

“Taxing Choices: International Competition, Domestic Institutions, and the Transformation of Corporate Tax Policy,” *Journal of European Public Policy*.

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Online Appendix

An Overview of Supplementary Estimations

The first column of the Online Appendix table displays the results of estimation of the final model of corporate tax rates. As suggested in the text (see the discussion of Table 2 results), the varieties of coordination model (in which the impacts of U.S. rate change are mediated by coordination) is arguably the most robust and theoretically encompassing model among relevant alternatives. It is displayed in the first column to establish a baseline for comparison across alternative specifications and estimations. In the second column of the table, I report the results of estimation without fixed effects; as noted in the text, there are pluses and minuses of the fixed effects specification. As the table reveals, other than an occasional shift in the substantive magnitude of a coefficient, there is little difference between estimations with and without fixed effects.

The third column of the table estimates a standard weighted spatial lag model. The underlying assumption is that nations simultaneously see each others' policies and competitively respond. As the model entails substantial risk of endogeneity, I follow suggestions in Franzese

and Hays (2007) and use a spatial-two-stage least squares estimator where the instrument for rates in competitors is predicted by exogenous variables in competitors. Weights for degree of competition among nations are the same as those discussed in the text for signals of tax reform in competitors in the Nash model. As Online Appendix Table 1 suggests, net of U.S. tax reforms and their median by coordination as well as direct impacts of international and domestic factors, rate change in competitors does not significantly shape statutory corporate tax rates.

The fourth column displays analysis of the effects of dramatic tax reforms in the post-communist East European nations. A highly plausible argument is that the integration of post-communist political economies with advanced capitalist democracies of Western Europe intensifies tax competition in Europe (Genschel, Kemmerling, and Seils 2011). Generally, one would expect that rich European nations, especially those with extensive economic ties with the East (i.e., border nations), will be particularly sensitive to the widespread adoption of the flat tax in Eastern Europe. I test that hypothesis in the model of column four. In that estimation, I interact the proportion of post-communist East European nations that have adopted the flat tax with European nations that border the East; I also use broader measures of rich EU and total European nations for these interactions. In the table's model as well as these alternatives, there was no evidence of significantly greater pressure on rich European nations to cut rates as the East adopted a radical neoliberal model. In many of these specifications, the flat-tax adoption variable has a marginally significant, negative effect on corporate tax rates in all nations.

The model of the fifth column estimates the independent effects of country size on corporate tax rates. In the classic formulation, small countries gain an advantage by cutting corporate rates when capital is liberalized. The relative gains of large inflows of capital (relative

to the small nation's limited capital tax base) offset the losses in revenues from lower rates. Large nations, with big domestic capital tax bases and other attractions for internationally mobile capital (e.g., big domestic markets, agglomeration effects), do not face the incentives for comparable cuts in corporate rates (see Haufler and Wooton 1999 for an overview of the literature on size and tax competition). As the results displayed in column five suggest, size – independent of the other factors in the model – plays no particular role in either the short or long-term trajectories of corporate tax rates.

The sixth and seventh columns of the table display results for the substitution of actual capital flows for capital market liberalization; the sixth column presents results for re-estimation of the Hays model (2003; 2009) with capital flows, and column seven presents findings for the final model where actual capital flows is substituted for capital liberalization. As discussed in the text, substitution of flows for liberalization produces some support for Hays argument that consensus democracies should feel little pressure to lower corporate rates in the face of rising capital mobility. In column seven, we see that the results of basic model are not altered when one substitutes flows for liberalization of capital flows; the flows measure is marginally significant in the estimation of the final model of corporate rates.

Finally, recent research has used alternative measures of egalitarian orientations among the electorate, or potential constituency costs of neoliberal reforms (Plümper, Troeger, and Winner 2009). Drawing on data from the International Social Survey Program, we can compute the support for redistribution for the median voter from the mid-1980s to 2008 in a sub-sample of 14 nations. This measure, as a proxy for fairness norms that create constituency costs for neoliberal reforms, was substituted for the Kim-Fording estimate of the ideological position of

the median voter. Results for this new estimation are shown in the final column of the Appendix table. The impact of support for redistribution by the median voter is correctly signed (lower values indicate higher support of redistribution) but insignificant at conventional levels. (Similar results were obtained for additional alternative measures such as the change between pre- and post-fisc GINI indices of inequality and the level of pre-fisc inequality).

