Appendix for "Assessing and Comparing the Effects of Public Policies – A New Approach"

Supplemental Online material

Abstract

Technical documentation for "Assessing and Comparing the Effects of Public Policies – A New Approach".

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 come into consideration, a policy change has to 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

- was published during the observation period, which starts on **January 1, 1976**, and ends on **March 31st, 2021**
- was adopted at the **national level**

The second point clearly excludes measures by sub-national jurisdictions such as regional or local bodies, even if the latter 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 and policy instruments.

By means of these two categories, we seek to measure developments over time in a nuanced manner. Moreover, in order to assess whether a change represents the introduction or abolishment, we are interested in policy change relative to the previous state. Thus, as will be explained in more detail in this section, relative changes to the previous targets and instruments need to be coded. We are interested in the introduction and abolishment of (new) policy target (guiding question: *what is adressed?*), of policy instruments (*how is something addressed?*).

Recalling the observation period (January 1st, 1976 to March 31st, 2021), 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 1980 in order to reconstruct the occurrence and the direction of change. For instance, if a law adopted in 2008 changes a law enacted in 1973, the latter legislation has to be considered in order to make a statement about the direction and nature of change taking place through the 2008 legislation.

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 tables below contain the policy targets this project is exclusively interested in. Thus, when screening the legislative acts, please identify the presence and/or abolishment of any policy targets from these lists and indicate these events of policy change as either introduction or termination.

One single target has to be coded only once per legislative act – it must not be coded multiple times. 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 particular event must be coded as policy introduction. If, by contrast, a policy target from the list is abolished, i.e. is not subject to governmental action anymore, this particular event must be coded as policy termination. Please note that the termination of a target entails the termination of all attached instruments, which have to be 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 (SO_2)
3.	Air quality standard for carbon monoxide (CO)
4.	Air quality standard for particulate matter
5.	Air quality standard for ozone (O_3)
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 (SO_2) emissions from large combustion plants using coal
11. Sulphur dioxide (SO_2) emissions from passenger vehicles using unleaded gasoline
12. Sulphur dioxide (SO_2) emissions from heavy duty vehicles using diesel
13. Carbon dioxide (CO_2) emissions from large combustion plants using coal
14. Carbon dioxide (CO_2) 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
77. Carbon dioxide (CO_2) emissions from aviation activities
78. Maximum permissible limit for the sulphur content of petrol (gasoline, benzine, fuel)

Water Protection Policy

21. 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)
22. Copper in continental surfaces water
23. Nitrate (NO_3^-) in continental surfaces water
24. Phosphates in continental surfaces water
25. Zinc in continental surfaces water
26. Oils in continental surfaces water
27. Pesticides (fungicides, herbicides, insecticides, exempt DDT) in continental surfaces water
28. DDT (Dichloro-Diphenyl-Trichloroethane) in continental surfaces water
29. Phenols (as total C) in continental surfaces water
30. BOD (Biochemical Oxygen Demand) of continental surfaces water
31. Lead from industrial discharges into continental surfaces water
32. Copper from industrial discharges into continental surfaces water
33. Nitrate (NO_3^-) from industrial discharges into continental surfaces water
34. Phosphates from industrial discharges into continental surfaces water
35. Chloride (Cl^-) from industrial discharges into continental surfaces water
36. Sulphates from industrial discharges into continental surfaces water
37. Iron from industrial discharges into continental surfaces water
38. Zinc from industrial discharges into continental surfaces water
39. Oils and greases from industrial discharges into continental surfaces water
40. Pesticides and herbicides from industrial discharges into continental surfaces water
41. Phenols (as total C) from industrial discharges into continental surfaces water
42. Coliform bacteria from industrial discharges into continental surfaces water
43. BOD (Biochemical Oxygen Demand) from industrial discharges into continental surfaces water
44. COD (Chemical Oxygen Demand) from industrial discharges into continental surfaces water

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.

For a comprehensive list of policy instruments, please refer to Table 1 in the main text.

B Results

This section contains the whole set of parameters produced for the main model, the main parameters of interest in tabular form, and the combination of effect probability and magnitude.

B.1 Model parameters

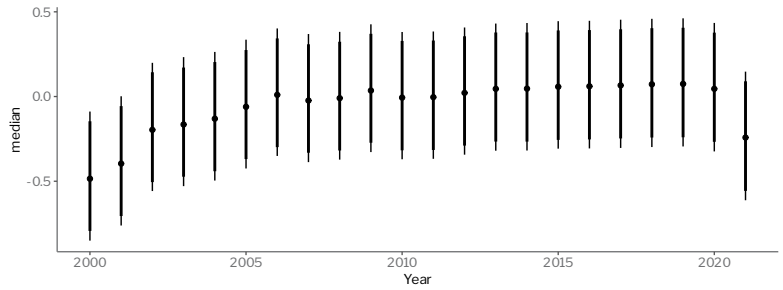

Figure 1: Time dynamics: year varying intercepts.

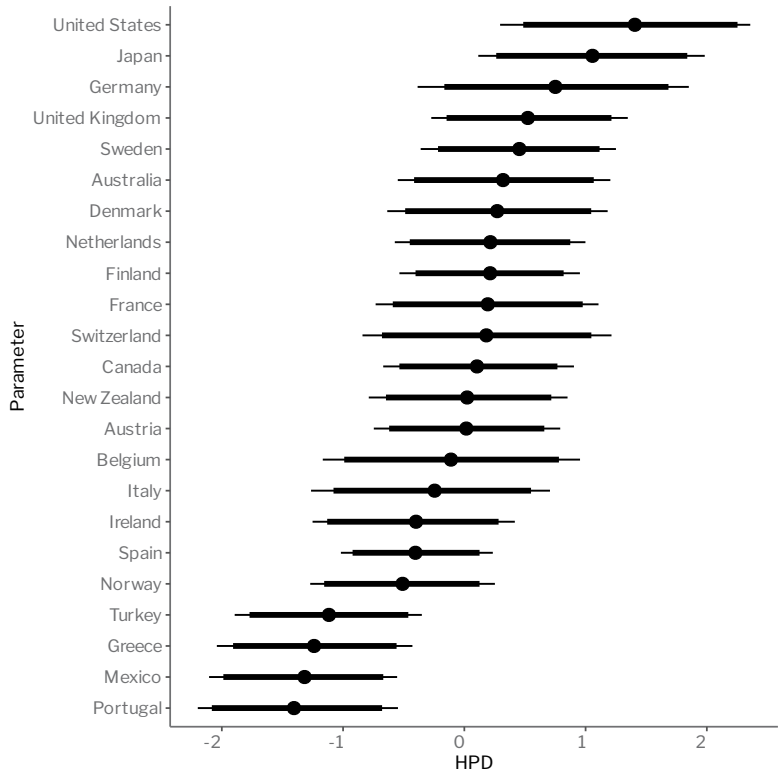

Figure 2: Country-varying intercepts.

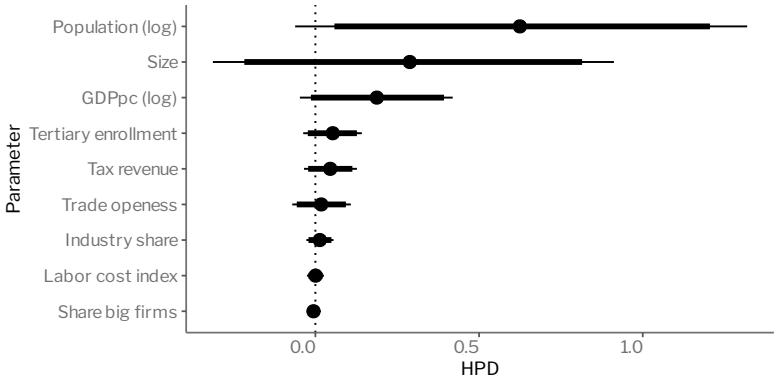

Figure 3: Control covariates.

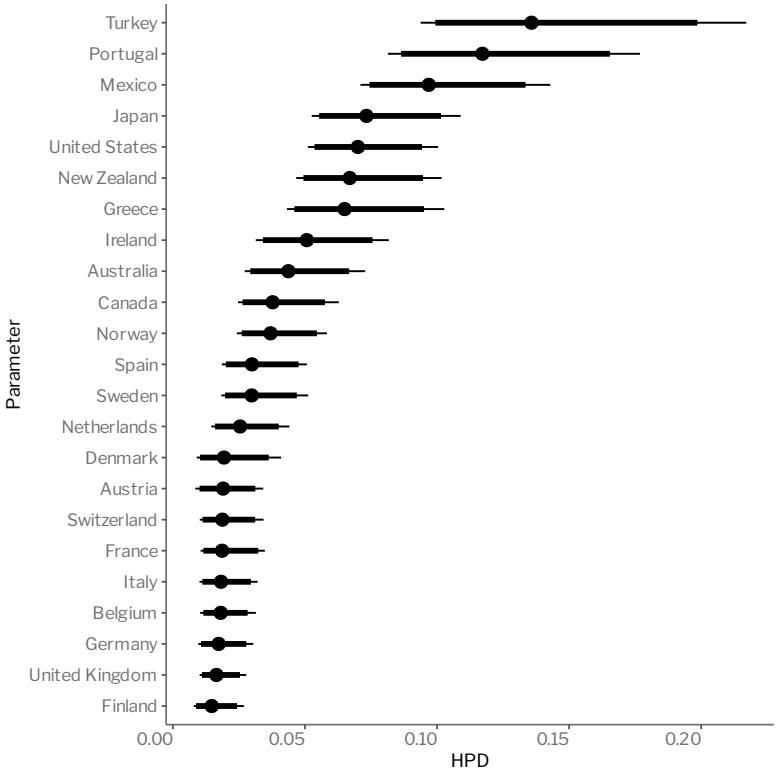

Figure 4: Country-varying clustered error terms.

