Appendix for "Bureaucratic Quality and the Gap between Implementation Burden and Administrative Capacities"

Supplemental Online material

Contents

A Coding manual (excerpt)

A.1 Basic Coding Procedure and Main Concepts

At the most basic level, the coders have to identify single events of policy change in the collected legal documents and, for each single event, assess the direction of change, i.e., whether the event of policy change represents the introduction or abolishment of a given target-instrument combination.

To be taken into consideration, a policy change must meet the following requirements in form and content: Formally, a relevant policy change is any measure or provision in the collected legislation (and where necessary respective administrative circulars specifying these rules) that 1) was published during the observation period, which starts on January 1, 1976, and ends on December 31, 2018, and 2) was adopted at the national level.

Contentwise, measures by sub-national jurisdictions such as regional or local bodies are excluded, even if the respective sub-national bodies are state-like entities with far-reaching competencies as in federal states.

A.2 Coding Categories

The method used to assess and code policy change is intended to be universally applicable, i.e., over a wide range of countries, irrespective of differing legal and administrative traditions. Thus, the coding rules comprise two invariant general categories. These are policy targets (*what is addressed?*) and policy instruments (*how is it addressed?*).

By means of these two categories, we seek to measure developments over time in a nuanced manner. To assess whether a change represents an introduction or abolishment of a policy measure, it is critical to evaluate the changes relative to the previous policy targets and instruments at the time. These relative changes need to be coded. Recalling the observation period (January 1, 1976, to December 31, 2018), this stated focus on change has one important implication: Although the relevant information for deciding whether a legal act falls into the observation period is the date of publication, it might be the case that coders need to consult legislation originating from some year before 1976 to reconstruct the occurrence and the direction of change. For instance, if a law adopted in 2008 changes a policy measure enacted by a law in 1973, this 1973 legislation must be considered in order to make a statement about the direction and nature of the policy change in 2008.

A.3 Coding Category 1: Policy Targets

The first and most general coding category is policy targets. For analytical reasons, we use a very narrow conception of policy targets. By policy targets, we mean a very specific activity within a subarea of a policy field guided by the question: who or what is addressed? More specifically, a policy target is subject to state activities in order to achieve a political objective within a specific area. The list below contains the policy targets considered. One single target is coded once per legislative act. Any instrument concerning this specific target will be attributed to the one single target. If a policy target from the list is introduced for the first time, i.e., subject to governmental action for the first time, this event must be coded as *policy introduction*. If, by contrast, a policy target from the list is abolished, i.e., is not anymore subject to governmental action, this event must be coded as policy termination. The termination of a target entails the termination of all attached instruments, which are coded separately. The same is true when a target is addressed for the first time.

Clean Air Policy
1. Air quality standards for nitrogen oxides (NOx)
2. Air quality standards for Sulphur dioxide (SO2)
3. Air quality standard for carbon monoxide (CO)
4. Air quality standard for particulate matter
5. Air quality standard for ozone (O3)
6. Air quality standard for lead
7. Nitrogen oxide (NOx) emissions from large combustion plants using coal
8. Nitrogen oxide (NOx) emissions from passenger vehicles using unleaded gasoline
9. Nitrogen oxide (NOx) emissions from heavy duty vehicles using diesel
10. Sulphur dioxide (SO2) emissions from large combustion plants using coal
11. Sulphur dioxide (SO2) emissions from passenger vehicles using unleaded gasoline
12. Sulphur dioxide (SO2) emissions from heavy duty vehicles using diesel
13. Carbon dioxide (CO2) emissions from large combustion plants using coal
14. Carbon dioxide (CO2) emissions from passenger vehicles using unleaded gasoline
15. Carbon monoxide (CO) emissions from large combustion using coal
16. Carbon monoxide (CO) emissions from passenger vehicles using unleaded gasoline
17. Particulate matter emissions from large combustion plants using coal
18. Arsenic emissions from stationary sources
19. Maximum permissible limit for the lead content of gasoline
20. Maximum permissible limit for the sulphur content of diesel
21. Carbon dioxide (CO2) emissions from aviation activities
22. Maximum permissible limit for the sulphur content of petrol (gasoline, benzine, fuel)

Nature Conservation Policy
1. Native forests
2. Nature protection areas and reserves
3. Import and export of endangered species
4. Import and export of endangered plants

Unemployment benefits
1. Basic unemployment benefits for singles
2. Basic unemployment benefit bonus for persons with spouse
3. Basic unemployment benefit bonus for persons with children
4. Special unemployment benefits: bad weather compensation; seasonal compensation
5. Special unemployment benefits: emergency aid
6. Special unemployment benefits: holiday payment
7. Special unemployment benefits: partial compensation, wage-complementing policy
8. Secondary unemployment benefits for singles (including tax-based benefits; only to be considered if the more special forms of special unemployment benefits do not apply; specification of the type of secondary unemployment benefit in the remarks column)
9. Secondary unemployment benefit bonus for persons with spouse
10. Secondary unemployment benefit bonus for persons with children
11. Monetary or non-monetary support for vocational education and training
12. Retention period (in case of quitting by the employee), i.e., a period of quarantine without benefits
13. Retention period (dismissal by the employer), i.e., a period of quarantine without benefits
14. Subsidized employment / employment subsidies (e.g., policies that introduce jobs which will to a large share be paid for by the unemployment benefits administration and are destined to serve the public good, such as additional jobs for relief agencies for elders, or jobs related to the maintenance of public parks)
15. Reimbursement of expenses related to active job search

Water Protection Policy
1. Lead in continental surfaces water (i.e., waters that flow or which are stored on the surface, and include natural water channels like rivers, surface runoff, streams, lakes and others)
2. Copper in continental surfaces water
3. Nitrate (NO3 –) in continental surfaces water
4. Phosphates in continental surfaces water
5. Zinc in continental surfaces water
6. Oils in continental surfaces water
7. Pesticides (fungicides, herbicides, insecticides, exempt DDT) in continental surfaces water
8. DDT (Dichloro-Diphenyl-Trichloroethane) in continental surfaces water
9. Phenols (as total C) in continental surfaces water
10. BOD (Biochemical Oxygen Demand) of continental surfaces water
11. Lead from industrial discharges into continental surfaces water
12. Copper from industrial discharges into continental surfaces water
13. Nitrate (NO3 –) from industrial discharges into continental surfaces water
14. Phosphates from industrial discharges into continental surfaces water
15. Chloride (Cl –) from industrial discharges into continental surfaces water
16. Sulphates from industrial discharges into continental surfaces water
17. Iron from industrial discharges into continental surfaces water
18. Zinc from industrial discharges into continental surfaces water
19. Oils and greases from industrial discharges into continental surfaces water
20. Pesticides and herbicides from industrial discharges into continental surfaces water
21. Phenols (as total C) from industrial discharges into continental surfaces water
22. Coliform bacteria from industrial discharges into continental surfaces water
23. BOD (Biochemical Oxygen Demand) from industrial discharges into continental surfaces water
24. COD (Chemical Oxygen Demand) from industrial discharges into continental surfaces water

Child benefits
1. Basic child benefits (children)
2. Special child benefits, e.g., special subsidy for juveniles having not reached majority (often 16-18 years) / youth benefit or indirect child benefits like means-tested family assistance (juveniles)
3. Payments for giving birth to children (birth)

Old-age Pensions
1. Basic People's Pension (standard-employee pension) for singles ("first layer pension" – basic minimum income for old-aged people, typically a pension of the same amount for all, regardless of contributions)
2. Basic People's Pension (standard-employee pension) for married couples
3. Basic People's Pension (standard-employee pension) for unmarried couples
4. Additional People's Pension for singles ("second layer pension" – pensions originating from another source than the basic people's pension, typically dependent on contributions/income)
5. Additional People's Pension for married couples
6. Additional People's Pension for unmarried couples
7. Special Pensions for singles (e.g., pensions paid to old-aged people who retire earlier than most of the working population)
8. Special Pensions for married couples
9. Special Pensions for unmarried couples

Table A1: Policy targets.

A.4 Coding Category 2: Policy instruments

We define a policy instrument as a tool or means adopted to achieve the underlying political objective of the selected environmental policy target. A policy instrument thus describes the type of governmental action adopted for a given policy target. A policy instrument is intended to have a regulating and/or guiding effect on people's actions. The tables below contain all potential policy instruments for environmental policy. For each policy targets, if addressed, there is at least one policy instrument defined as a tool to achieve the underlying political objective. Yet, any policy target may be addressed by means of various policy instruments. For each addressed policy target, the coders are asked to identify all instruments. Please note that a given policy instrument belongs to one type/group only.