References Used in the Online Appendix

- Franzese, R. and Hays, J. (2007) 'Spatial econometric models of cross-sectional interdependence in political science panel and time-series-cross-section data', *Political Analysis* 15 (2): 140-164.
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- Haufler, A. and Wooton, I. (1999) 'Country size and tax competition for foreign direct investment', *Journal of Public Economics* 71 (1): 121-139.
- Hays, J. (2003) 'Globalization and capital taxation in consensus and majoritarian democracies', *World Politics* 56 (1): 79-113.
- Hays, J. (2009) *Globalization and the New Politics of Embedded Liberalism*, New York: Oxford University Press.
- Plümper, T., Troeger, V. and Winner, H. (2009) 'Why is there no race to the bottom in capital taxation?', *International Studies Quarterly* 53 (3): 761-86.

Online Appendix Table 1. Alternative Models and Estimators: Domestic Institutions and International Competition in Corporate Income Tax Rates, 1982-2008.

	Final Model	Final Model - No Fixed Effects	Final Model Instrumented Spatial Lag	Flat Tax Adoption in Esat. Europe	Final Model With Size Control	Hays Model With Capital Flows	Final Model With Capital Flows	Final Model Median Voter Redistribution
International Competition and Institutions								
US Statutory/Effective Corporate Tax Rate $t-2$	.2608** (.0482)	.2200** (.0446)	.2514** (.0533)	.2495** (.0468)	.2472** (.0489)	.3525** (.0567)	.3320** (.0573)	.2624** (.0525)
Δ US Statutory/Effective Corporate Tax Rate $t-1$	.4121** (.0887)	.3287** (.0913)	.4188** (.0921)	.4088** (.0832)	.4041** (.0891)	.4005** (.0981)	.4396** (.0948)	.4063** (.0879)
US Statutory/Effective Rate \times Coordination $t-2$	.1152** (.0442)	.1072** (.0332)	.1258** (.0447)	.1210** (.0449)	.1239** (.0432)	---	.1216** (.0464)	.1210** (.0443)
Δ US Statutory/Effective Rate \times Coordination $t-2$	-.3119** (.0909)	-.2957** (.0996)	-.3048** (.0898)	-.3162** (.0884)	-.3130** (.0884)	---	-.3363** (.0914)	-.3047** (.0925)
Competitors' Statutory Corporate Tax Rate $t-1$	---	---	.0545 (.0753)	---	---	---	---	---
Δ Competitors' Statutory Corporate Tax Rate t	---	---	.0254 (.1689)	---	---	---	---	---
Eastern Europe Flat Tax Adoption $t-2$	---	---	---	-.0189* (.0137)	---	---	---	---
Δ Eastern Europe Flat Tax Adoption $t-1$	---	---	---	.0108 (.0174)	---	---	---	---
Flat Tax Adoption \times East Europe Border $t-2$	---	---	---	-.0057 (.0188)	---	---	---	---
Δ Flat Tax Adoption \times East Europe Border $t-2$	---	---	---	.0007 (.0336)	---	---	---	---
Population Size $t-2$	---	---	---	---	-2.5459 (3.4461)	---	---	---

