.551)					-2.171 (1.634)	
<i>ln(LH Malapportionment)</i>					10.478*** (0.950)					10.685*** (0.958)
ln(Per capita GDP) _{t-1}	4.230* (2.196)	4.230* (2.196)	4.895** (2.107)	5.218** (2.180)	0.364 (1.610)	2.887 (2.214)	2.887 (2.214)	3.231 (2.152)	3.983** (1.955)	0.021 (1.706)
Working Age Pop _{t-1}	0.010 (0.123)	0.010 (0.123)	0.001 (0.122)	0.408*** (0.126)	0.002 (0.093)	0.056 (0.121)	0.056 (0.121)	0.055 (0.121)	0.427*** (0.121)	-0.041 (0.111)
Trade Openness _{t-1}	-0.034** (0.016)	-0.034** (0.016)	-0.029* (0.015)	-0.014 (0.016)	-0.062*** (0.013)	-0.037** (0.016)	-0.037** (0.016)	-0.035** (0.015)	-0.017 (0.015)	-0.054*** (0.011)
Prop Representation	1.279*** (0.331)	1.279*** (0.331)	1.448*** (0.338)	2.199*** (0.470)	-0.128 (0.358)	0.605* (0.365)	0.605* (0.365)	0.713* (0.369)	1.553*** (0.428)	-0.445 (0.377)
Leftist Government _{t-1}	0.011*** (0.004)	0.011*** (0.004)	0.011*** (0.004)	0.014*** (0.004)	0.011** (0.005)	0.009** (0.004)	0.009** (0.004)	0.009** (0.004)	0.012*** (0.004)	0.008** (0.004)
Market Inequality _{t-1}	0.655*** (0.126)	0.655*** (0.126)	0.670*** (0.127)	0.643*** (0.120)	0.422*** (0.093)	0.676*** (0.115)	0.676*** (0.115)	0.691*** (0.116)	0.368*** (0.096)	
Redistribution _{t-1}	0.202*** (0.026)	0.202*** (0.026)	0.199*** (0.025)	0.220*** (0.025)	0.396*** (0.030)	0.205*** (0.020)	0.205*** (0.020)	0.205*** (0.020)	0.213*** (0.021)	0.358*** (0.022)
Observations	363	363	363	328	299	363	363	363	328	299
R-squared	0.975	0.975	0.975	0.979	0.985	0.976	0.976	0.976	0.981	0.986
Number of Countries	21	21	21	19	17	21	21	21	19	17
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10

A4.3 Interpersonal Inequality

Table A9: Results for Interpersonal Inequality with Added Controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Dependent variable:</i>	Interpersonal Inequality									
Post-Recession	1.384*** (0.498)	1.384*** (0.498)	1.329*** (0.506)	1.704*** (0.495)	0.996** (0.486)	1.450*** (0.511)	1.450*** (0.511)	1.363** (0.542)	1.772*** (0.464)	1.276** (0.522)
Local Expenditure _{t-1}	1.281* (0.757)	1.281* (0.757)	1.749** (0.801)	1.481* (0.761)	1.683** (0.817)					
Post-Recession*Local Expenditure_{t-1}	1.437** (0.565)	1.437** (0.565)	1.269** (0.528)	1.843*** (0.531)	1.698*** (0.554)					
Local Tax Revenue _{t-1}						-5.048*** (1.308)	-5.048*** (1.308)	-4.647*** (1.397)	-5.725*** (1.378)	-6.089*** (1.230)
Post-Recession*Local Tax Revenue_{t-1}						2.681** (1.091)	2.681** (1.091)	2.554** (1.080)	2.996*** (1.060)	2.341** (1.137)
<i>Federalism</i>	3.024*** (0.585)					4.477*** (0.506)				
<i>Parliamentary System</i>		-1.512*** (0.292)					-2.238*** (0.253)			
<i>Centripetal Institutions</i>			0.021** (0.009)					0.017* (0.010)		
<i>Party System Nationalization</i>				-0.575* (0.305)					-0.319 (0.407)	
<i>ln(LH Malapportionment)</i>					-1.692*** (0.403)					-2.783*** (0.370)
ln(Per capita GDP) _{t-1}	-0.813 (0.656)	-0.813 (0.656)	-1.239* (0.653)	-1.776** (0.690)	-1.100* (0.662)	-0.386 (0.704)	-0.386 (0.704)	-0.665 (0.702)	-1.272* (0.705)	-0.719 (0.697)
Working Age Population _{t-1}	-0.180*** (0.033)	-0.180*** (0.033)	-0.176*** (0.034)	-0.175*** (0.035)	-0.120*** (0.045)	-0.200*** (0.033)	-0.200*** (0.033)	-0.201*** (0.033)	-0.203*** (0.032)	-0.149*** (0.039)
Trade Openness _{t-1}	0.014*** (0.004)	0.014*** (0.004)	0.011*** (0.004)	0.013*** (0.004)	0.011*** (0.003)	0.016*** (0.004)	0.016*** (0.004)	0.014*** (0.004)	0.015*** (0.004)	0.012*** (0.004)
Proportional Representation	-1.114*** (0.173)	-1.114*** (0.173)	-1.216*** (0.155)	-1.081*** (0.154)	-1.004*** (0.213)	-0.891*** (0.133)	-0.891*** (0.133)	-0.979*** (0.122)	-0.893*** (0.139)	-0.724*** (0.168)
Leftist Government _{t-1}	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.000 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.001 (0.002)	0.003 (0.002)
Market Inequality _{t-1}	0.096*** (0.021)	0.096*** (0.021)	0.083*** (0.020)	0.098*** (0.022)	0.147*** (0.030)	0.077*** (0.018)	0.077*** (0.018)	0.063*** (0.016)	0.078*** (0.017)	0.108*** (0.020)
Interpersonal Inequality _{t-1}	0.412*** (0.025)	0.412*** (0.025)	0.419*** (0.023)	0.399*** (0.029)	0.435*** (0.032)	0.417*** (0.022)	0.417*** (0.022)	0.426*** (0.022)	0.401*** (0.023)	0.462*** (0.027)
Observations	363	363	363	328	299	363	363	363	328	299
R-squared	0.992	0.992	0.992	0.993	0.994	0.992	0.992	0.993	0.993	0.994
Number of Countries	21	21	21	19	17	21	21	21	19	17
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.10