Instrument	Description	Example
Obligatory standard	A legally enforceable numerical standard, typically involving a measurement unit, e.g. mg/l	Limit value for lead emissions in surface water, e.g. 50 mg/l
Prohibition / ban	Total or partial prohibition/ban on certain emissions, activities, products etc.	Ban on importation of products containing flurochlorocarbons; ban on exportation of endangered species
Technological prescription	A measure prescribing the use of a specific technique or technology	Best available technology or 'best practicable means'
Tax / levy	A tax or levy for a certain polluting product or activity	Levy on the emission of a certain pollutant into the surface waters, e.g., copper
Subsidy / tax reduction	A measure by which the state grants a financial advantage to a certain product or activity	The use of less air polluting cars
Liability scheme	A measure that allocates the costs of environmental damage to those who have caused the damage	"Polluter pays principle"
Planning instrument	A measure defining areas or times deserving protection	Zoning of activities around airports or sensitive ecosystems / Assignment of the status of a nature reserve to an area
Public investment	Specific public investment	Public investment for the research and development of new energy technologies; Investments in infrastructure
Data collection / monitoring programes	Specific programme for collecting data	Monitoring of urban air quality in the context of an early warning system for photochemical smog; monitoring of the population of certain endangered species
Information-based instrument	Voluntary agreements or commitments between the state and private actors or by private actors alone	Pollutant release and transfer register
Voluntary instrument	Voluntary agreements or commitments between the state and private actors or by private actors alone	Greenhouse reduction targets, e.g., a reduction of emissions by 10%
Permits	Permit to pollute the environment or the produce / import / export / sell environmentally harmful products	Mining companies to obtain according permits to mine in certain areas, e.g., native forests
Other	Any instrument that cannot be assigned to the given categories	(...)

Table A2: Environmental Policy. The table is exhaustive, containing the most common environmental policy instruments.

Instrument	Description	Example
Universal benefits / Allowance	A payment of a certain amount of money by the state, irrespective of means	Unemployment benefit, child benefit; orphan's benefit
Means-tested benefits	The entitlement to these benefits is usually not affected by whether a person has paid contributions or fees to an insurance scheme. Means-tested benefits are affected by the claimant's capital and income and involve a calculation (means-test). Based on that calculation it is determined whether a person is eligible for this benefit at all.	Income subsidy for persons with income that is insufficient for living above the poverty level
Contribution / fee	Payment made by citizens to a state agency to receive certain benefits	Fee for unemployment insurance
Tax exemption / subsidy	A reduction of tax payments to provide income tax savings	Child tax exemption
Bonus / grant	one-off grant / payment of money, irrespective of means	Bonus for giving birth to a child; reimbursement of expenses related to job search
Retention	Non-payment of a certain allowance	Retention period for unemployment benefit
Other	Any instrument that cannot be assigned to the given categories	(...)

Table A3: Social Policy. The table is exhaustive, containing the most common social policy instruments.
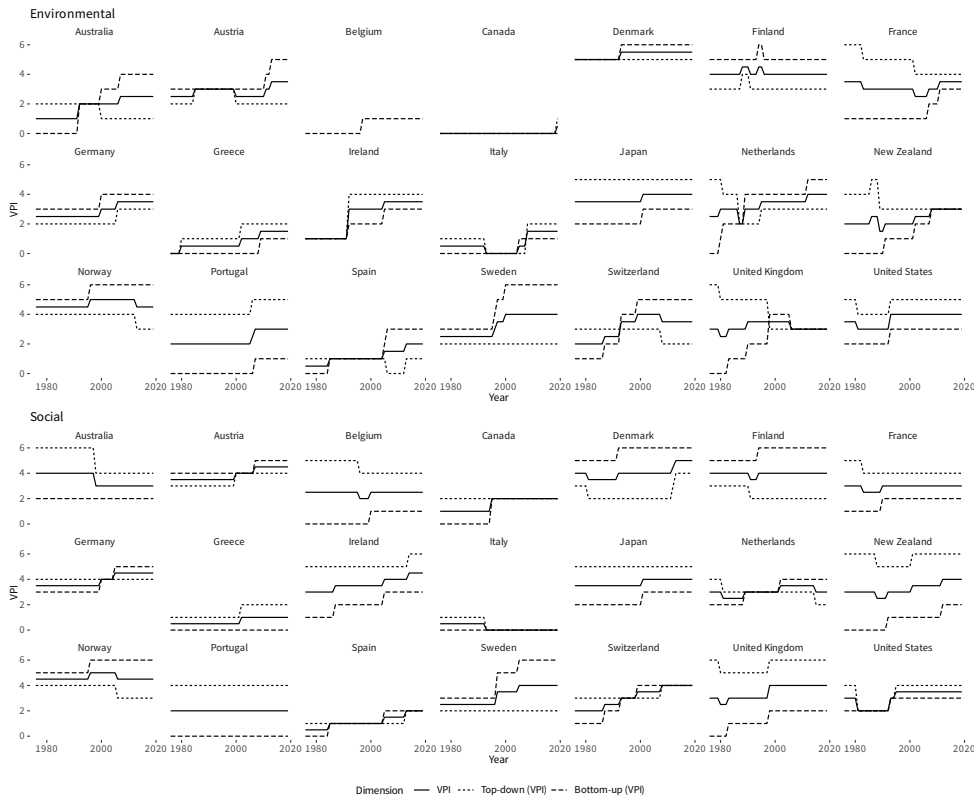
B Vertical Policy-Process Integration

Figure A1: Temporal evolution of vertical policy-process integration and its constitutive dimensions. Upper figure is environmental sector, and lower is social sector.

C Outcome variable: Gap (Implementation burden / Implementation capacity)

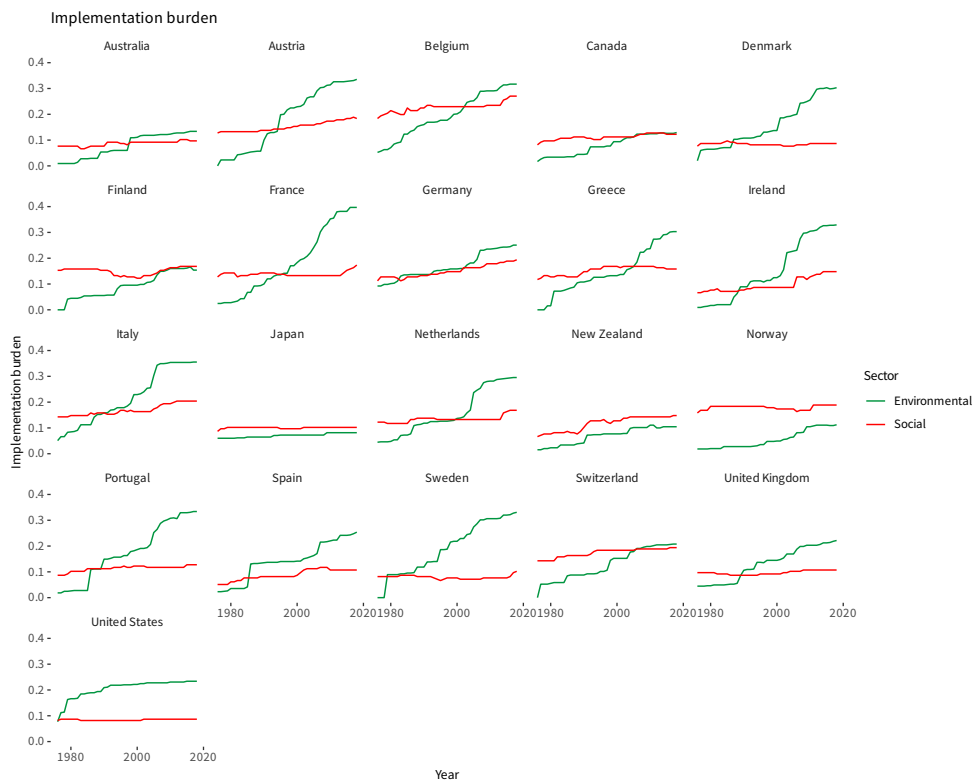## C.1 Implementation burden

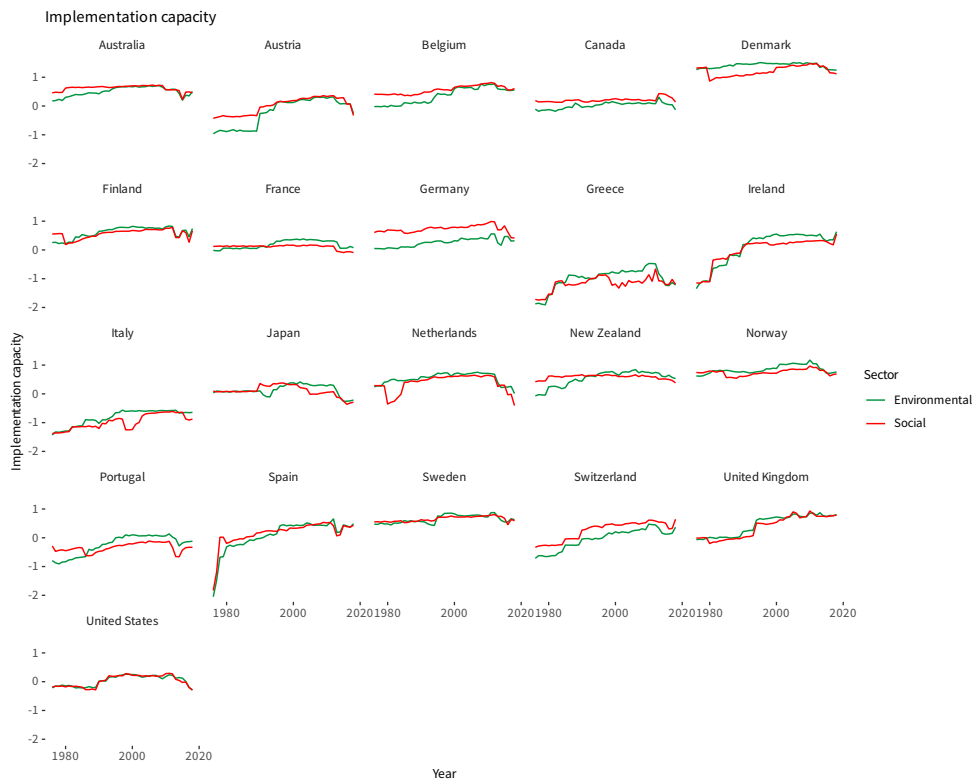Figure A2: Temporal evolution of implementation burden, by sector.