	Final Model	Final Model - No Fixed Effects	Final Model Instrumented Spatial Lag	Flat Tax Adoption in Esat. Europe	Final Model With Size Control	Hays Model With Capital Flows	Final Model With Capital Flows	Final Model Median Voter Redistribution
Δ Population Size t_{-1}	---	---	---	---	.0586 (.0402)	---	---	---
Capital Flows t_{-2}	---	---	---	---	---	-.0176** (.0074)	-.0102* (.0074)	---
Δ Capital Flows t_{-1}	---	---	---	---	---	-.0150 (.0209)	-.0103 (.0213)	---
Capital Flows $t_{-2} \times$ Consensus Demo t_{-2}	---	---	---	---	---	.0306** (.0172)	---	---
Δ Capital Flows $t_{-1} \times$ Consensus Demo t_{-2}	---	---	---	---	---	.0030 (.0466)	---	---
Median Voter Support for Redistribution t_{-2}	---	---	---	---	---	---	---	-1.4907 (1.6410)
Δ Median Voter Support for Redistribution t_{-1}	---	---	---	---	---	---	---	-1.0450 (1.8049)
International Openness								
Trade Openness t_{-2}	-.0884** (.0180)	-.0224** (.0065)	-.0887** (.0199)	-.0701** (.0198)	-.0827** (.0196)	-.0774** (.0201)	-.0882** (.0199)	-.0866** (.0176)
Δ Trade Openness t_{-1}	-.0493** (.0317)	-.0264 (.0312)	-.0487* (.0346)	-.0329 (.0327)	-.0482* (.0316)	-.0504* (.0366)	-.0621** (.0355)	-.0517** (.0311)
Liberalization of Capital Markets t_{-2}	-.0493** (.0186)	-.0138 (.0116)	-.0520* (.0187)	-.0514** (.0189)	-.0513** (.0189)	---	---	-.0456** (.0197)
Δ Liberalization of Capital Markets t_{-1}	-.0144 (.0291)	-.0052 (.0304)	-.0149 (.0300)	-.0171 (.0296)	-.0175 (.0296)	---	---	-.0138 (.0291)
Institutions and Politics								

	Final Model	Final Model - No Fixed Effects	Final Model Instrumented Spatial Lag	Flat Tax Adoption in Esat. Europe	Final Model With Size Control	Hays Model With Capital Flows	Final Model With Capital Flows	Final Model Median Voter Redistribution
Coordination $t-2$	-4.9352* (2.7929)	-4.8247** (1.5912)	-5.5704** (2.8202)	-5.6222** (2.8292)	-5.3718 (2.7487)	3.2204** (1.0890)	-4.4203 (3.0636)	-5.0521* (2.7572)
Δ Coordination $t-1$	-1.3828 (1.5784)	-1.5478 (1.5359)	-1.2217 (1.6152)	-1.6927 (1.5879)	-1.4576 (1.5779)	.8479 (1.7218)	-.6754 (1.6701)	-1.2110 (1.5748)
Consensus Demo $t-2$	.3751 (.5376)	.1249 (.2756)	.4402 (.5596)	.6322 (.5430)	.5017 (.5424)	-.0558 (.3683)	.0174 (.5575)	.4149 (.5880)
Δ Consensus Demo $t-1$	.8946 (.8075)	.9669 (.8086)	.9592 (.8072)	1.0226 (.8109)	.9624 (.8005)	2.1932 (2.2131)	.8725 (.8964)	1.0120 (.8141)
Institutional Veto Points $t-2$	2.4663** (1.1712)	.7033** (.2581)	2.6032** (1.2043)	2.5944** (1.1591)	2.4490** (1.1623)	2.1932** (2.2131)	-.2192 (1.9891)	2.3211** (1.1822)
Δ Institutional Veto Points $t-1$	2.5848* (1.8947)	1.9542 (1.8683)	2.7343* (1.9096)	2.6729* (1.8610)	2.2601* (1.8926)	2.1932* (2.2131)	2.1602 (2.4269)	2.2739* (1.9118)
Ideology -Median Voter $t-2$	.0238* (.0170)	.0338** (.0578)	.0238* (.0182)	.0219* (.0176)	.0228* (.0171)	.0389** (.0191)	.0201 (.0177)	---
Δ Ideology -Median Voter $t-2$	.0413 (.0374)	.0244 (.0381)	.0426 (.0382)	.0438 (.0377)	.0383 (.0376)	.0467 (.0404)	.0404 (.0387)	---
Right Government $t-4$ to $t-2$	.0031 (.0039)	.0006 (.0032)	.0028 (.0038)	.0027 (.0039)	.0025 (.0039)	.0013 (.0041)	.0031 (.0040)	.0036 (.0040)
Δ Right Government $t-4$ to $t-2$	.0112 (.0094)	.0094 (.0096)	.0089 (.0095)	.0113 (.0095)	.0100 (.0094)	.0096 (.0097)	.0091 (.0097)	.0104 (.0097)
General Model								
Structural Unemployment $t-2$	-.0118 (.0194)	.0095 (.0085)	-.0228 (.0206)	-.0175 (.0201)	-.0107 (.0197)	-.0140 (.0223)	-.0117 (.0218)	-.0187 (.0200)
Δ Structural Unemployment $t-1$	-.0420 (.0331)	-.0298 (.0334)	-.0464* (.0338)	-.0429 (.0330)	-.0340 (.0337)	-.0439 (.0361)	-.0456* (.0353)	-.0477* (.0323)