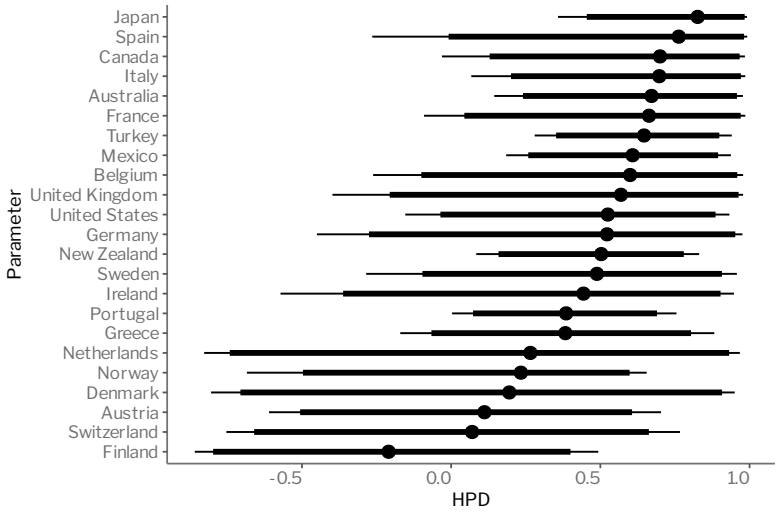

Figure 5: Time dynamics: AR(1) parameters.

B.2 Tabular form

Table 2: Main effects (θ)

Variable	Parameter	Coefficient	SD	95% CI
I: Information-based instruments / T: 1	θ_{250}	-0.0116	(0.0954)	[-0.21 : 0.17]
I: Information-based instruments / T: 10	θ_{290}	-0.0311	(0.0178)	[-0.065 : 0.0056]
I: Information-based instruments / T: 11	θ_{258}	-0.0231	(0.0381)	[-0.099 : 0.05]
I: Information-based instruments / T: 12	θ_{259}	-0.0136	(0.0136)	[-0.041 : 0.013]
I: Information-based instruments / T: 13	θ_{260}	-0.053	(0.0556)	[-0.17 : 0.054]
I: Information-based instruments / T: 14	θ_{261}	0.207	(0.107)	[0.021 : 0.43]
I: Information-based instruments / T: 15	θ_{280}	-0.0693	(0.125)	[-0.36 : 0.13]
I: Information-based instruments / T: 16	θ_{289}	-0.0198	(0.0598)	[-0.14 : 0.094]
I: Information-based instruments / T: 17	θ_{287}	0.0263	(0.141)	[-0.22 : 0.38]
I: Information-based instruments / T: 18	θ_{277}	-0.0695	(0.125)	[-0.37 : 0.13]
I: Information-based instruments / T: 19	θ_{267}	-0.00575	(0.125)	[-0.27 : 0.24]
I: Information-based instruments / T: 2	θ_{253}	-0.00889	(0.0956)	[-0.2 : 0.18]
I: Information-based instruments / T: 20	θ_{273}	-0.0085	(0.121)	[-0.27 : 0.24]
I: Information-based instruments / T: 21	θ_{282}	0.00284	(0.103)	[-0.21 : 0.22]
I: Information-based instruments / T: 22	θ_{276}	0.0623	(0.105)	[-0.12 : 0.3]
I: Information-based instruments / T: 23	θ_{266}	0.0982	(0.0917)	[-0.066 : 0.29]
I: Information-based instruments / T: 24	θ_{264}	0.00893	(0.135)	[-0.27 : 0.3]
I: Information-based instruments / T: 25	θ_{265}	0.004	(0.14)	[-0.28 : 0.3]
I: Information-based instruments / T: 27	θ_{278}	-0.0255	(0.0462)	[-0.12 : 0.063]
I: Information-based instruments / T: 28	θ_{268}	-0.0287	(0.0695)	[-0.17 : 0.1]
I: Information-based instruments / T: 29	θ_{256}	-0.0604	(0.0455)	[-0.15 : 0.031]
I: Information-based instruments / T: 3	θ_{248}	-0.0209	(0.026)	[-0.07 : 0.033]
I: Information-based instruments / T: 30	θ_{254}	-0.0199	(0.0427)	[-0.1 : 0.063]
I: Information-based instruments / T: 31	θ_{255}	-0.00856	(0.0169)	[-0.042 : 0.025]
I: Information-based instruments / T: 32	θ_{284}	-0.0322	(0.0374)	[-0.11 : 0.041]
I: Information-based instruments / T: 33	θ_{271}	-0.00584	(0.12)	[-0.27 : 0.23]
I: Information-based instruments / T: 34	θ_{262}	0.00793	(0.0624)	[-0.12 : 0.13]
I: Information-based instruments / T: 35	θ_{272}	-0.0054	(0.122)	[-0.27 : 0.23]
I: Information-based instruments / T: 36	θ_{285}	0.0478	(0.0495)	[-0.046 : 0.15]
I: Information-based instruments / T: 37	θ_{286}	0.063	(0.102)	[-0.13 : 0.28]
I: Information-based instruments / T: 38	θ_{274}	-0.0103	(0.124)	[-0.27 : 0.24]
I: Information-based instruments / T: 39	θ_{279}	0.0271	(0.0287)	[-0.026 : 0.087]
I: Information-based instruments / T: 4	θ_{252}	-0.00482	(0.0732)	[-0.16 : 0.14]
I: Information-based instruments / T: 40	θ_{269}	-0.0092	(0.118)	[-0.26 : 0.21]
I: Information-based instruments / T: 41	θ_{281}	-0.00184	(0.101)	[-0.2 : 0.21]
I: Information-based instruments / T: 43	θ_{257}	0.041	(0.0683)	[-0.085 : 0.19]
I: Information-based instruments / T: 45	θ_{283}	-0.0717	(0.125)	[-0.36 : 0.14]
I: Information-based instruments / T: 46	θ_{270}	-0.00696	(0.126)	[-0.29 : 0.24]
I: Information-based instruments / T: 5	θ_{251}	-0.00111	(0.0953)	[-0.19 : 0.19]

I: Information-based instruments / T: 6	θ_{249}	-0.00671	(0.0367)	[-0.077 : 0.064]
I: Information-based instruments / T: 7	θ_{263}	0.032	(0.0368)	[-0.037 : 0.11]
I: Information-based instruments / T: 8	θ_{288}	0.00709	(0.0766)	[-0.14 : 0.17]
I: Information-based instruments / T: 9	θ_{275}	-0.00463	(0.125)	[-0.26 : 0.27]
I: Liability scheme / T: 1	θ_{195}	-0.0457	(0.115)	[-0.31 : 0.15]
I: Liability scheme / T: 10	θ_{230}	0.0242	(0.0195)	[-0.015 : 0.062]
I: Liability scheme / T: 11	θ_{202}	-0.00598	(0.0189)	[-0.043 : 0.031]
I: Liability scheme / T: 12	θ_{203}	0.00291	(0.0805)	[-0.16 : 0.16]
I: Liability scheme / T: 13	θ_{204}	0.0229	(0.139)	[-0.24 : 0.35]
I: Liability scheme / T: 15	θ_{220}	0.0271	(0.113)	[-0.19 : 0.28]
I: Liability scheme / T: 16	θ_{229}	0.00776	(0.111)	[-0.21 : 0.24]
I: Liability scheme / T: 17	θ_{227}	0.0262	(0.116)	[-0.19 : 0.28]
I: Liability scheme / T: 18	θ_{217}	-0.0229	(0.0992)	[-0.23 : 0.16]
I: Liability scheme / T: 19	θ_{207}	-0.0102	(0.119)	[-0.26 : 0.22]
I: Liability scheme / T: 2	θ_{197}	-0.047	(0.115)	[-0.3 : 0.15]
I: Liability scheme / T: 20	θ_{213}	-0.0101	(0.119)	[-0.26 : 0.23]
I: Liability scheme / T: 21	θ_{222}	0.00591	(0.11)	[-0.22 : 0.23]
I: Liability scheme / T: 22	θ_{216}	-0.0551	(0.065)	[-0.19 : 0.069]
I: Liability scheme / T: 26	θ_{231}	0.0182	(0.0857)	[-0.15 : 0.19]
I: Liability scheme / T: 27	θ_{218}	0.00176	(0.0936)	[-0.19 : 0.19]
I: Liability scheme / T: 28	θ_{208}	0.0282	(0.0865)	[-0.14 : 0.21]
I: Liability scheme / T: 29	θ_{199}	0.01	(0.113)	[-0.21 : 0.25]
I: Liability scheme / T: 3	θ_{193}	0.0228	(0.0221)	[-0.022 : 0.065]
I: Liability scheme / T: 30	θ_{198}	-0.0316	(0.062)	[-0.16 : 0.087]
I: Liability scheme / T: 32	θ_{224}	0.00344	(0.0267)	[-0.047 : 0.059]
I: Liability scheme / T: 33	θ_{211}	0.0125	(0.12)	[-0.22 : 0.28]
I: Liability scheme / T: 34	θ_{205}	0.023	(0.141)	[-0.25 : 0.36]
I: Liability scheme / T: 35	θ_{212}	-0.0625	(0.0908)	[-0.26 : 0.099]
I: Liability scheme / T: 36	θ_{225}	-0.031	(0.0775)	[-0.18 : 0.12]
I: Liability scheme / T: 37	θ_{226}	-0.00654	(0.113)	[-0.25 : 0.22]
I: Liability scheme / T: 38	θ_{214}	-0.00901	(0.124)	[-0.28 : 0.23]
I: Liability scheme / T: 39	θ_{219}	0.00996	(0.116)	[-0.21 : 0.26]
I: Liability scheme / T: 4	θ_{196}	-0.0454	(0.113)	[-0.31 : 0.15]
I: Liability scheme / T: 40	θ_{209}	-0.00868	(0.12)	[-0.27 : 0.22]
I: Liability scheme / T: 41	θ_{221}	-0.0161	(0.0335)	[-0.082 : 0.051]
I: Liability scheme / T: 42	θ_{201}	0.00945	(0.112)	[-0.22 : 0.23]
I: Liability scheme / T: 43	θ_{200}	0.0296	(0.116)	[-0.19 : 0.3]
I: Liability scheme / T: 45	θ_{223}	-0.0092	(0.102)	[-0.23 : 0.2]
I: Liability scheme / T: 46	θ_{210}	-0.0111	(0.127)	[-0.28 : 0.24]
I: Liability scheme / T: 6	θ_{194}	-0.0159	(0.142)	[-0.36 : 0.25]
I: Liability scheme / T: 7	θ_{206}	0.00376	(0.134)	[-0.27 : 0.29]
I: Liability scheme / T: 8	θ_{228}	-0.00901	(0.107)	[-0.23 : 0.2]
I: Liability scheme / T: 9	θ_{215}	-0.00826	(0.125)	[-0.27 : 0.25]
I: Obligatory standards / T: 1	θ_{3}	-0.0511	(0.0286)	[-0.1 : 0.0069]
I: Obligatory standards / T: 11	θ_{13}	-0.00632	(0.0456)	[-0.098 : 0.084]
I: Obligatory standards / T: 12	θ_{14}	-0.0312	(0.016)	[-0.063 : 0.00017]
I: Obligatory standards / T: 13	θ_{15}	-0.076	(0.0359)	[-0.15 : -0.0051]
I: Obligatory standards / T: 14	θ_{16}	-0.012	(0.0871)	[-0.19 : 0.15]
I: Obligatory standards / T: 15	θ_{35}	0.0351	(0.0286)	[-0.019 : 0.092]
I: Obligatory standards / T: 16	θ_{44}	-0.0357	(0.0591)	[-0.16 : 0.074]
I: Obligatory standards / T: 17	θ_{42}	-0.0401	(0.0186)	[-0.075 : -0.0021]
I: Obligatory standards / T: 18	θ_{32}	0.0526	(0.0592)	[-0.057 : 0.18]
I: Obligatory standards / T: 19	θ_{22}	0.0269	(0.0771)	[-0.12 : 0.19]
I: Obligatory standards / T: 2	θ_{6}	0.217	(0.118)	[0.0059 : 0.46]
I: Obligatory standards / T: 20	θ_{28}	-0.00787	(0.0478)	[-0.1 : 0.085]
I: Obligatory standards / T: 21	θ_{37}	0.00129	(0.0656)	[-0.13 : 0.13]
I: Obligatory standards / T: 22	θ_{31}	-0.0486	(0.0302)	[-0.11 : 0.011]
I: Obligatory standards / T: 23	θ_{21}	-0.037	(0.0617)	[-0.17 : 0.077]
I: Obligatory standards / T: 24	θ_{19}	0.0145	(0.131)	[-0.23 : 0.32]
I: Obligatory standards / T: 25	θ_{20}	0.0173	(0.0437)	[-0.061 : 0.11]
I: Obligatory standards / T: 26	θ_{45}	0.00944	(0.0275)	[-0.043 : 0.065]
I: Obligatory standards / T: 27	θ_{33}	0.0573	(0.0679)	[-0.067 : 0.2]
I: Obligatory standards / T: 28	θ_{23}	0.000662	(0.0577)	[-0.11 : 0.11]
I: Obligatory standards / T: 29	θ_{9}	0.0524	(0.0347)	[-0.016 : 0.12]
I: Obligatory standards / T: 3	θ_{1}	0.00622	(0.105)	[-0.2 : 0.23]
I: Obligatory standards / T: 30	θ_{7}	0.00275	(0.0694)	[-0.13 : 0.14]