Figure A3: Temporal evolution of implementation capacity, by sector. Implementation capacity is in its original scale, standardized at mean zero and standard deviation 1.

C.2 Implementation capacity

The scores of implementation capacity have been generated with a measurement model. The relative importances of each of the constitutive variables are shown in Table A4, along with the correlations between them and the generated scores.

| Component | Discrimination (point estimate) | | | |
	Environmental	Social	cor(Env)	cor(Soc)
Administrative spending on active labour policy per population		0.0103		0.85
Environmental institutionalization	0.0132		0.573	
Information capacity	0.0711	0.0402	0.352	0.277
Professional bureaucratic remuneration	0.124	0.144	0.141	0.155
Professional criteria for appointment decisions in the state administration	0.717	0.685	0.801	0.731
Rigorous and impartial public administration	0.629	0.91	0.917	0.976
State authority over territory	0.317	0.262	0.435	0.424
Statistical Capacity score	0.43	0.336	-0.072	-0.0867
Tax revenue (% of GDP)	0.827	0.924	0.481	0.358
Taxes on income, profits and capital gains (% of revenue)	0.392	0.402	0.0808	0.0436
Taxes on international trade (% of revenue)	-0.0637	-0.068	-0.518	-0.433
Weberianess	-0.461	-0.406	0.0123	0.0124

Table A4: Discrimination parameters for a measurement model of implementation capacity, and the resulting correlations with the generated scores.

High absolute values account for variables that contain a lot of information for the latent score on implementation capacity. Positive values account for variables that are oriented in the same direction as the latent score, where negative values imply that positive manifestations of the respective variable are aligned with negative values in the resulting latent score. Variables at zero provide no information.

The congeneric reliability (ρ_C, also known as ω reliability) is 0.78 for the environmental sector and 0.79 for the social sector.

C.3 Gap: Implementation burden / Implementation capacity

The burden capacity gap is obtained by the following procedure:

- Implementation burden: standardize and center at 10. Centering at 10 allows us to discard problems associated to signs between numerator and denominator, by having all in the positive range.
- Implementation capacity: standardize and center at 10.
- Divide the standardized and centered quantities (PS/IC).
- Subtract one, so that it is centered at zero, and the substantial interpretation of a zero is where the numerator and denominator are at their averages, or in equilibrium.
- Multiply by 10, so that the range resembles that of a standardized normal, with most of the cases between -2 and +2.

Figure A5 shows the correlation matrix between the main outcome variable (Burden capacity gap), its constitutive parts (Implementation burden and Implementation capacity) the main explanatory variable (Vertical Policy-Process Integration), as well as the control variables. Table A5 shows the descriptive statistics of the variables involved in the analysis, for the reference model.

Burden capacity gap: Implementation burden / Implementation capacity
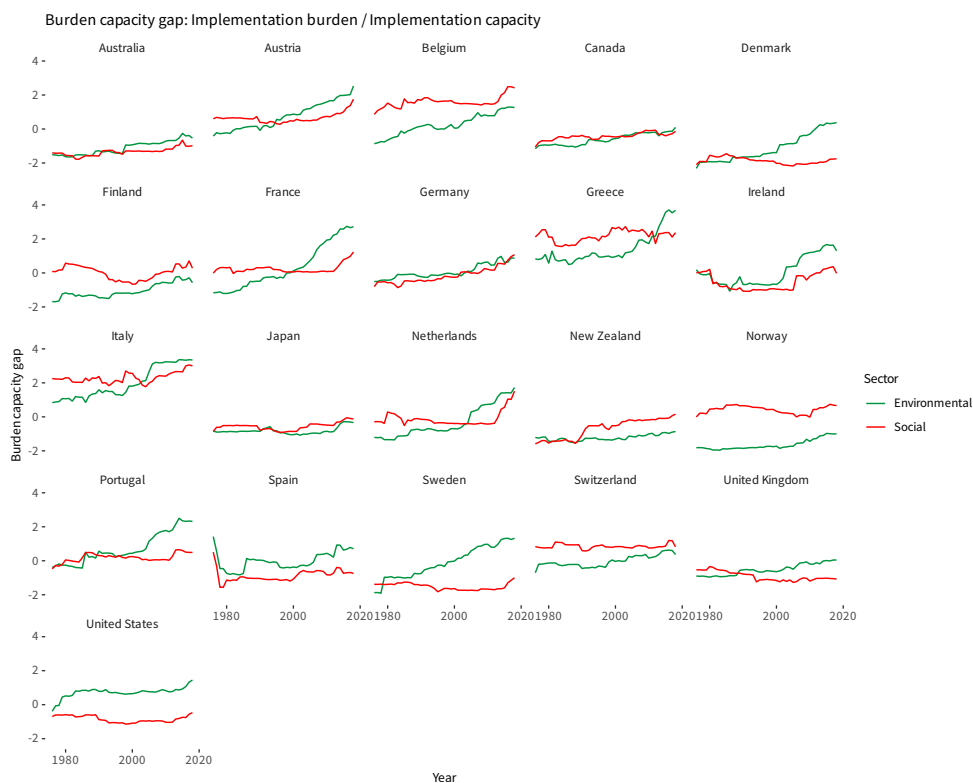
Figure A4: Temporal evolution of the burden capacity gap between implementation burden over implementation capacity, by sector. Implementation capacity has been centered from its original scale. Its minimum value is now one.

Figure A5: Correlation matrices for the relevant variables. By sector.
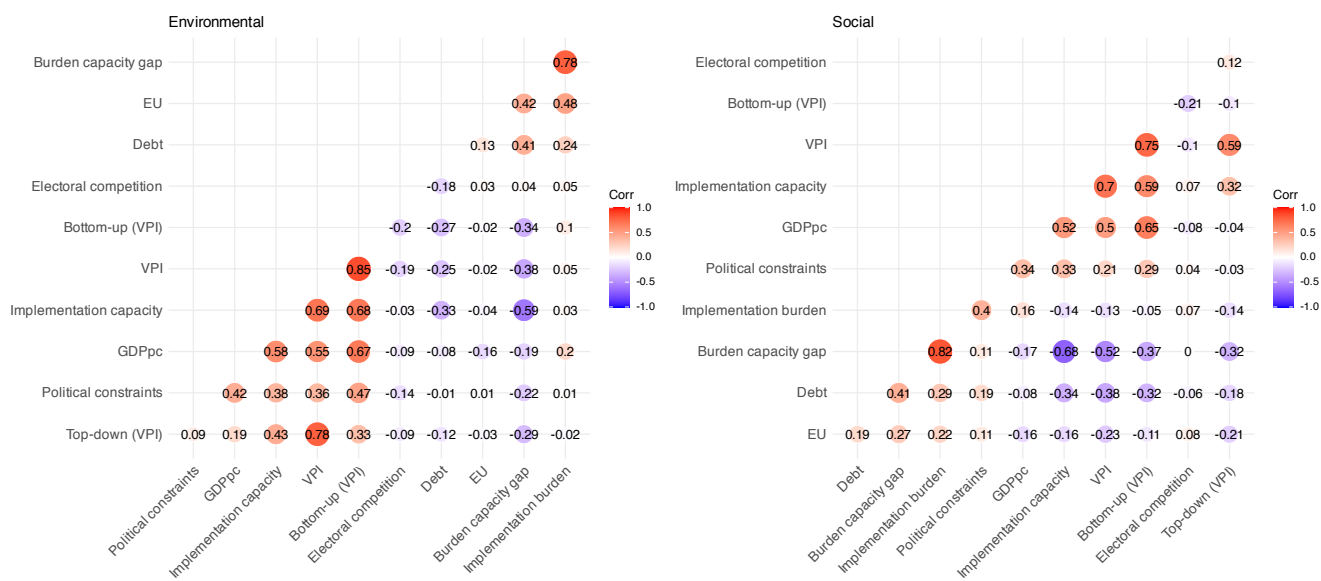
Variable	Min	Mean	Median	Max	SD
Debt	2.290	61.4502	55.2550	249.1100	34.7847
EU	0.000	0.5759	1.0000	1.0000	0.4943
Electoral competition	0.000	0.2393	0.1864	0.7538	0.2172
GDPpc (in 1,000s)	10.766	38.5091	36.2863	92.1195	14.9526
Political constraints	0.000	0.4730	0.4691	0.7181	0.0938
VPI	0.000	2.7975	3.0000	5.5000	1.3191
Environmental					
Bottom-up (VPI)	0.000	2.3787	2.0000	6.0000	1.9468
Burden capacity gap	-2.317	-0.1081	-0.2608	3.7072	1.1209
Implementation burden	0.000	0.1421	0.1246	0.3969	0.0930
Implementation capacity	-2.050	0.2083	0.2596	1.5095	0.5979
Top-down (VPI)	0.000	2.9174	3.0000	6.0000	1.5924
Social					
Bottom-up (VPI)	0.000	2.3787	2.0000	6.0000	1.9341
Burden capacity gap	-2.171	-0.0682	-0.2339	3.0530	1.1392
Implementation burden	0.051	0.1278	0.1276	0.2704	0.0417
Implementation capacity	-1.831	0.2284	0.3249	1.4766	0.5891
Top-down (VPI)	0.000	3.4109	4.0000	6.0000	1.5401

Table A5: Descriptive statistics.