	Final Model	Final Model - No Fixed Effects	Final Model Instrumented Spatial Lag	Flat Tax Adoption in Esat. Europe	Final Model With Size Control	Hays Model With Capital Flows	Final Model With Capital Flows	Final Model Median Voter Redistribution
Public Sector Debt _{t-2}	.0264** (.0119)	.0201** (.0050)	.0300** (.0126)	.0292** (.0120)	.0275** (.0119)	.0258** (.0113)	.0197** (.0120)	.0289** (.0117)
Δ Public Sector Debt _{t-1}	.0489 (.404)	.0682** (.0337)	.0395 (.0409)	.0422 (.0404)	.0427 (.0402)	.0542 (.0442)	.0413 (.0427)	.0375 (.0396)
Percent Change Real Profits _{t-2}	.0705 (.0565)	.0591 (.0572)	.0777 (.0602)	.0553 (.0575)	.0661 (.0506)	.0685 (.0592)	.0806* (.0587)	.0697 (.0566)
Δ Percent Change Real Profits _{t-1}	.0602* (.0403)	.0486 (.0405)	.0674* (.0419)	.0569* (.0410)	.0586* (.0402)	.0595* (.0425)	.0668* (.0414)	.0587* (.0401)
Domestic Investment _{t-2}	.0130 (.0416)	.0274 (.0421)	.0123 (.0420)	.0204 (.0417)	.0119 (.0416)	.0154 (.0459)	.0127 (.0436)	.0178 (.0414)
Δ Domestic Investment _{t-1}	-.0188 (.0279)	-.0190 (.0286)	-.0153 (.0284)	-.0172 (.0281)	-.0197 (.0377)	-.0205 (.0310)	-.0245 (.0290)	-.0187 (.0276)
Growth Per Capita Real GDP _{t-2}	.1271 (.1427)	.0113 (.1398)	.1549 (.1479)	.1324 (.1445)	.1287 (.1431)	.1402 (.1457)	.1104 (.1527)	.1125 (.1428)
Δ Growth Per Capita Real GDP _{t-1} (× 100)	-.0009 (.0033)	-.0006 (.0036)	-.0008 (.0035)	-.0011 (.0034)	-.0008 (.0034)	-.0068 (.0036)	-.0004 (.0036)	-.0015 (.0032)
Tax Rate _{t-1}	-.2434** (.0324)	-.1549** (.0247)	-.2619** (.0349)	-.2508** (.0355)	-.2458** (.0334)	-.2488** (.0379)	-.2439** (.0362)	-.2338 (.0322)
Fixed Effects	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Constant	6.1224	-5.0894	5.3768	6.5557	34.6799	-6.392	-2.8856	10.2654
Observations	469	469	459	469	469	437	437	469
R ²	.2566	.1960	.2655	.2620	.2587	.2237	.2571	.2540

Statutory corporate tax models are estimated with 1982-2008 data (effective corporate tax rate with 1982-2005 data) by OLS for 18 or 17 nations (full sample with or without U.S.) The table reports OLS unstandardized regression coefficients and panel correct standard errors (Beck and Katz 1996). * indicates significance at the .10 level or below. ** indicates significance at the .05 level or below.