I: Obligatory standards / T: 31	θ_{8}	0.0248	(0.0749)	[-0.12 : 0.18]
I: Obligatory standards / T: 32	θ_{39}	0.00979	(0.0235)	[-0.039 : 0.053]
I: Obligatory standards / T: 33	θ_{26}	-0.0491	(0.0466)	[-0.15 : 0.042]
I: Obligatory standards / T: 34	θ_{17}	0.00685	(0.0808)	[-0.15 : 0.17]
I: Obligatory standards / T: 35	θ_{27}	0.0688	(0.0589)	[-0.04 : 0.19]
I: Obligatory standards / T: 36	θ_{40}	-0.044	(0.105)	[-0.29 : 0.13]
I: Obligatory standards / T: 37	θ_{41}	-0.0346	(0.0333)	[-0.1 : 0.028]
I: Obligatory standards / T: 38	θ_{29}	0.0278	(0.061)	[-0.085 : 0.16]
I: Obligatory standards / T: 39	θ_{34}	0.0516	(0.0634)	[-0.067 : 0.18]
I: Obligatory standards / T: 4	θ_{5}	-0.00342	(0.0135)	[-0.031 : 0.022]
I: Obligatory standards / T: 40	θ_{24}	-0.0157	(0.021)	[-0.055 : 0.028]
I: Obligatory standards / T: 41	θ_{36}	-0.0168	(0.0246)	[-0.064 : 0.032]
I: Obligatory standards / T: 42	θ_{12}	-0.0428	(0.031)	[-0.1 : 0.017]
I: Obligatory standards / T: 43	θ_{10}	-0.0505	(0.077)	[-0.21 : 0.088]
I: Obligatory standards / T: 44	θ_{11}	0.0194	(0.112)	[-0.19 : 0.26]
I: Obligatory standards / T: 45	θ_{38}	-0.0566	(0.0592)	[-0.18 : 0.053]
I: Obligatory standards / T: 46	θ_{25}	0.0362	(0.0573)	[-0.078 : 0.15]
I: Obligatory standards / T: 5	θ_{4}	0.0091	(0.108)	[-0.2 : 0.23]
I: Obligatory standards / T: 6	θ_{2}	-0.00753	(0.103)	[-0.22 : 0.2]
I: Obligatory standards / T: 7	θ_{18}	0.029	(0.037)	[-0.044 : 0.1]
I: Obligatory standards / T: 8	θ_{43}	0.108	(0.0803)	[-0.037 : 0.28]
I: Obligatory standards / T: 9	θ_{30}	-0.0509	(0.0225)	[-0.099 : -0.0095]
I: Permits / T: 1	θ_{308}	0.0121	(0.138)	[-0.26 : 0.32]
I: Permits / T: 10	θ_{336}	-0.00118	(0.0801)	[-0.15 : 0.16]
I: Permits / T: 11	θ_{313}	0.00937	(0.0304)	[-0.05 : 0.067]
I: Permits / T: 12	θ_{314}	0.0157	(0.0709)	[-0.12 : 0.16]
I: Permits / T: 13	θ_{315}	0.0174	(0.141)	[-0.26 : 0.35]
I: Permits / T: 14	θ_{316}	0.0198	(0.14)	[-0.24 : 0.35]
I: Permits / T: 15	θ_{326}	-0.033	(0.0788)	[-0.21 : 0.11]
I: Permits / T: 16	θ_{335}	0.00387	(0.117)	[-0.23 : 0.25]
I: Permits / T: 17	θ_{333}	-0.0155	(0.125)	[-0.29 : 0.23]
I: Permits / T: 18	θ_{323}	-0.06	(0.14)	[-0.41 : 0.18]
I: Permits / T: 20	θ_{320}	0.00867	(0.134)	[-0.26 : 0.3]
I: Permits / T: 21	θ_{328}	0.00788	(0.121)	[-0.23 : 0.27]
I: Permits / T: 22	θ_{322}	-0.0593	(0.146)	[-0.43 : 0.16]
I: Permits / T: 27	θ_{324}	-0.00866	(0.0996)	[-0.21 : 0.19]
I: Permits / T: 3	θ_{306}	0.0101	(0.0251)	[-0.036 : 0.064]
I: Permits / T: 30	θ_{310}	0.0199	(0.0407)	[-0.059 : 0.1]
I: Permits / T: 31	θ_{311}	-0.0128	(0.0209)	[-0.055 : 0.026]
I: Permits / T: 32	θ_{330}	-0.0184	(0.124)	[-0.3 : 0.22]
I: Permits / T: 34	θ_{317}	0.0148	(0.136)	[-0.24 : 0.32]
I: Permits / T: 35	θ_{319}	-0.054	(0.0444)	[-0.14 : 0.032]
I: Permits / T: 36	θ_{331}	0.0444	(0.078)	[-0.094 : 0.22]
I: Permits / T: 37	θ_{332}	-0.0131	(0.127)	[-0.31 : 0.23]
I: Permits / T: 38	θ_{321}	0.00416	(0.14)	[-0.27 : 0.32]
I: Permits / T: 39	θ_{325}	-0.0439	(0.1)	[-0.27 : 0.14]
I: Permits / T: 41	θ_{327}	-0.0116	(0.124)	[-0.3 : 0.23]
I: Permits / T: 43	θ_{312}	-0.0213	(0.0496)	[-0.12 : 0.074]
I: Permits / T: 45	θ_{329}	-0.0296	(0.131)	[-0.34 : 0.19]
I: Permits / T: 5	θ_{309}	-0.0668	(0.0399)	[-0.15 : 0.0059]
I: Permits / T: 6	θ_{307}	0.0178	(0.143)	[-0.24 : 0.36]
I: Permits / T: 7	θ_{318}	-0.0357	(0.0325)	[-0.1 : 0.03]
I: Permits / T: 8	θ_{334}	-0.0617	(0.101)	[-0.29 : 0.12]
I: Prohibition / Ban / T: 1	θ_{48}	-0.00449	(0.132)	[-0.28 : 0.26]
I: Prohibition / Ban / T: 10	θ_{89}	-0.0157	(0.0773)	[-0.17 : 0.14]
I: Prohibition / Ban / T: 11	θ_{58}	-0.0604	(0.044)	[-0.15 : 0.022]
I: Prohibition / Ban / T: 12	θ_{59}	-0.00789	(0.0773)	[-0.16 : 0.15]
I: Prohibition / Ban / T: 13	θ_{60}	-0.00113	(0.142)	[-0.3 : 0.3]
I: Prohibition / Ban / T: 14	θ_{61}	-0.0189	(0.138)	[-0.34 : 0.24]
I: Prohibition / Ban / T: 15	θ_{80}	-0.0549	(0.0549)	[-0.16 : 0.052]
I: Prohibition / Ban / T: 16	θ_{88}	0.0132	(0.14)	[-0.26 : 0.34]
I: Prohibition / Ban / T: 18	θ_{77}	0.0111	(0.0863)	[-0.16 : 0.19]
I: Prohibition / Ban / T: 19	θ_{67}	0.0011	(0.123)	[-0.25 : 0.25]
I: Prohibition / Ban / T: 2	θ_{51}	-0.0606	(0.0454)	[-0.15 : 0.026]
I: Prohibition / Ban / T: 20	θ_{73}	-0.0221	(0.0368)	[-0.096 : 0.049]
I: Prohibition / Ban / T: 21	θ_{82}	0.00411	(0.138)	[-0.27 : 0.3]