D Results

D.1 Main results in tabular form

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.56	(0.117)	[0.33 : 0.79]
Debt (log)	0.53	(0.062)	[0.42 : 0.66]
EU	0.47	(0.068)	[0.34 : 0.61]
VPI	-0.41	(0.065)	[-0.54 : -0.29]
Political constraints	-0.38	(0.083)	[-0.54 : -0.22]
GDPpc	-0.22	(0.08)	[-0.37 : -0.064]
Corporatism	0.07	(0.057)	[-0.037 : 0.18]
Electoral competition	-0.07	(0.054)	[-0.18 : 0.033]
Contiguity dependency (BCG)	0.01	(0.087)	[-0.15 : 0.19]
** Goodness of fit (R2)	0.59	(0.00146)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.21	(0.081)	[-1.4 : -1]
Trade dependency (BCG)	0.54	(0.093)	[0.36 : 0.72]
GDPpc	0.45	(0.09)	[0.28 : 0.63]
Corporatism	0.45	(0.064)	[0.32 : 0.57]
Debt (log)	0.38	(0.067)	[0.25 : 0.51]
Electoral competition	-0.24	(0.051)	[-0.34 : -0.14]
Political constraints	0.19	(0.087)	[0.024 : 0.36]
EU	-0.18	(0.082)	[-0.33 : -0.012]
Contiguity dependency (BCG)	-0.02	(0.083)	[-0.18 : 0.15]
** Goodness of fit (R2)	0.56	(0.00175)	[0.55 : 0.56]

Table A6: Model parameters. Reference model. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.58	(0.116)	[0.35 : 0.81]
Debt (log)	0.51	(0.063)	[0.39 : 0.64]
EU	0.47	(0.067)	[0.34 : 0.61]
Political constraints	-0.40	(0.085)	[-0.57 : -0.24]
Bottom-up (VPI)	-0.33	(0.095)	[-0.52 : -0.14]
Top-down (VPI)	-0.30	(0.078)	[-0.45 : -0.15]
GDPpc	-0.24	(0.084)	[-0.41 : -0.077]
Electoral competition	-0.11	(0.048)	[-0.2 : -0.012]
Corporatism	0.07	(0.062)	[-0.051 : 0.19]
Contiguity dependency (BCG)	0.01	(0.088)	[-0.15 : 0.19]
** Goodness of fit (R2)	0.59	(0.0016)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
Bottom-up (VPI)	-1.51	(0.091)	[-1.7 : -1.3]
GDPpc	0.74	(0.088)	[0.56 : 0.91]
Corporatism	0.70	(0.071)	[0.56 : 0.84]
Top-down (VPI)	-0.56	(0.086)	[-0.74 : -0.4]
Trade dependency (BCG)	0.47	(0.091)	[0.29 : 0.65]
Debt (log)	0.33	(0.065)	[0.21 : 0.46]
Electoral competition	-0.27	(0.049)	[-0.37 : -0.17]
Political constraints	0.17	(0.086)	[-4.4e-05 : 0.33]
EU	-0.16	(0.08)	[-0.31 : -2e-04]
Contiguity dependency (BCG)	-0.02	(0.078)	[-0.18 : 0.13]
** Goodness of fit (R2)	0.57	(0.00186)	[0.56 : 0.57]

Table A7: Model parameters. VPI in 2 dimensions. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Debt (log)	0.52	(0.06)	[0.39 : 0.63]
EU	0.46	(0.069)	[0.33 : 0.6]
Trade dependency (BCG)	0.45	(0.109)	[0.23 : 0.67]
Political constraints	-0.44	(0.079)	[-0.59 : -0.28]
VPI	-0.35	(0.059)	[-0.46 : -0.23]
GDPpc	-0.19	(0.075)	[-0.34 : -0.048]
Contiguity dependency (BCG)	0.13	(0.081)	[-0.028 : 0.28]
Corporatism	0.05	(0.056)	[-0.061 : 0.16]
Electoral competition	0.03	(0.049)	[-0.063 : 0.13]
** Goodness of fit (R2)	0.58	(0.00147)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.18	(0.079)	[-1.3 : -1]
Trade dependency (BCG)	0.60	(0.095)	[0.41 : 0.78]
GDPpc	0.46	(0.082)	[0.3 : 0.62]
Corporatism	0.45	(0.064)	[0.32 : 0.57]
Debt (log)	0.39	(0.067)	[0.26 : 0.52]
EU	-0.19	(0.082)	[-0.35 : -0.033]
Electoral competition	-0.19	(0.051)	[-0.29 : -0.095]
Political constraints	0.16	(0.088)	[-0.011 : 0.33]
Contiguity dependency (BCG)	-0.09	(0.084)	[-0.25 : 0.07]
** Goodness of fit (R2)	0.55	(0.0018)	[0.55 : 0.55]

Table A8: Model parameters. Continuous learning (instruments). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Debt (log)	0.50	(0.06)	[0.38 : 0.62]
EU	0.49	(0.069)	[0.35 : 0.63]
Political constraints	-0.43	(0.086)	[-0.6 : -0.27]
Contiguity dependency (BCG)	0.36	(0.077)	[0.21 : 0.51]
VPI	-0.34	(0.062)	[-0.46 : -0.21]
Trade dependency (BCG)	0.23	(0.106)	[0.021 : 0.44]
Electoral competition	0.14	(0.052)	[0.036 : 0.24]
GDPpc	-0.09	(0.073)	[-0.24 : 0.047]
Corporatism	0.04	(0.057)	[-0.077 : 0.15]
** Goodness of fit (R2)	0.57	(0.00183)	[0.56 : 0.57]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.09	(0.08)	[-1.2 : -0.93]
Trade dependency (BCG)	0.61	(0.09)	[0.44 : 0.79]
GDPpc	0.51	(0.075)	[0.36 : 0.66]
Debt (log)	0.37	(0.066)	[0.24 : 0.5]
Corporatism	0.29	(0.062)	[0.16 : 0.41]
Electoral competition	-0.12	(0.053)	[-0.23 : -0.015]
EU	-0.10	(0.08)	[-0.26 : 0.049]
Contiguity dependency (BCG)	-0.07	(0.077)	[-0.21 : 0.086]
Political constraints	0.01	(0.087)	[-0.16 : 0.18]
** Goodness of fit (R2)	0.53	(0.00215)	[0.53 : 0.54]

Table A9: Model parameters. Steep learning (instruments). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Debt (log)	0.55	(0.066)	[0.42 : 0.68]
Trade dependency (BCG)	0.53	(0.119)	[0.3 : 0.77]
EU	0.48	(0.069)	[0.34 : 0.61]
VPI	-0.40	(0.066)	[-0.53 : -0.27]
Political constraints	-0.37	(0.085)	[-0.53 : -0.2]
GDPpc	-0.20	(0.08)	[-0.36 : -0.042]
Corporatism	0.08	(0.058)	[-0.038 : 0.19]
Contiguity dependency (BCG)	0.04	(0.086)	[-0.13 : 0.21]
Electoral competition	-0.03	(0.083)	[-0.15 : 0.15]
** Goodness of fit (R2)	0.59	(0.0015)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.20	(0.08)	[-1.4 : -1]
Trade dependency (BCG)	0.59	(0.095)	[0.4 : 0.77]
GDPpc	0.53	(0.086)	[0.36 : 0.7]
Corporatism	0.41	(0.064)	[0.29 : 0.53]
Debt (log)	0.37	(0.066)	[0.24 : 0.5]
Electoral competition	-0.20	(0.064)	[-0.32 : -0.069]
EU	-0.18	(0.085)	[-0.35 : -0.02]
Political constraints	0.15	(0.088)	[-0.017 : 0.32]
Contiguity dependency (BCG)	-0.05	(0.084)	[-0.21 : 0.12]
** Goodness of fit (R2)	0.55	(0.00243)	[0.54 : 0.55]

Table A10: Model parameters. Capped learning (instruments). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

D.2 Variances
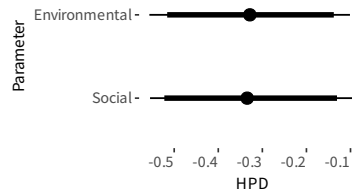
Figure A6: Parameters (λ) accounting for the effects of political constraints on the variance of the burden capacity gap (heteroskedasticity). Model parameters in Table A6.

D.3 Auto-regressive components
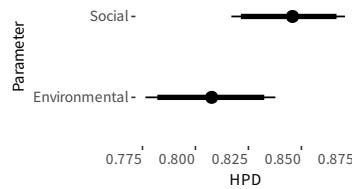
Figure A7: Auto-regressive (AR1) parameters (ρ_s). Model parameters in Table A6.

D.4 Time

Figure A8: Varying intercepts by decade (α_s). Model parameters in Table A6.