A5 Results from Base Models

A5.1 No Control Variables

Table A10: Results without Control Variables

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Dependent variable:</i>	Inter-regional Inequality		Redistribution		Interpersonal Inequality	
Post-Recession	-7.024*** (0.938)	-6.861*** (0.955)	3.410** (1.708)	2.432 (1.585)	3.473*** (0.740)	3.951*** (0.687)
Local Expenditure _{t-1}	-8.730* (5.245)		-15.689*** (2.311)		1.427 (1.162)	
Post-Recession*Local Expenditure_{t-1}	-6.100*** (2.067)		-7.241** (3.207)		3.140*** (1.173)	
Local Tax Revenue _{t-1}		-20.363*** (3.732)		20.695*** (5.388)		-9.708*** (2.024)
Post-Recession*Local Tax Revenue_{t-1}		-14.228*** (3.871)		-14.472*** (4.800)		5.452*** (1.797)
Observations	363	380	363	380	363	380
R-squared	0.939	0.939	0.960	0.957	0.978	0.979
Number of Countries	21	21	21	21	21	21
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	No	No	No	No	No

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.10

A5.2 No Control Variables, Including LDV

Table A11: Results without Control Variables, Including Lagged Dependent Variable

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Dependent variable:</i>	Inter-regional Inequality		Redistribution		Interpersonal Inequality	
Post-Recession	-5.342*** (0.328)	-5.495*** (0.318)	2.710** (1.317)	2.205* (1.172)	1.773*** (0.388)	2.089*** (0.347)
Local Expenditure _{t-1}	2.130* (1.172)		-8.949*** (2.753)		-0.542 (0.952)	
Post-Recession*Local Expenditure_{t-1}	-1.591*** (0.460)		-5.097** (2.401)		1.335** (0.528)	
Local Tax Revenue _{t-1}		2.789 (1.812)		15.080*** (4.485)		-6.271*** (1.930)
Post-Recession*Local Tax Revenue_{t-1}		-3.002*** (0.574)		-11.490*** (3.601)		2.204** (1.018)
Inter-regional Inequality _{t-1}	0.872*** (0.021)	0.869*** (0.021)				
Redistribution _{t-1}			0.205*** (0.034)	0.242*** (0.022)		
Interpersonal Inequality _{t-1}					0.460*** (0.030)	0.445*** (0.026)
Observations	363	363	363	363	363	363
R-squared	0.989	0.989	0.966	0.966	0.989	0.989
Number of Countries	21	21	21	21	21	21
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	No	No	No	No	No

Notes. Estimation method is OLS with panel corrected standard errors with yearly data. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10

A5.3 AR1 Correlated Errors

Table A12: Results from Full Models with AR1 Correlated Errors

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Dependent variable:</i>	Interregional Inequality		Redistribution		Interpersonal Inequality	
Post-Recession	-12.706*** (2.696)				3.234*** (0.597)	
Local Expenditure _{t-1}	-7.373 (4.922)		-11.109*** (2.292)		4.446*** (1.034)	
Post-Recession*Local Expenditure_{t-1}	-1.917** (0.769)		-2.979** (1.291)		1.068** (0.528)	
Local Tax Revenue _{t-1}		-10.678*** (3.987)		9.278** (3.702)		-4.190*** (1.439)
Post-Recession*Local Tax Revenue_{t-1}		-4.653** (2.061)		-6.496*** (2.177)		2.054** (0.819)
ln(Per capita GDP) _{t-1}	6.100 (3.992)	5.371 (3.738)	2.127 (1.821)	-0.115 (1.787)	-1.939*** (0.731)	-0.735 (0.698)
Working Age Population _{t-1}	1.073** (0.443)	1.116*** (0.418)	-0.394** (0.165)	-0.561*** (0.155)	0.130* (0.069)	0.141** (0.067)
Trade Openness _{t-1}	-0.001 (0.005)	-0.002 (0.005)	0.000 (0.004)	-0.001 (0.004)	0.000 (0.001)	0.000 (0.001)
Proportional Representation	-0.724* (0.417)	-0.515 (0.515)	0.343 (0.355)	0.140 (0.333)	-0.745*** (0.202)	-0.799*** (0.171)
Leftist Government _{t-1}	-0.004 (0.005)	-0.005 (0.005)	-0.000 (0.004)	-0.003 (0.004)	0.000 (0.001)	0.000 (0.001)
Market Inequality _{t-1}	0.102 (0.139)	0.162 (0.125)	0.307*** (0.075)	0.400*** (0.074)	0.208*** (0.030)	0.214*** (0.028)
Observations	382	382	382	382	382	382
R-squared	0.880	0.892	0.972	0.990	0.997	0.998
Number of Countries	21	21	21	21	21	21
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Estimation method is OLS with panel corrected standard errors using yearly data with AR1 correlated errors. All time-varying independent variables lagged one year. All regressions include country and year fixed effects. Robust standard errors in parentheses.

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

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