I: Prohibition / Ban / T: 22	θ_{76}	0.102	(0.123)	[-0.095 : 0.4]
I: Prohibition / Ban / T: 23	θ_{66}	0.0113	(0.117)	[-0.22 : 0.26]
I: Prohibition / Ban / T: 24	θ_{64}	0.0125	(0.021)	[-0.026 : 0.058]
I: Prohibition / Ban / T: 25	θ_{65}	0.00867	(0.135)	[-0.25 : 0.3]
I: Prohibition / Ban / T: 26	θ_{90}	-0.0443	(0.0256)	[-0.095 : 0.0073]
I: Prohibition / Ban / T: 27	θ_{78}	-0.0263	(0.0218)	[-0.072 : 0.014]
I: Prohibition / Ban / T: 28	θ_{68}	-0.016	(0.125)	[-0.31 : 0.21]
I: Prohibition / Ban / T: 29	θ_{54}	-0.0138	(0.0471)	[-0.1 : 0.079]
I: Prohibition / Ban / T: 3	θ_{46}	0.00698	(0.136)	[-0.27 : 0.3]
I: Prohibition / Ban / T: 30	θ_{52}	-0.00155	(0.141)	[-0.31 : 0.29]
I: Prohibition / Ban / T: 31	θ_{53}	-0.0218	(0.0973)	[-0.23 : 0.16]
I: Prohibition / Ban / T: 32	θ_{84}	-0.00768	(0.0285)	[-0.064 : 0.049]
I: Prohibition / Ban / T: 33	θ_{71}	0.0126	(0.115)	[-0.21 : 0.27]
I: Prohibition / Ban / T: 34	θ_{62}	0.00377	(0.136)	[-0.28 : 0.29]
I: Prohibition / Ban / T: 35	θ_{72}	-0.00231	(0.0241)	[-0.048 : 0.046]
I: Prohibition / Ban / T: 36	θ_{85}	0.019	(0.0211)	[-0.023 : 0.061]
I: Prohibition / Ban / T: 37	θ_{86}	-0.0211	(0.0254)	[-0.073 : 0.027]
I: Prohibition / Ban / T: 38	θ_{74}	0.0477	(0.0427)	[-0.03 : 0.14]
I: Prohibition / Ban / T: 39	θ_{79}	0.00617	(0.14)	[-0.28 : 0.31]
I: Prohibition / Ban / T: 4	θ_{50}	0.012	(0.0489)	[-0.085 : 0.11]
I: Prohibition / Ban / T: 40	θ_{69}	0.00367	(0.123)	[-0.25 : 0.26]
I: Prohibition / Ban / T: 41	θ_{81}	-0.0477	(0.0897)	[-0.23 : 0.12]
I: Prohibition / Ban / T: 42	θ_{57}	-0.00473	(0.0963)	[-0.2 : 0.19]
I: Prohibition / Ban / T: 43	θ_{55}	0.000695	(0.137)	[-0.29 : 0.28]
I: Prohibition / Ban / T: 44	θ_{56}	-0.000526	(0.098)	[-0.2 : 0.2]
I: Prohibition / Ban / T: 45	θ_{83}	0.0137	(0.0877)	[-0.16 : 0.19]
I: Prohibition / Ban / T: 46	θ_{70}	0.0053	(0.124)	[-0.25 : 0.26]
I: Prohibition / Ban / T: 5	θ_{49}	0.0948	(0.0609)	[-0.016 : 0.23]
I: Prohibition / Ban / T: 6	θ_{47}	-0.00146	(0.133)	[-0.29 : 0.27]
I: Prohibition / Ban / T: 7	θ_{63}	0.0565	(0.079)	[-0.091 : 0.22]
I: Prohibition / Ban / T: 8	θ_{87}	0.00493	(0.139)	[-0.29 : 0.3]
I: Prohibition / Ban / T: 9	θ_{75}	0.00611	(0.14)	[-0.29 : 0.31]
I: Public investment / T: 1	θ_{234}	-0.0125	(0.13)	[-0.31 : 0.24]
I: Public investment / T: 11	θ_{242}	-0.00319	(0.139)	[-0.31 : 0.28]
I: Public investment / T: 12	θ_{243}	-0.0123	(0.075)	[-0.16 : 0.14]
I: Public investment / T: 13	θ_{244}	-0.00862	(0.131)	[-0.28 : 0.26]
I: Public investment / T: 14	θ_{245}	0.263	(0.129)	[0.028 : 0.53]
I: Public investment / T: 2	θ_{237}	-0.013	(0.131)	[-0.31 : 0.24]
I: Public investment / T: 29	θ_{240}	0.028	(0.0328)	[-0.037 : 0.095]
I: Public investment / T: 3	θ_{232}	-0.00561	(0.0646)	[-0.14 : 0.12]
I: Public investment / T: 30	θ_{238}	-0.00209	(0.136)	[-0.29 : 0.29]
I: Public investment / T: 31	θ_{239}	-0.00468	(0.142)	[-0.3 : 0.3]
I: Public investment / T: 34	θ_{246}	0.0148	(0.0609)	[-0.099 : 0.14]
I: Public investment / T: 4	θ_{236}	-0.0142	(0.133)	[-0.31 : 0.24]
I: Public investment / T: 40	θ_{247}	-0.049	(0.0639)	[-0.19 : 0.067]
I: Public investment / T: 42	θ_{241}	-0.0231	(0.028)	[-0.08 : 0.032]
I: Public investment / T: 5	θ_{235}	-0.0122	(0.133)	[-0.3 : 0.25]
I: Public investment / T: 6	θ_{233}	-0.0129	(0.128)	[-0.3 : 0.23]
I: Subsidy / Tax / T: 11	θ_{176}	-0.0359	(0.0388)	[-0.11 : 0.039]
I: Subsidy / Tax / T: 12	θ_{177}	-0.0021	(0.0204)	[-0.044 : 0.037]
I: Subsidy / Tax / T: 13	θ_{178}	-0.0139	(0.0955)	[-0.22 : 0.17]
I: Subsidy / Tax / T: 14	θ_{179}	0.0256	(0.0689)	[-0.11 : 0.17]
I: Subsidy / Tax / T: 19	θ_{184}	0.00894	(0.13)	[-0.25 : 0.29]
I: Subsidy / Tax / T: 23	θ_{183}	0.00896	(0.133)	[-0.25 : 0.3]
I: Subsidy / Tax / T: 24	θ_{182}	-0.0106	(0.0865)	[-0.19 : 0.16]
I: Subsidy / Tax / T: 26	θ_{192}	0.0222	(0.0854)	[-0.14 : 0.2]
I: Subsidy / Tax / T: 27	θ_{190}	-0.0248	(0.086)	[-0.2 : 0.14]
I: Subsidy / Tax / T: 28	θ_{185}	0.00472	(0.125)	[-0.24 : 0.27]
I: Subsidy / Tax / T: 29	θ_{172}	0.00132	(0.0711)	[-0.14 : 0.14]
I: Subsidy / Tax / T: 3	θ_{167}	-0.0208	(0.0324)	[-0.089 : 0.041]
I: Subsidy / Tax / T: 30	θ_{170}	-0.00968	(0.0303)	[-0.073 : 0.046]
I: Subsidy / Tax / T: 31	θ_{171}	0.00626	(0.0663)	[-0.13 : 0.13]
I: Subsidy / Tax / T: 33	θ_{188}	0.00462	(0.128)	[-0.25 : 0.28]
I: Subsidy / Tax / T: 34	θ_{180}	0.00138	(0.084)	[-0.17 : 0.17]
I: Subsidy / Tax / T: 35	θ_{189}	0.00666	(0.129)	[-0.25 : 0.29]
I: Subsidy / Tax / T: 39	θ_{191}	-0.0206	(0.0867)	[-0.2 : 0.15]