E Robustness and sensitivity

E.1 Different lag periods

Figure A9: Main effects comparing smoothed lags at 3 (reference model), 5 and 7 years (θ_s). Model parameters in Tables A6, A11 and A12.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.57	(0.122)	[0.33 : 0.8]
Debt (log)	0.53	(0.062)	[0.41 : 0.65]
EU	0.47	(0.07)	[0.33 : 0.6]
Political constraints	-0.40	(0.09)	[-0.58 : -0.23]
VPI	-0.39	(0.072)	[-0.53 : -0.26]
GDPpc	-0.21	(0.083)	[-0.37 : -0.05]
Corporatism	0.07	(0.058)	[-0.046 : 0.18]
Electoral competition	-0.05	(0.057)	[-0.16 : 0.063]
Contiguity dependency (BCG)	0.02	(0.085)	[-0.15 : 0.19]
** Goodness of fit (R2)	0.59	(0.00153)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.21	(0.079)	[-1.4 : -1]
Trade dependency (BCG)	0.55	(0.094)	[0.37 : 0.74]
GDPpc	0.47	(0.087)	[0.29 : 0.64]
Corporatism	0.44	(0.064)	[0.32 : 0.57]
Debt (log)	0.38	(0.067)	[0.25 : 0.51]
Electoral competition	-0.23	(0.053)	[-0.33 : -0.12]
EU	-0.19	(0.084)	[-0.36 : -0.025]
Political constraints	0.19	(0.086)	[0.023 : 0.36]
Contiguity dependency (BCG)	-0.02	(0.085)	[-0.18 : 0.14]
** Goodness of fit (R2)	0.55	(0.0018)	[0.55 : 0.56]

Table A11: Model parameters. Lag 5 years. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.
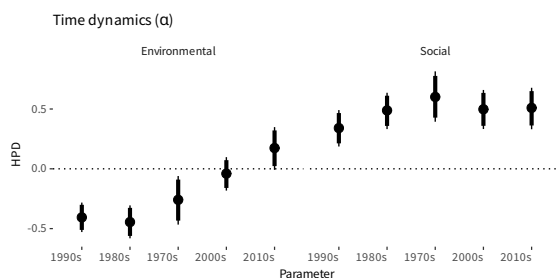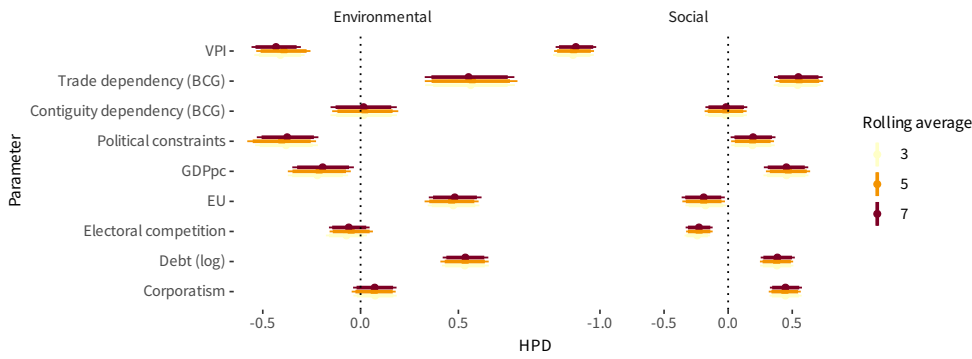
Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.55	(0.118)	[0.33 : 0.79]
Debt (log)	0.54	(0.059)	[0.42 : 0.65]
EU	0.48	(0.068)	[0.35 : 0.62]
VPI	-0.43	(0.064)	[-0.56 : -0.31]
Political constraints	-0.38	(0.08)	[-0.53 : -0.22]
GDPpc	-0.19	(0.08)	[-0.35 : -0.034]
Corporatism	0.07	(0.057)	[-0.038 : 0.18]
Electoral competition	-0.06	(0.053)	[-0.16 : 0.046]
Contiguity dependency (BCG)	0.02	(0.086)	[-0.15 : 0.19]
** Goodness of fit (R2)	0.59	(0.0014)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.19	(0.081)	[-1.3 : -1]
Trade dependency (BCG)	0.55	(0.096)	[0.36 : 0.74]
GDPpc	0.45	(0.089)	[0.28 : 0.62]
Corporatism	0.45	(0.065)	[0.33 : 0.58]
Debt (log)	0.38	(0.067)	[0.25 : 0.52]
Electoral competition	-0.23	(0.053)	[-0.33 : -0.12]
Political constraints	0.19	(0.089)	[0.019 : 0.37]
EU	-0.19	(0.085)	[-0.36 : -0.026]
Contiguity dependency (BCG)	-0.02	(0.084)	[-0.18 : 0.15]
** Goodness of fit (R2)	0.55	(0.00177)	[0.55 : 0.55]

Table A12: Model parameters. Lag 7 years. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.
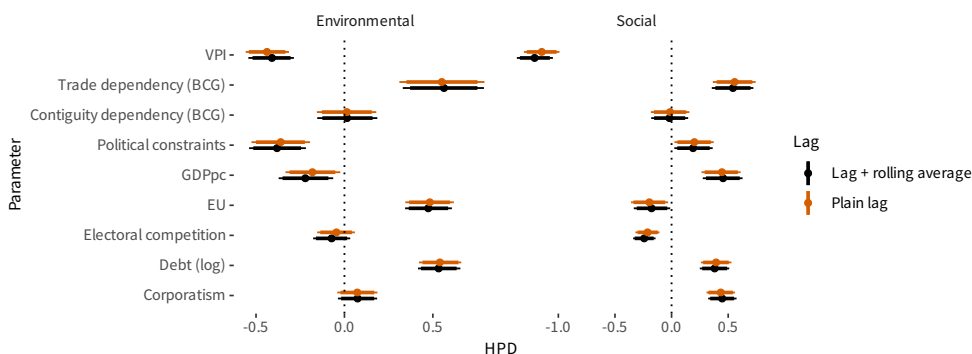
E.2 Lag, not smoothed

Figure A10: Main effects comparing smoothed lags at 3 (reference model) with plain lag at 3 years (θ_s). Model parameters in Tables A6 and A13.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.55	(0.123)	[0.31 : 0.79]
Debt (log)	0.54	(0.061)	[0.42 : 0.66]
EU	0.48	(0.07)	[0.34 : 0.62]
VPI	-0.44	(0.063)	[-0.56 : -0.31]
Political constraints	-0.36	(0.084)	[-0.53 : -0.19]
GDPpc	-0.18	(0.079)	[-0.33 : -0.024]
Corporatism	0.07	(0.057)	[-0.04 : 0.19]
Electoral competition	-0.05	(0.054)	[-0.15 : 0.059]
Contiguity dependency (BCG)	0.01	(0.086)	[-0.16 : 0.18]
** Goodness of fit (R2)	0.59	(0.00145)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.15	(0.08)	[-1.3 : -0.99]
Trade dependency (BCG)	0.56	(0.096)	[0.36 : 0.74]
GDPpc	0.44	(0.089)	[0.26 : 0.61]
Corporatism	0.43	(0.065)	[0.31 : 0.56]
Debt (log)	0.39	(0.068)	[0.26 : 0.53]
Electoral competition	-0.21	(0.054)	[-0.32 : -0.11]
Political constraints	0.20	(0.088)	[0.026 : 0.37]
EU	-0.20	(0.084)	[-0.36 : -0.031]
Contiguity dependency (BCG)	-0.01	(0.086)	[-0.18 : 0.16]
** Goodness of fit (R2)	0.55	(0.00179)	[0.55 : 0.55]

Table A13: Model parameters. No smoothed lag, but plain lag. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.
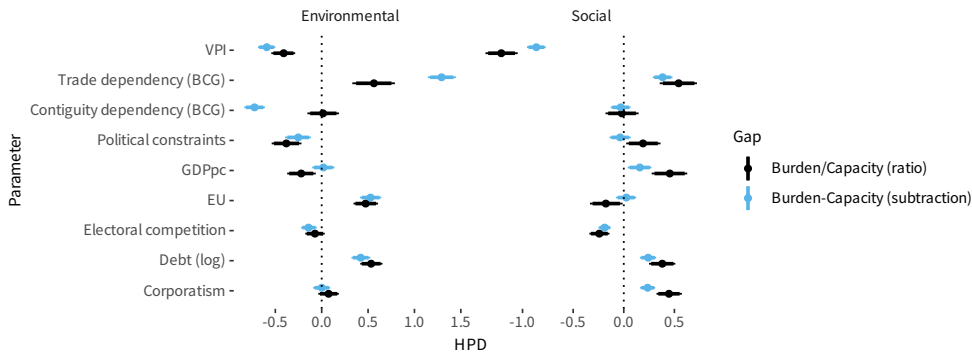
E.3 Subtraction vs. Ratio