I: Subsidy / Tax / T: 40	θ_{186}	0.00452	(0.131)	[-0.27 : 0.27]
I: Subsidy / Tax / T: 42	θ_{175}	0.0302	(0.0642)	[-0.096 : 0.16]
I: Subsidy / Tax / T: 43	θ_{173}	0.00107	(0.0845)	[-0.17 : 0.16]
I: Subsidy / Tax / T: 44	θ_{174}	-0.0109	(0.0923)	[-0.21 : 0.17]
I: Subsidy / Tax / T: 46	θ_{187}	0.00527	(0.131)	[-0.26 : 0.3]
I: Subsidy / Tax / T: 5	θ_{169}	0.0167	(0.0828)	[-0.14 : 0.19]
I: Subsidy / Tax / T: 6	θ_{168}	0.0133	(0.0825)	[-0.15 : 0.17]
I: Subsidy / Tax / T: 7	θ_{181}	-0.00315	(0.139)	[-0.3 : 0.29]
I: Tax / Levy / T: 10	θ_{165}	0.0143	(0.0266)	[-0.039 : 0.066]
I: Tax / Levy / T: 11	θ_{144}	0.0181	(0.0264)	[-0.035 : 0.07]
I: Tax / Levy / T: 12	θ_{145}	-0.0238	(0.032)	[-0.089 : 0.038]
I: Tax / Levy / T: 14	θ_{146}	0.00354	(0.138)	[-0.28 : 0.3]
I: Tax / Levy / T: 15	θ_{155}	0.0136	(0.135)	[-0.24 : 0.33]
I: Tax / Levy / T: 16	θ_{164}	0.0124	(0.14)	[-0.25 : 0.34]
I: Tax / Levy / T: 17	θ_{162}	0.0112	(0.133)	[-0.25 : 0.31]
I: Tax / Levy / T: 18	θ_{152}	0.0307	(0.145)	[-0.22 : 0.4]
I: Tax / Levy / T: 21	θ_{157}	0.0289	(0.151)	[-0.24 : 0.41]
I: Tax / Levy / T: 22	θ_{151}	0.0301	(0.142)	[-0.22 : 0.4]
I: Tax / Levy / T: 24	θ_{149}	-0.00196	(0.139)	[-0.31 : 0.28]
I: Tax / Levy / T: 25	θ_{150}	0.00467	(0.137)	[-0.27 : 0.3]
I: Tax / Levy / T: 26	θ_{166}	0.00252	(0.141)	[-0.28 : 0.32]
I: Tax / Levy / T: 27	θ_{153}	0.0151	(0.143)	[-0.27 : 0.34]
I: Tax / Levy / T: 29	θ_{140}	-0.0523	(0.0312)	[-0.11 : 0.012]
I: Tax / Levy / T: 3	θ_{136}	-0.0686	(0.0431)	[-0.16 : 0.014]
I: Tax / Levy / T: 30	θ_{138}	-0.00324	(0.0435)	[-0.087 : 0.084]
I: Tax / Levy / T: 31	θ_{139}	-0.00312	(0.134)	[-0.29 : 0.28]
I: Tax / Levy / T: 32	θ_{159}	0.0297	(0.141)	[-0.22 : 0.38]
I: Tax / Levy / T: 34	θ_{147}	0.014	(0.14)	[-0.26 : 0.33]
I: Tax / Levy / T: 36	θ_{160}	-0.0316	(0.0785)	[-0.19 : 0.12]
I: Tax / Levy / T: 37	θ_{161}	0.0248	(0.144)	[-0.23 : 0.37]
I: Tax / Levy / T: 39	θ_{154}	0.0118	(0.138)	[-0.26 : 0.33]
I: Tax / Levy / T: 4	θ_{137}	0.025	(0.0658)	[-0.1 : 0.16]
I: Tax / Levy / T: 41	θ_{156}	0.0132	(0.139)	[-0.25 : 0.34]
I: Tax / Levy / T: 42	θ_{143}	0.00256	(0.133)	[-0.27 : 0.29]
I: Tax / Levy / T: 43	θ_{141}	0.0222	(0.14)	[-0.26 : 0.35]
I: Tax / Levy / T: 44	θ_{142}	-0.00715	(0.139)	[-0.3 : 0.27]
I: Tax / Levy / T: 45	θ_{158}	0.029	(0.145)	[-0.22 : 0.39]
I: Tax / Levy / T: 7	θ_{148}	-0.0179	(0.0224)	[-0.059 : 0.03]
I: Tax / Levy / T: 8	θ_{163}	0.0252	(0.139)	[-0.22 : 0.37]
I: Technological prescription / T: 1	θ_{93}	0.0073	(0.0923)	[-0.17 : 0.2]
I: Technological prescription / T: 10	θ_{134}	-0.0288	(0.0519)	[-0.13 : 0.07]
I: Technological prescription / T: 11	θ_{103}	-0.0225	(0.0227)	[-0.066 : 0.024]
I: Technological prescription / T: 12	θ_{104}	0.0172	(0.133)	[-0.24 : 0.33]
I: Technological prescription / T: 13	θ_{105}	-0.00151	(0.0912)	[-0.19 : 0.18]
I: Technological prescription / T: 14	θ_{106}	0.0566	(0.108)	[-0.12 : 0.32]
I: Technological prescription / T: 15	θ_{124}	0.00417	(0.109)	[-0.21 : 0.24]
I: Technological prescription / T: 16	θ_{133}	0.0105	(0.099)	[-0.18 : 0.21]
I: Technological prescription / T: 17	θ_{131}	0.00556	(0.109)	[-0.21 : 0.23]
I: Technological prescription / T: 18	θ_{121}	0.00705	(0.101)	[-0.19 : 0.22]
I: Technological prescription / T: 19	θ_{111}	-0.00677	(0.126)	[-0.28 : 0.24]
I: Technological prescription / T: 2	θ_{96}	-0.000315	(0.115)	[-0.23 : 0.24]
I: Technological prescription / T: 20	θ_{117}	-0.0111	(0.121)	[-0.27 : 0.22]
I: Technological prescription / T: 21	θ_{126}	0.00187	(0.0876)	[-0.18 : 0.17]
I: Technological prescription / T: 22	θ_{120}	-0.0481	(0.0259)	[-0.098 : 0.0033]
I: Technological prescription / T: 23	θ_{110}	0.0557	(0.0774)	[-0.084 : 0.22]
I: Technological prescription / T: 25	θ_{109}	-0.00508	(0.0766)	[-0.15 : 0.15]
I: Technological prescription / T: 26	θ_{135}	-0.0429	(0.0788)	[-0.21 : 0.1]
I: Technological prescription / T: 27	θ_{122}	0.0219	(0.112)	[-0.18 : 0.27]
I: Technological prescription / T: 28	θ_{112}	0.0155	(0.0737)	[-0.13 : 0.17]
I: Technological prescription / T: 29	θ_{99}	0.0263	(0.0706)	[-0.11 : 0.17]
I: Technological prescription / T: 3	θ_{91}	0.0107	(0.112)	[-0.21 : 0.25]
I: Technological prescription / T: 30	θ_{97}	-0.0282	(0.0836)	[-0.2 : 0.13]
I: Technological prescription / T: 31	θ_{98}	0.0104	(0.082)	[-0.15 : 0.18]
I: Technological prescription / T: 32	θ_{128}	0.00167	(0.107)	[-0.22 : 0.22]
I: Technological prescription / T: 33	θ_{115}	0.00149	(0.121)	[-0.25 : 0.25]
I: Technological prescription / T: 34	θ_{107}	0.019	(0.0514)	[-0.084 : 0.12]

I: Technological prescription / T: 35	θ_{116}	-0.00885	(0.119)	[-0.26 : 0.23]
I: Technological prescription / T: 36	θ_{129}	0.00407	(0.0894)	[-0.18 : 0.18]
I: Technological prescription / T: 37	θ_{130}	0.0176	(0.11)	[-0.18 : 0.26]
I: Technological prescription / T: 38	θ_{118}	-0.00739	(0.12)	[-0.27 : 0.23]
I: Technological prescription / T: 39	θ_{123}	0.0208	(0.115)	[-0.2 : 0.27]
I: Technological prescription / T: 4	θ_{95}	0.00882	(0.114)	[-0.21 : 0.25]
I: Technological prescription / T: 40	θ_{113}	0.00341	(0.119)	[-0.24 : 0.25]
I: Technological prescription / T: 41	θ_{125}	-0.0116	(0.0895)	[-0.19 : 0.17]
I: Technological prescription / T: 42	θ_{102}	0.0139	(0.0705)	[-0.13 : 0.15]
I: Technological prescription / T: 43	θ_{100}	-0.0277	(0.0848)	[-0.2 : 0.14]
I: Technological prescription / T: 44	θ_{101}	-0.0176	(0.0969)	[-0.23 : 0.16]
I: Technological prescription / T: 45	θ_{127}	0.0061	(0.1)	[-0.2 : 0.21]
I: Technological prescription / T: 46	θ_{114}	-0.0183	(0.0733)	[-0.17 : 0.13]
I: Technological prescription / T: 5	θ_{94}	0.00338	(0.116)	[-0.23 : 0.24]
I: Technological prescription / T: 6	θ_{92}	0.00244	(0.115)	[-0.23 : 0.24]
I: Technological prescription / T: 7	θ_{108}	0.0121	(0.0222)	[-0.032 : 0.055]
I: Technological prescription / T: 8	θ_{132}	0.0154	(0.0992)	[-0.17 : 0.23]
I: Technological prescription / T: 9	θ_{119}	-0.0526	(0.0891)	[-0.24 : 0.11]
I: Voluntary instruments / T: 10	θ_{305}	0.00232	(0.139)	[-0.29 : 0.3]
I: Voluntary instruments / T: 11	θ_{302}	-0.0388	(0.0325)	[-0.1 : 0.027]
I: Voluntary instruments / T: 12	θ_{303}	-0.0107	(0.0801)	[-0.17 : 0.15]
I: Voluntary instruments / T: 2	θ_{295}	0.0113	(0.0647)	[-0.12 : 0.14]
I: Voluntary instruments / T: 27	θ_{304}	-0.000868	(0.133)	[-0.27 : 0.28]
I: Voluntary instruments / T: 29	θ_{298}	0.0051	(0.116)	[-0.25 : 0.24]
I: Voluntary instruments / T: 3	θ_{291}	0.0271	(0.0706)	[-0.11 : 0.18]
I: Voluntary instruments / T: 30	θ_{296}	-0.012	(0.0415)	[-0.095 : 0.069]
I: Voluntary instruments / T: 31	θ_{297}	0.00601	(0.113)	[-0.22 : 0.24]
I: Voluntary instruments / T: 4	θ_{294}	0.0212	(0.0247)	[-0.03 : 0.068]
I: Voluntary instruments / T: 42	θ_{301}	0.0049	(0.114)	[-0.24 : 0.23]
I: Voluntary instruments / T: 43	θ_{299}	0.0047	(0.113)	[-0.22 : 0.24]
I: Voluntary instruments / T: 44	θ_{300}	0.000853	(0.114)	[-0.23 : 0.24]
I: Voluntary instruments / T: 5	θ_{293}	-0.0104	(0.087)	[-0.19 : 0.16]
I: Voluntary instruments / T: 6	θ_{292}	-0.0109	(0.0879)	[-0.19 : 0.16]

Table 3: Evidence of positive and/or negative effects, averaged by Instrument.

Instrument	Evidence CAPE>0	Evidence CAPE<0
Public investment	0.8024	0.5796
Information-based instruments	0.7040	0.6541
Obligatory standards	0.6999	0.7894
Prohibition / Ban	0.6114	0.6595
Liability scheme	0.5955	0.6155
Permits	0.5860	0.6803
Tax / Levy	0.5846	0.6919
Voluntary instruments	0.5716	0.6117
Technological prescription	0.5705	0.6295
Tax reduction / Subsidy	0.5524	0.6200

Table 4: Varying intercepts by countries (δ)

Variable	Parameter	Coefficient	SD	95% CI
Australia	δ_1	0.319	(0.448)	[-0.55 : 1.2]
Austria	δ_2	0.0163	(0.391)	[-0.75 : 0.79]
Belgium	δ_3	-0.11	(0.54)	[-1.2 : 0.95]
Canada	δ_4	0.104	(0.398)	[-0.67 : 0.9]
Denmark	δ_5	0.271	(0.464)	[-0.64 : 1.2]
Finland	δ_6	0.213	(0.377)	[-0.54 : 0.95]
France	δ_7	0.193	(0.474)	[-0.73 : 1.1]
Germany	δ_8	0.751	(0.563)	[-0.39 : 1.9]
Greece	δ_9	-1.24	(0.411)	[-2 : -0.43]
Ireland	δ_{10}	-0.398	(0.429)	[-1.3 : 0.42]
Italy	δ_{11}	-0.245	(0.496)	[-1.3 : 0.71]

Japan	δ_{12}	1.06	(0.476)	[0.12 : 2]
Mexico	δ_{13}	-1.32	(0.399)	[-2.1 : -0.55]
Netherlands	δ_{14}	0.215	(0.404)	[-0.57 : 1]
New Zealand	δ_{15}	0.023	(0.415)	[-0.79 : 0.85]
Norway	δ_{16}	-0.509	(0.393)	[-1.3 : 0.25]
Portugal	δ_{17}	-1.4	(0.423)	[-2.2 : -0.55]
Spain	δ_{18}	-0.403	(0.321)	[-1 : 0.23]
Sweden	δ_{19}	0.454	(0.407)	[-0.36 : 1.3]
Switzerland	δ_{20}	0.182	(0.53)	[-0.84 : 1.2]
Turkey	δ_{21}	-1.12	(0.397)	[-1.9 : -0.35]
United Kingdom	δ_{22}	0.524	(0.415)	[-0.27 : 1.3]
United States	δ_{23}	1.41	(0.533)	[0.3 : 2.4]

Table 5: Clustered errors by countries (σ)

Variable	Parameter	Coefficient	SD	95% CI
Australia	σ_1	0.0437	(0.0118)	[0.027 : 0.073]
Austria	σ_2	0.019	(0.00649)	[0.0085 : 0.034]
Belgium	σ_3	0.0181	(0.00525)	[0.01 : 0.031]
Canada	σ_4	0.0377	(0.0098)	[0.025 : 0.063]
Denmark	σ_5	0.0193	(0.00822)	[0.009 : 0.041]
Finland	σ_6	0.0147	(0.00484)	[0.0079 : 0.027]
France	σ_7	0.0186	(0.00636)	[0.011 : 0.035]
Germany	σ_8	0.0173	(0.00536)	[0.0096 : 0.03]
Greece	σ_9	0.065	(0.0154)	[0.043 : 0.1]
Ireland	σ_{10}	0.0507	(0.0131)	[0.031 : 0.082]
Italy	σ_{11}	0.0182	(0.00572)	[0.01 : 0.032]
Japan	σ_{12}	0.0733	(0.0146)	[0.053 : 0.11]
Mexico	σ_{13}	0.0969	(0.0185)	[0.071 : 0.14]
Netherlands	σ_{14}	0.0254	(0.00757)	[0.015 : 0.044]
New Zealand	σ_{15}	0.0669	(0.0142)	[0.047 : 0.1]
Norway	σ_{16}	0.037	(0.00878)	[0.024 : 0.058]
Portugal	σ_{17}	0.117	(0.0246)	[0.081 : 0.18]
Spain	σ_{18}	0.0299	(0.00841)	[0.019 : 0.051]
Sweden	σ_{19}	0.0298	(0.00855)	[0.018 : 0.051]
Switzerland	σ_{20}	0.0187	(0.00623)	[0.01 : 0.034]
Turkey	σ_{21}	0.136	(0.0314)	[0.094 : 0.22]
United Kingdom	σ_{22}	0.0165	(0.00447)	[0.01 : 0.028]
United States	σ_{23}	0.07	(0.0127)	[0.051 : 0.1]

Table 6: Auto-regressive components by countries (σ)

Variable	Parameter	Coefficient	SD	95% CI
Australia	ρ_1	0.672	(0.225)	[0.14 : 0.98]
Austria	ρ_2	0.112	(0.331)	[-0.61 : 0.7]
Belgium	ρ_3	0.6	(0.337)	[-0.26 : 0.98]
Canada	ρ_4	0.7	(0.274)	[-0.031 : 0.98]
Denmark	ρ_5	0.195	(0.499)	[-0.8 : 0.95]
Finland	ρ_6	-0.209	(0.372)	[-0.86 : 0.49]
France	ρ_7	0.663	(0.293)	[-0.091 : 0.99]
Germany	ρ_8	0.522	(0.383)	[-0.45 : 0.98]
Greece	ρ_9	0.383	(0.264)	[-0.17 : 0.88]
Ireland	ρ_{10}	0.443	(0.379)	[-0.57 : 0.95]
Italy	ρ_{11}	0.698	(0.247)	[0.068 : 0.99]
Japan	ρ_{12}	0.826	(0.17)	[0.36 : 0.99]
Mexico	ρ_{13}	0.608	(0.192)	[0.18 : 0.94]
Netherlands	ρ_{14}	0.266	(0.532)	[-0.83 : 0.97]
New Zealand	ρ_{15}	0.503	(0.189)	[0.084 : 0.83]
Norway	ρ_{16}	0.234	(0.329)	[-0.68 : 0.66]
Portugal	ρ_{17}	0.385	(0.19)	[0.0032 : 0.76]
Spain	ρ_{18}	0.763	(0.324)	[-0.26 : 0.99]
Sweden	ρ_{19}	0.488	(0.312)	[-0.28 : 0.96]
Switzerland	ρ_{20}	0.0703	(0.396)	[-0.75 : 0.77]

Turkey	ρ_{21}	0.647	(0.165)	[0.28 : 0.94]
United Kingdom	ρ_{22}	0.569	(0.366)	[-0.4 : 0.98]
United States	ρ_{23}	0.525	(0.284)	[-0.15 : 0.93]

Table 7: Varying intercepts by year (γ)

Variable	Parameter	Coefficient	SD	95% CI
2000	γ_1	-0.485	(0.197)	[-0.85 : -0.089]
2001	γ_2	-0.396	(0.197)	[-0.76 : 0.0016]
2002	γ_3	-0.197	(0.197)	[-0.56 : 0.2]
2003	γ_4	-0.165	(0.197)	[-0.53 : 0.23]
2004	γ_5	-0.131	(0.196)	[-0.5 : 0.26]
2005	γ_6	-0.0607	(0.196)	[-0.42 : 0.34]
2006	γ_7	0.00998	(0.195)	[-0.35 : 0.4]
2007	γ_8	-0.0236	(0.195)	[-0.39 : 0.37]
2008	γ_9	-0.00959	(0.195)	[-0.37 : 0.38]
2009	γ_{10}	0.0354	(0.195)	[-0.33 : 0.43]
2010	γ_{11}	-0.00637	(0.195)	[-0.37 : 0.38]
2011	γ_{12}	-0.00368	(0.195)	[-0.37 : 0.38]
2012	γ_{13}	0.0216	(0.195)	[-0.34 : 0.41]
2013	γ_{14}	0.0454	(0.195)	[-0.32 : 0.43]
2014	γ_{15}	0.0467	(0.195)	[-0.32 : 0.43]
2015	γ_{16}	0.0578	(0.195)	[-0.31 : 0.44]
2016	γ_{17}	0.0606	(0.195)	[-0.31 : 0.45]
2017	γ_{18}	0.0658	(0.195)	[-0.3 : 0.45]
2018	γ_{19}	0.0722	(0.195)	[-0.3 : 0.46]
2019	γ_{20}	0.0747	(0.195)	[-0.29 : 0.46]
2020	γ_{21}	0.0454	(0.195)	[-0.32 : 0.43]
2021	γ_{22}	-0.242	(0.195)	[-0.61 : 0.15]

Table 8: Covariates, control variables (β)

Variable	Parameter	Coefficient	SD	95% CI
GDPpc (log)	β_8	0.188	(0.121)	[-0.047 : 0.42]
Industry share	β_5	0.0134	(0.0212)	[-0.028 : 0.055]
Labor cost index	β_4	0.000635	(0.0134)	[-0.026 : 0.026]
Population (log)	β_9	0.625	(0.35)	[-0.062 : 1.3]
Share big firms	β_6	-0.00571	(0.0107)	[-0.027 : 0.015]
Size	β_7	0.288	(0.314)	[-0.31 : 0.91]
Tax revenue	β_3	0.0455	(0.0411)	[-0.035 : 0.13]
Tertiary enrollment	β_2	0.053	(0.045)	[-0.037 : 0.14]
Trade openess	β_1	0.018	(0.0453)	[-0.071 : 0.11]

C Other model specifications: Robustness

Table 9: Proportion of effects observed with a certain degrees of evidence (95 percent), for each model.

Model	PropCI.05
Frequentist	0.458
Frequentist (False Discovery Rate)	0.378
Frequentist (Bonferroni)	0.190
CEPP approach	0.045
CEPP approach ('Placebo'/Homicide Rate)	0.021
CEPP Propensity scores	0.015
CEPP Propensity scores ('Placebo'/Homicide Rate)	0.003

C.1 Premium for leaders

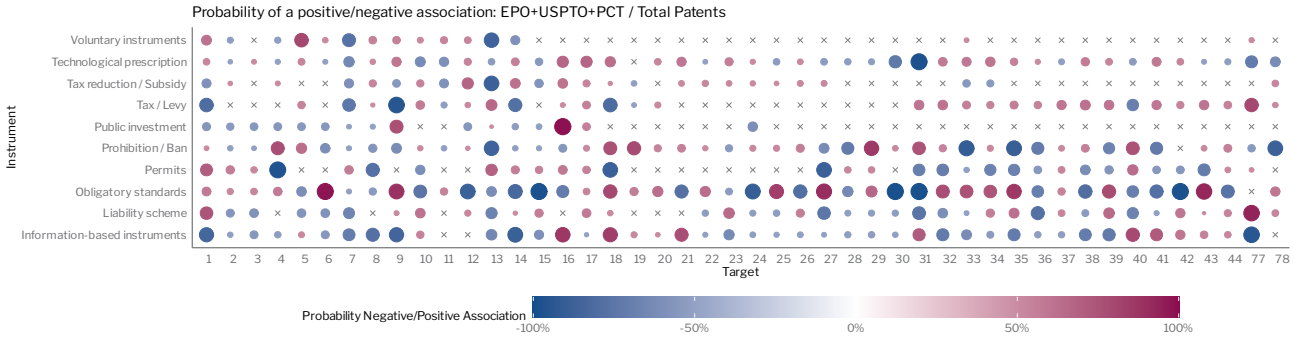

Figure 6: Probability of an association in a model including a premium for leaders.