Figure A11: Main effects comparing the reference model against one where the gap is a subtraction (PS-IC) (θ_s). Model parameters in Tables A6 and A14.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	1.29	(0.076)	[1.1 : 1.4]
Contiguity dependency (BCG)	-0.72	(0.057)	[-0.83 : -0.61]
VPI	-0.59	(0.048)	[-0.69 : -0.5]
EU	0.53	(0.058)	[0.41 : 0.64]
Debt (log)	0.42	(0.051)	[0.32 : 0.52]
Political constraints	-0.25	(0.071)	[-0.39 : -0.12]
Electoral competition	-0.14	(0.042)	[-0.22 : -0.054]
GDPpc	0.02	(0.061)	[-0.1 : 0.14]
Corporatism	0.00	(0.047)	[-0.092 : 0.091]
** Goodness of fit (R2)	0.63	(0.00197)	[0.63 : 0.64]
y = Burden-Capacity gap (Social, N=903)			
VPI	-0.86	(0.047)	[-0.96 : -0.77]
Trade dependency (BCG)	0.38	(0.049)	[0.29 : 0.48]
Debt (log)	0.24	(0.041)	[0.16 : 0.32]
Corporatism	0.24	(0.038)	[0.16 : 0.31]
Electoral competition	-0.19	(0.031)	[-0.25 : -0.13]
GDPpc	0.16	(0.06)	[0.04 : 0.27]
Political constraints	-0.04	(0.053)	[-0.14 : 0.068]
Contiguity dependency (BCG)	-0.03	(0.05)	[-0.13 : 0.067]
EU	0.02	(0.05)	[-0.075 : 0.12]
** Goodness of fit (R2)	0.58	(0.00185)	[0.58 : 0.58]

Table A14: Model parameters. Burden as subtraction. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

E.4 Generosity vs. Administrative spending

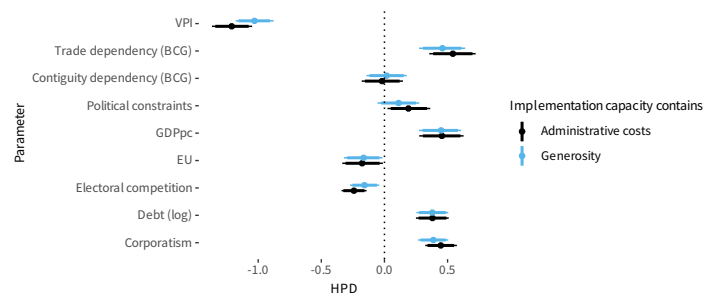Figure A12: Main effects comparing the reference model against one where implementation capacity replaces administrative spending with generosity (θ_s). Only social sector. Model parameters in Tables A6 and A15.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.03	(0.075)	[-1.2 : -0.88]
Trade dependency (BCG)	0.46	(0.092)	[0.27 : 0.64]
GDPpc	0.45	(0.085)	[0.27 : 0.61]
Corporatism	0.39	(0.06)	[0.27 : 0.51]
Debt (log)	0.38	(0.065)	[0.25 : 0.51]
EU	-0.17	(0.078)	[-0.32 : -0.016]
Electoral competition	-0.16	(0.059)	[-0.27 : -0.042]
Political constraints	0.11	(0.084)	[-0.055 : 0.28]
Contiguity dependency (BCG)	0.02	(0.081)	[-0.14 : 0.18]
** Goodness of fit (R2)	0.54	(0.00202)	[0.53 : 0.54]

Table A15: Model parameters. Model with generosity instead of administrative spending. Only social sector. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.
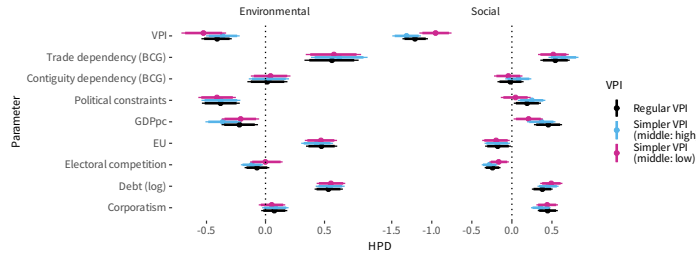
E.5 Simplified VPI

Figure A13: Main effects comparing the reference model against one where VPI is simplified into two categories (θ_s). Model parameters in Tables A6, A16 and A17.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.63	(0.124)	[0.39 : 0.86]
Debt (log)	0.55	(0.062)	[0.43 : 0.67]
EU	0.43	(0.068)	[0.3 : 0.57]
Political constraints	-0.38	(0.084)	[-0.54 : -0.21]
VPI	-0.36	(0.073)	[-0.5 : -0.22]
GDPpc	-0.36	(0.075)	[-0.51 : -0.21]
Electoral competition	-0.12	(0.048)	[-0.21 : -0.019]
Corporatism	0.08	(0.057)	[-0.029 : 0.2]
Contiguity dependency (BCG)	0.03	(0.086)	[-0.14 : 0.2]
** Goodness of fit (R2)	0.58	(0.00139)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.32	(0.091)	[-1.5 : -1.1]
Trade dependency (BCG)	0.64	(0.096)	[0.46 : 0.83]
Debt (log)	0.45	(0.067)	[0.32 : 0.58]
GDPpc	0.37	(0.091)	[0.19 : 0.54]
Corporatism	0.36	(0.062)	[0.24 : 0.48]
Electoral competition	-0.28	(0.05)	[-0.38 : -0.18]
Political constraints	0.25	(0.088)	[0.074 : 0.42]
EU	-0.18	(0.081)	[-0.34 : -0.025]
Contiguity dependency (BCG)	0.08	(0.083)	[-0.083 : 0.24]
** Goodness of fit (R2)	0.55	(0.00163)	[0.55 : 0.55]

Table A16: Model parameters. VPI with 2 values (low/high, and middle category as high). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.58	(0.12)	[0.34 : 0.81]
Debt (log)	0.55	(0.062)	[0.43 : 0.68]
VPI	-0.53	(0.095)	[-0.71 : -0.33]
EU	0.47	(0.069)	[0.33 : 0.61]
Political constraints	-0.41	(0.081)	[-0.57 : -0.25]
GDPpc	-0.21	(0.081)	[-0.37 : -0.054]
Corporatism	0.05	(0.057)	[-0.057 : 0.17]
Contiguity dependency (BCG)	0.04	(0.085)	[-0.12 : 0.21]
Electoral competition	0.00	(0.074)	[-0.13 : 0.15]
** Goodness of fit (R2)	0.58	(0.00143)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-0.95	(0.103)	[-1.2 : -0.75]
Trade dependency (BCG)	0.52	(0.098)	[0.33 : 0.71]
Debt (log)	0.49	(0.07)	[0.35 : 0.63]
Corporatism	0.44	(0.068)	[0.31 : 0.58]
GDPpc	0.21	(0.094)	[0.022 : 0.39]
EU	-0.20	(0.089)	[-0.37 : -0.027]
Electoral competition	-0.16	(0.061)	[-0.28 : -0.038]
Political constraints	0.05	(0.094)	[-0.14 : 0.23]
Contiguity dependency (BCG)	-0.04	(0.09)	[-0.22 : 0.13]
** Goodness of fit (R2)	0.52	(0.00272)	[0.51 : 0.52]

Table A17: Model parameters. VPI with 2 values (low/high, and middle category as low). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

E.6 Learning via Targets

Figure A14 compares the posterior distributions of the parameters of interest (θ_s) between the reference model and three specifications where learning occurs through the same mechanisms explained in the main text, but the weights are by targets, not by instrument.

In the main text, we assume that the administration primarily learns via the instrument dimension. Following this logic, we expect that administrators will find it easier to implement policies that use the same instrument type. However, one might argue that learning with respect to policy targets is also relevant. In other words, it can be the case that once the administration managed to deliver services to one category of people, another policy affecting the same target group will be easier to implement than the previous one. To take account of such learning effects, we discount instruments that are adopted in the context of the same policy target. Here, we apply the weighting schemes as described in the main text (no learning; capped learning; continuous learning; steep learning).
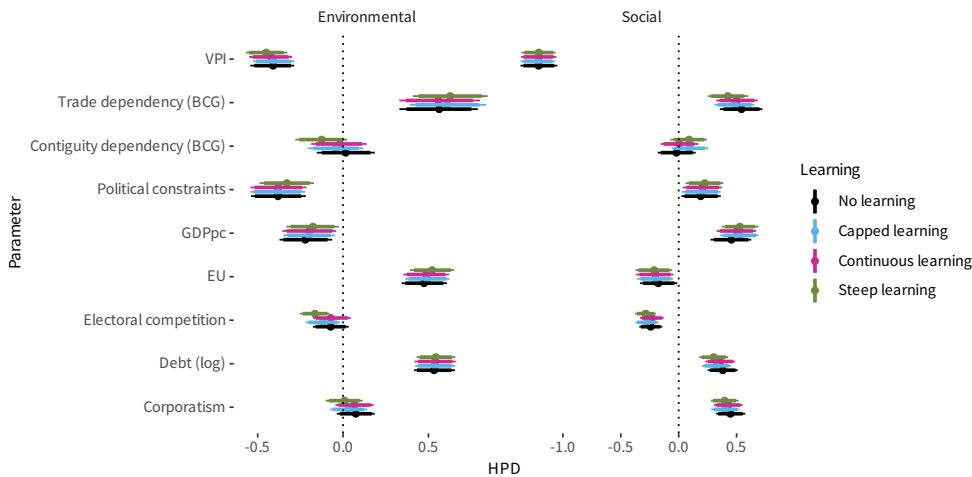

Figure A14: Main effects comparing the reference model against different models specifying learning using weights by targets (θ_s). Model parameters in Tables A6 and A18 to A20.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.56	(0.119)	[0.33 : 0.8]
Debt (log)	0.54	(0.061)	[0.42 : 0.66]
EU	0.49	(0.069)	[0.35 : 0.62]
VPI	-0.42	(0.065)	[-0.55 : -0.3]
Political constraints	-0.38	(0.085)	[-0.54 : -0.21]
GDPpc	-0.20	(0.081)	[-0.36 : -0.04]
Electoral competition	-0.07	(0.057)	[-0.18 : 0.046]
Corporatism	0.07	(0.057)	[-0.044 : 0.18]
Contiguity dependency (BCG)	-0.02	(0.082)	[-0.19 : 0.14]
** Goodness of fit (R2)	0.59	(0.00148)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.21	(0.079)	[-1.4 : -1.1]
GDPpc	0.50	(0.087)	[0.33 : 0.67]
Trade dependency (BCG)	0.50	(0.091)	[0.32 : 0.68]
Corporatism	0.43	(0.063)	[0.31 : 0.55]
Debt (log)	0.36	(0.065)	[0.23 : 0.49]
Electoral competition	-0.23	(0.052)	[-0.33 : -0.13]
Political constraints	0.21	(0.086)	[0.036 : 0.37]
EU	-0.20	(0.082)	[-0.37 : -0.045]
Contiguity dependency (BCG)	0.00	(0.082)	[-0.15 : 0.17]
** Goodness of fit (R2)	0.55	(0.00188)	[0.55 : 0.56]

Table A18: Model parameters. Continuous learning (targets). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.63	(0.113)	[0.41 : 0.85]
Debt (log)	0.54	(0.058)	[0.43 : 0.66]
EU	0.52	(0.066)	[0.39 : 0.65]
VPI	-0.45	(0.062)	[-0.57 : -0.33]
Political constraints	-0.33	(0.081)	[-0.49 : -0.17]
GDPpc	-0.18	(0.077)	[-0.33 : -0.025]
Electoral competition	-0.16	(0.044)	[-0.25 : -0.079]
Contiguity dependency (BCG)	-0.12	(0.078)	[-0.28 : 0.024]
Corporatism	0.01	(0.055)	[-0.1 : 0.12]
** Goodness of fit (R2)	0.59	(0.00158)	[0.59 : 0.6]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.21	(0.075)	[-1.4 : -1.1]
GDPpc	0.53	(0.08)	[0.37 : 0.69]
Trade dependency (BCG)	0.42	(0.088)	[0.25 : 0.6]
Corporatism	0.40	(0.06)	[0.28 : 0.52]
Debt (log)	0.30	(0.064)	[0.18 : 0.43]
Electoral competition	-0.28	(0.046)	[-0.38 : -0.2]
Political constraints	0.22	(0.083)	[0.061 : 0.39]
EU	-0.21	(0.082)	[-0.37 : -0.056]
Contiguity dependency (BCG)	0.09	(0.081)	[-0.072 : 0.24]
** Goodness of fit (R2)	0.55	(0.00188)	[0.55 : 0.56]

Table A19: Model parameters. Steep learning (targets). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.61	(0.115)	[0.39 : 0.84]
Debt (log)	0.54	(0.059)	[0.42 : 0.66]
EU	0.49	(0.068)	[0.36 : 0.62]
VPI	-0.41	(0.062)	[-0.53 : -0.29]
Political constraints	-0.39	(0.083)	[-0.54 : -0.22]
GDPpc	-0.20	(0.077)	[-0.35 : -0.047]
Electoral competition	-0.12	(0.051)	[-0.22 : -0.018]
Contiguity dependency (BCG)	-0.04	(0.082)	[-0.21 : 0.12]
Corporatism	0.03	(0.056)	[-0.076 : 0.14]
** Goodness of fit (R2)	0.59	(0.00151)	[0.59 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.22	(0.076)	[-1.4 : -1.1]
GDPpc	0.53	(0.085)	[0.36 : 0.69]
Trade dependency (BCG)	0.48	(0.089)	[0.31 : 0.65]
Corporatism	0.40	(0.061)	[0.28 : 0.52]
Debt (log)	0.32	(0.064)	[0.2 : 0.45]
Electoral competition	-0.27	(0.05)	[-0.37 : -0.18]
EU	-0.20	(0.079)	[-0.36 : -0.049]
Political constraints	0.20	(0.085)	[0.027 : 0.36]
Contiguity dependency (BCG)	0.09	(0.08)	[-0.061 : 0.26]
** Goodness of fit (R2)	0.56	(0.00204)	[0.55 : 0.56]

Table A20: Model parameters. Capped learning (targets). Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.
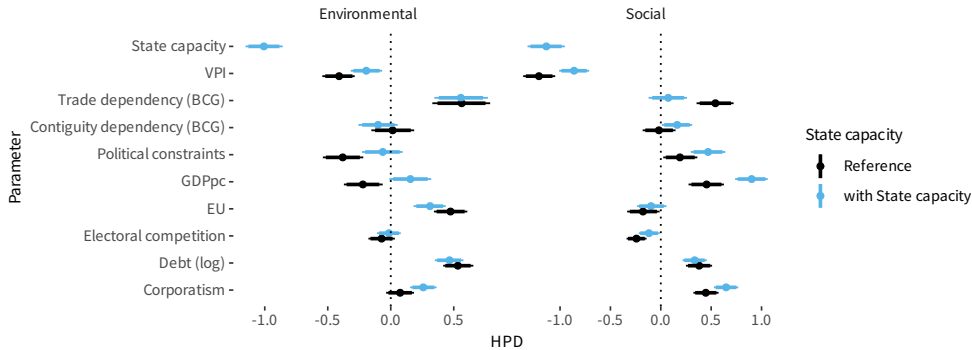
E.7 Control by State capacity

Figure A15: Main effects comparing the reference model against one with a control for State capacity (θ_s) using Hanson & Sigman (2020). Model parameters in Tables A6 and A21.

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Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
State capacity	-1.01	(0.075)	[-1.2 : -0.86]
Trade dependency (BCG)	0.56	(0.108)	[0.35 : 0.77]
Debt (log)	0.47	(0.058)	[0.35 : 0.58]
EU	0.31	(0.065)	[0.18 : 0.44]
Corporatism	0.26	(0.053)	[0.15 : 0.36]
VPI	-0.19	(0.063)	[-0.32 : -0.068]
GDPpc	0.16	(0.084)	[-0.011 : 0.32]
Contiguity dependency (BCG)	-0.10	(0.078)	[-0.26 : 0.055]
Political constraints	-0.06	(0.082)	[-0.23 : 0.095]
Electoral competition	-0.01	(0.048)	[-0.11 : 0.079]
** Goodness of fit (R2)	0.62	(0.00161)	[0.62 : 0.62]
y = Burden-Capacity gap (Social, N=903)			
State capacity	-1.14	(0.094)	[-1.3 : -0.95]
GDPpc	0.90	(0.083)	[0.74 : 1.1]
VPI	-0.86	(0.076)	[-1 : -0.71]
Corporatism	0.65	(0.062)	[0.53 : 0.77]
Political constraints	0.47	(0.088)	[0.3 : 0.64]
Debt (log)	0.34	(0.061)	[0.22 : 0.46]
Contiguity dependency (BCG)	0.16	(0.076)	[0.011 : 0.31]
Electoral competition	-0.12	(0.053)	[-0.22 : -0.011]
EU	-0.10	(0.075)	[-0.24 : 0.056]
Trade dependency (BCG)	0.07	(0.097)	[-0.12 : 0.26]
** Goodness of fit (R2)	0.59	(0.00168)	[0.58 : 0.59]

Table A21: Model parameters. With state capacity. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.
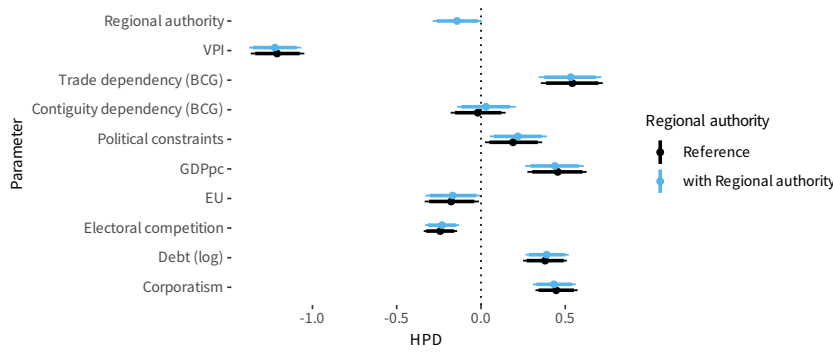
E.8 Control by Regional authority index

Figure A16: Main effects comparing the reference model against one with a control for Regional authority (average of self-rule and shared rule) (θ_s) using Hooghe & Marks (2016). Model parameters in Tables A6 and A22.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.60	(0.119)	[0.37 : 0.84]
EU	0.53	(0.072)	[0.4 : 0.68]
Debt (log)	0.49	(0.062)	[0.37 : 0.61]
Political constraints	-0.42	(0.083)	[-0.58 : -0.26]
VPI	-0.34	(0.066)	[-0.47 : -0.21]
Regional authority	0.32	(0.067)	[0.19 : 0.46]
GDPpc	-0.29	(0.078)	[-0.44 : -0.14]
Electoral competition	-0.13	(0.047)	[-0.23 : -0.044]
Contiguity dependency (BCG)	-0.07	(0.086)	[-0.24 : 0.1]
Corporatism	0.06	(0.057)	[-0.055 : 0.17]
** Goodness of fit (R2)	0.59	(0.00156)	[0.59 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.22	(0.079)	[-1.4 : -1.1]
Trade dependency (BCG)	0.53	(0.095)	[0.34 : 0.71]
GDPpc	0.44	(0.088)	[0.26 : 0.61]
Corporatism	0.43	(0.064)	[0.31 : 0.56]
Debt (log)	0.39	(0.066)	[0.26 : 0.52]
Electoral competition	-0.23	(0.051)	[-0.33 : -0.13]
Political constraints	0.22	(0.087)	[0.051 : 0.39]
EU	-0.17	(0.084)	[-0.33 : -0.0019]
Regional authority	-0.14	(0.074)	[-0.29 : 0.0053]
Contiguity dependency (BCG)	0.03	(0.089)	[-0.14 : 0.21]
** Goodness of fit (R2)	0.56	(0.00163)	[0.55 : 0.56]