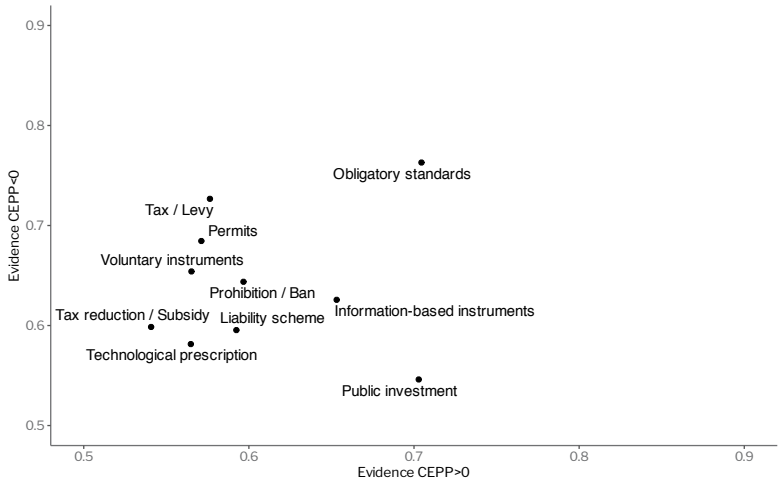

Figure 7: Evidence of positive and/or negative association, averaged by Instrument, in a model including a premium for leaders.

Table 10: Evidence of positive and/or negative effects, averaged by Instrument.

Instrument	Evidence CAPE>0	Evidence CAPE<0
Obligatory standards	0.7045	0.7630
Public investment	0.7029	0.5461
Information-based instruments	0.6532	0.6257
Prohibition / Ban	0.5967	0.6438
Liability scheme	0.5924	0.5954
Tax / Levy	0.5764	0.7267
Permits	0.5712	0.6845
Voluntary instruments	0.5652	0.6541
Technological prescription	0.5648	0.5814
Tax reduction / Subsidy	0.5408	0.5986

C.2 Propensity score matches

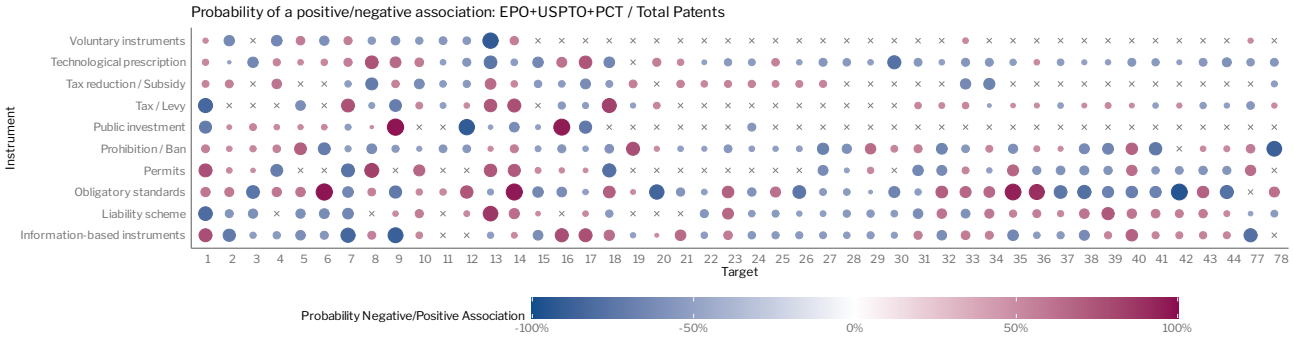

Figure 8: Probability of an association in a model including a control for propensity score matches.

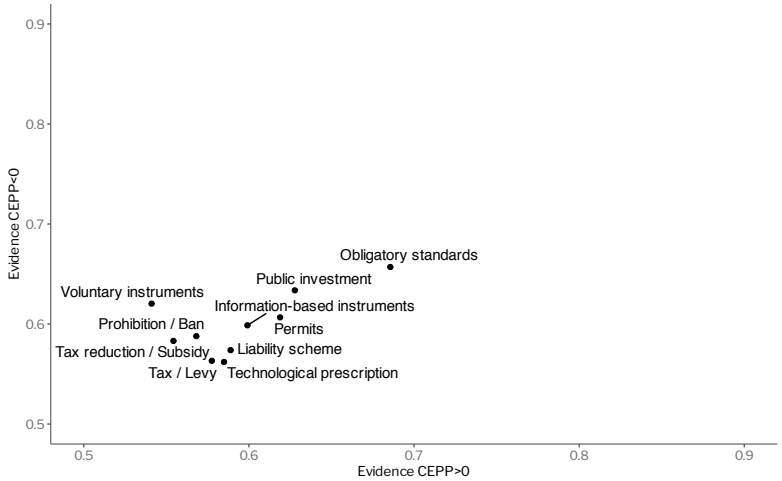

Figure 9: Evidence of positive and/or negative associations, averaged by Instrument, in a model including a control for propensity score matches.

Table 11: Evidence of positive and/or negative effects, averaged by Instrument.

Instrument	Evidence CAPE>0	Evidence CAPE<0
Obligatory standards	0.6856	0.6570
Public investment	0.6278	0.6337
Permits	0.6189	0.6066
Information-based instruments	0.5991	0.5987
Liability scheme	0.5889	0.5739
Technological prescription	0.5849	0.5621
Tax / Levy	0.5775	0.5632
Prohibition / Ban	0.5682	0.5879
Tax reduction / Subsidy	0.5543	0.5831
Voluntary instruments	0.5411	0.6204

C.3 Unconditional specification

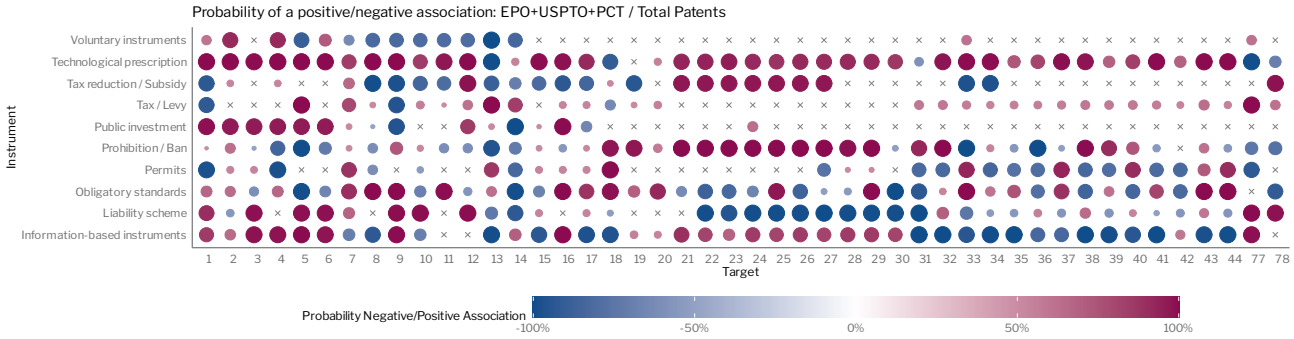

Figure 10: Probability of an association in a set of unconditional models.

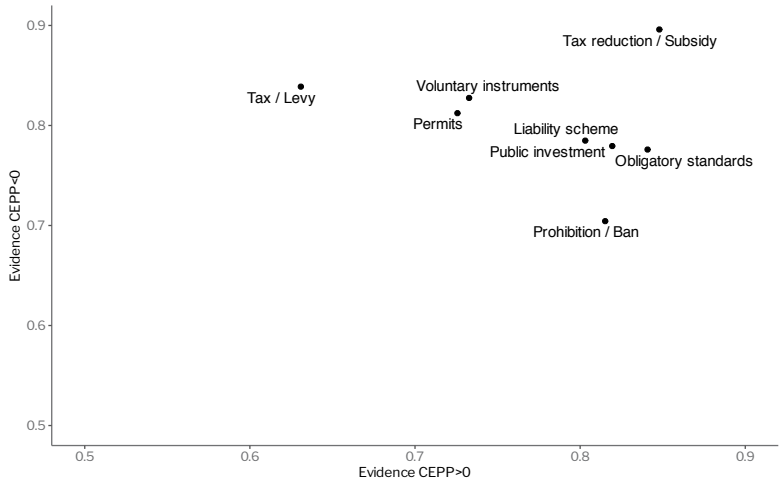

Figure 11: Evidence of positive and/or negative associations, averaged by Instrument, in a set of unconditional models.

Table 12: Evidence of positive and/or negative effects, averaged by Instrument.

Instrument	Evidence CAPE>0	Evidence CAPE<0
Technological prescription	0.9136	0.8370
Tax reduction / Subsidy	0.8480	0.8960
Obligatory standards	0.8408	0.7760
Information-based instruments	0.8312	0.9363
Public investment	0.8194	0.7794
Prohibition / Ban	0.8152	0.7043
Liability scheme	0.8031	0.7849
Voluntary instruments	0.7328	0.8275
Permits	0.7257	0.8123
Tax / Levy	0.6309	0.8388

C.4 Policy stringency

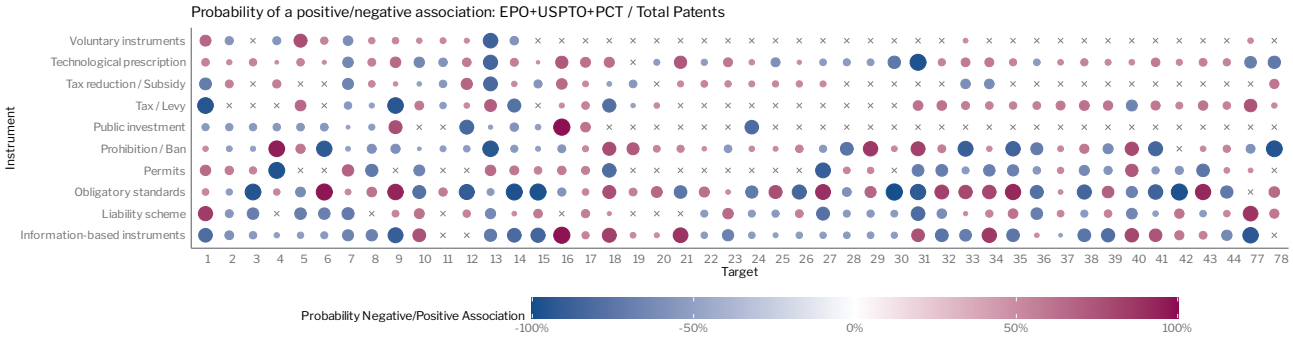

Figure 12: Probability of an association in a model including a control for policy stringency.