Table A22: Model parameters. With regional authority. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

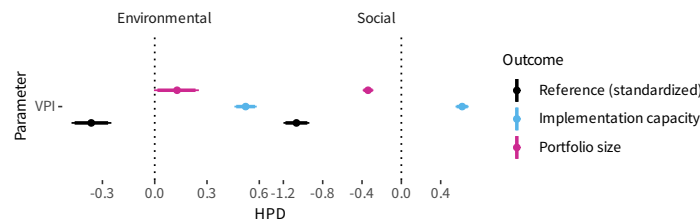## E.9 Comparison between the Gap and its constitutive parts

Figure A17: Comparison of the VPI effect in a model with a standardized gap against the VPI of the standardized constitutive parts (Portfolio size and Implementation capacity, respectively) (θ_s). Model parameters in Tables A23 to A25.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.50	(0.109)	[0.28 : 0.71]
Debt (log)	0.47	(0.054)	[0.36 : 0.57]
EU	0.42	(0.06)	[0.3 : 0.54]
VPI	-0.36	(0.058)	[-0.48 : -0.25]
Political constraints	-0.34	(0.074)	[-0.49 : -0.19]
GDPpc	-0.20	(0.07)	[-0.33 : -0.055]
Electoral competition	-0.07	(0.043)	[-0.15 : 0.01]
Corporatism	0.06	(0.051)	[-0.034 : 0.17]
Contiguity dependency (BCG)	0.01	(0.075)	[-0.13 : 0.16]
** Goodness of fit (R2)	0.59	(0.00144)	[0.58 : 0.59]
y = Burden-Capacity gap (Social, N=903)			
VPI	-1.07	(0.068)	[-1.2 : -0.94]
Trade dependency (BCG)	0.48	(0.085)	[0.32 : 0.65]
Corporatism	0.40	(0.056)	[0.28 : 0.5]
GDPpc	0.40	(0.077)	[0.24 : 0.55]
Debt (log)	0.34	(0.059)	[0.22 : 0.45]
Electoral competition	-0.22	(0.045)	[-0.31 : -0.13]
Political constraints	0.17	(0.076)	[0.022 : 0.32]
EU	-0.16	(0.074)	[-0.31 : -0.013]
Contiguity dependency (BCG)	-0.02	(0.074)	[-0.17 : 0.12]
** Goodness of fit (R2)	0.56	(0.00171)	[0.55 : 0.56]

Table A23: Model parameters. Gap standardized. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
Trade dependency (BCG)	0.68	(0.123)	[0.44 : 0.92]
EU	0.67	(0.065)	[0.54 : 0.8]
Debt (log)	0.36	(0.052)	[0.26 : 0.47]
VPI	0.13	(0.066)	[-0.0044 : 0.25]
Corporatism	0.12	(0.054)	[0.017 : 0.23]
Contiguity dependency (BCG)	-0.12	(0.08)	[-0.28 : 0.042]
Electoral competition	-0.06	(0.043)	[-0.15 : 0.022]
Political constraints	-0.01	(0.075)	[-0.15 : 0.14]
GDPpc	0.00	(0.08)	[-0.16 : 0.15]
** Goodness of fit (R2)	0.64	(0.00191)	[0.64 : 0.64]
y = Burden-Capacity gap (Social, N=903)			
GDPpc	0.40	(0.039)	[0.33 : 0.48]
VPI	-0.34	(0.028)	[-0.39 : -0.28]
Contiguity dependency (BCG)	0.25	(0.032)	[0.19 : 0.32]
Corporatism	0.24	(0.03)	[0.19 : 0.3]
EU	0.23	(0.036)	[0.15 : 0.29]
Electoral competition	-0.19	(0.02)	[-0.23 : -0.15]
Trade dependency (BCG)	-0.11	(0.038)	[-0.18 : -0.028]
Debt (log)	-0.03	(0.029)	[-0.084 : 0.03]
Political constraints	0.02	(0.04)	[-0.058 : 0.099]
** Goodness of fit (R2)	0.51	(0.00501)	[0.5 : 0.52]

Table A24: Model parameters. Outcome is standardized implementation burden. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

Covariate	Coefficient	SD	95% CI
y = Burden-Capacity gap (Environmental, N=903)			
VPI	0.52	(0.033)	[0.46 : 0.59]
Debt (log)	-0.26	(0.038)	[-0.33 : -0.18]
Political constraints	0.21	(0.046)	[0.12 : 0.3]
EU	0.16	(0.035)	[0.091 : 0.23]
GDPpc	0.11	(0.038)	[0.034 : 0.18]
Trade dependency (BCG)	-0.08	(0.057)	[-0.19 : 0.029]
Electoral competition	-0.05	(0.071)	[-0.12 : 0.1]
Corporatism	-0.05	(0.031)	[-0.11 : 0.0082]
Contiguity dependency (BCG)	-0.03	(0.042)	[-0.11 : 0.053]
** Goodness of fit (R2)	0.61	(0.00274)	[0.61 : 0.62]
y = Burden-Capacity gap (Social, N=903)			
VPI	0.62	(0.034)	[0.55 : 0.68]
Trade dependency (BCG)	-0.39	(0.038)	[-0.46 : -0.32]
EU	0.27	(0.034)	[0.21 : 0.34]
Debt (log)	-0.19	(0.027)	[-0.25 : -0.14]
Political constraints	0.17	(0.04)	[0.088 : 0.25]
Contiguity dependency (BCG)	0.13	(0.037)	[0.062 : 0.21]
Electoral competition	0.13	(0.024)	[0.081 : 0.17]
GDPpc	0.12	(0.037)	[0.057 : 0.2]
Corporatism	0.00	(0.029)	[-0.052 : 0.061]
** Goodness of fit (R2)	0.63	(0.00224)	[0.62 : 0.63]

Table A25: Model parameters. Outcome is standardized implementation capacity. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.

F On performance

Figure A18 shows the average marginal effects of new environmental policies on the environmental performance of a country for different sizes of the burden-capacity-gap. For this analysis, two broad indicators are combined. The first indicator captures the general environmental performance with respect to key environmental pollutants such as SOx, NOx, CO, waste, etc. The second indicator refers to each site's country specific environmental performance (CSEP) (Jahn, 2016). The indicators are rescaled so that a higher value implies greater environmental quality. The analysis control for a range of other influences such as the absolute levels of economic development, EU membership, and the structure of national economy (urbanization and industrialization). Moreover, it contains a lagged dependent variable.
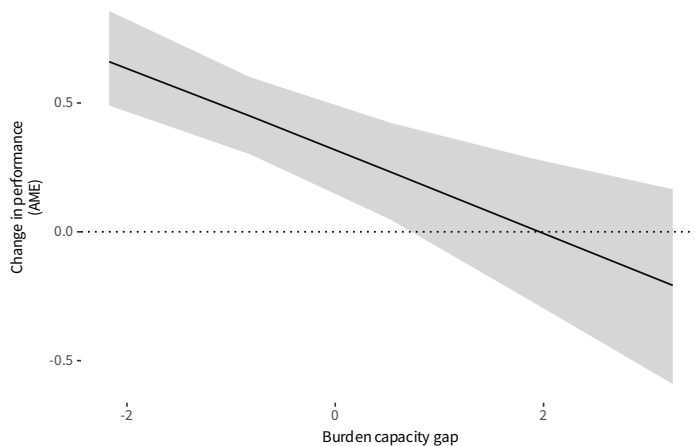

Figure A18: Effects of burden capacity gap on environmental performance (average marginal effects). Model parameters in Table A26

Covariate	Coefficient	SD	95% CI
y = Environmental performance (N=693)			
Portfolio size	0.37	(0.072)	[0.23 : 0.51]
Industry	0.21	(0.015)	[0.18 : 0.23]
Portfolio size * Gap	-0.10	(0.037)	[-0.17 : -0.02]
EU	0.08	(0.026)	[0.028 : 0.13]
GDP growth	-0.05	(0.017)	[-0.083 : -0.017]
Trade	-0.03	(0.021)	[-0.075 : 0.0063]
Urban	0.03	(0.023)	[-0.012 : 0.074]
Gap	0.01	(0.018)	[-0.02 : 0.05]
GDP pc	-0.01	(0.025)	[-0.059 : 0.041]
** Goodness of fit (R2)	0.83	(0.0106)	[0.81 : 0.84]

Table A26: Model parameters. Outcome is environmental performance. Coefficient point estimates (median of the posterior distribution), SD refers to the standard deviation (uncertainty), and CI to the 95 percent credible interval.