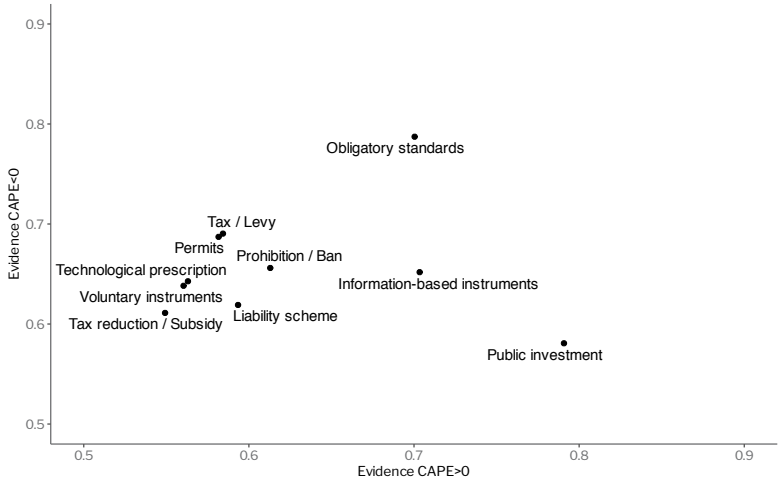

Figure 13: Evidence of positive and/or negative associations, averaged by Instrument, in a model including a control for policy stringency.

Table 13: Evidence of positive and/or negative effects, averaged by Instrument.

Instrument	Evidence CAPE>0	Evidence CAPE<0
Public investment	0.7908	0.5808
Information-based instruments	0.7034	0.6518
Obligatory standards	0.7004	0.7873
Prohibition / Ban	0.6129	0.6560
Liability scheme	0.5934	0.6191
Tax / Levy	0.5843	0.6904
Permits	0.5816	0.6871
Technological prescription	0.5631	0.6427
Voluntary instruments	0.5604	0.6382
Tax reduction / Subsidy	0.5492	0.6111

C.5 Moderated effect by economic wealth

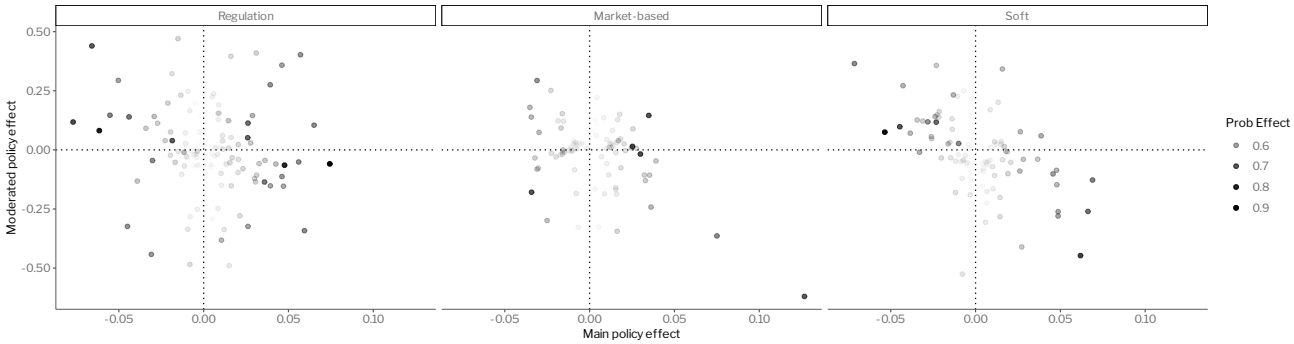

Figure 14: Probability of an association in a model including a mediated effect by wealth (GDPpc).

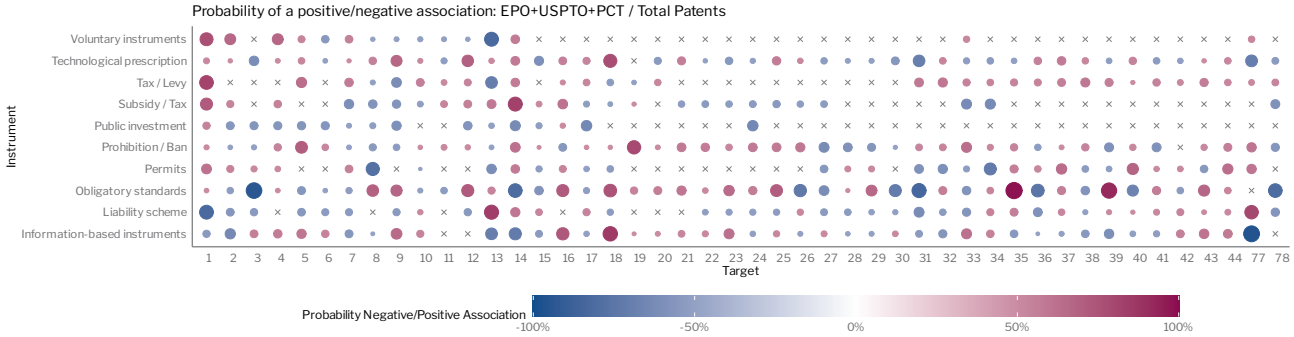

Figure 15: Probability of an association in a model including a mediated effect by wealth (GDPpc).

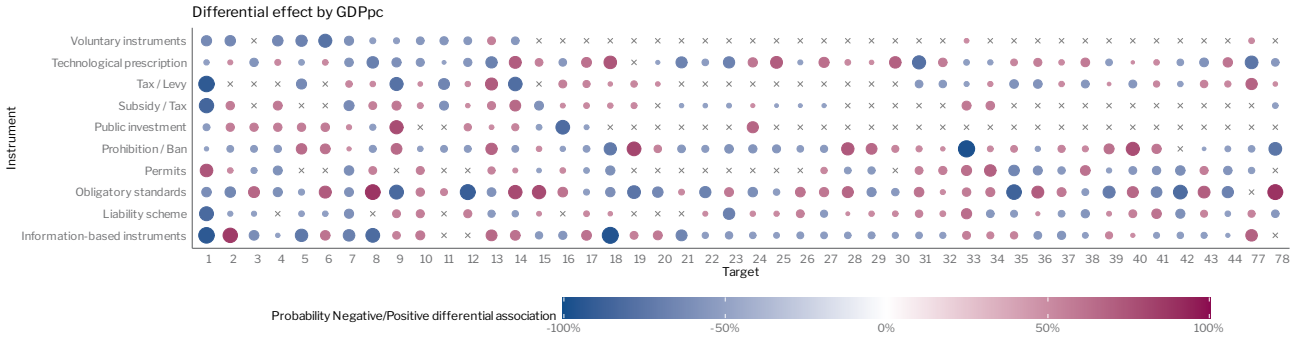

Figure 16: Coefficients of the differential effect by wealth of policies most likely to have an impact.

Table 14: Evidence of positive and/or negative effects, averaged by Instrument.

Instrument	Evidence CAPE>0	Evidence CAPE<0
Obligatory standards	0.6306	0.6420
Voluntary instruments	0.6028	0.5587
Subsidy / Tax	0.5952	0.5546
Information-based instruments	0.5831	0.5715
Liability scheme	0.5673	0.5541
Permits	0.5640	0.5743
Tax / Levy	0.5603	0.5730
Prohibition / Ban	0.5579	0.5469
Technological prescription	0.5570	0.5482
Public investment	0.5282	0.5705

C.6 Evidence and Magnitude

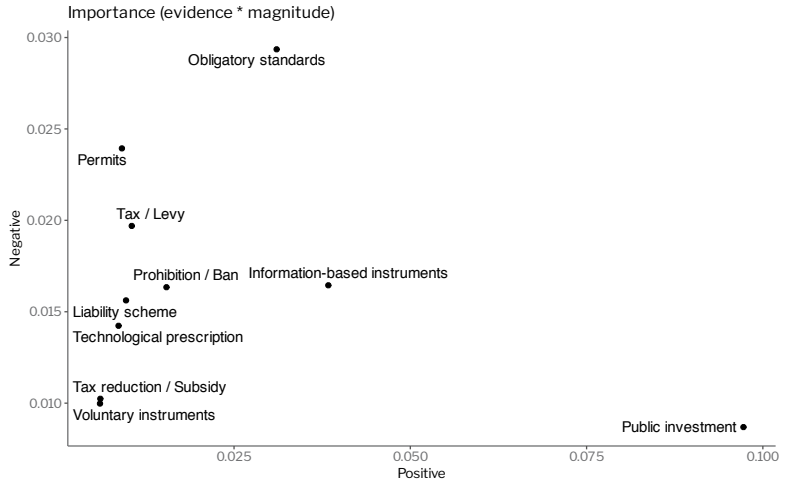

Figure 17: Results in terms of weighted association (evidence * magnitude of the association).

Table 15: Importance (evidence * magnitude of the association).

Instrument	Positive	Negative
Information-based instruments	0.0384	0.0164
Liability scheme	0.0097	0.0156
Obligatory standards	0.0310	0.0294
Permits	0.0091	0.0239
Prohibition / Ban	0.0154	0.0163
Public investment	0.0972	0.0087
Tax / Levy	0.0105	0.0197
Tax reduction / Subsidy	0.0060	0.0102
Technological prescription	0.0086	0.0142
Voluntary instruments	0.0060	0.0100

D Convergence

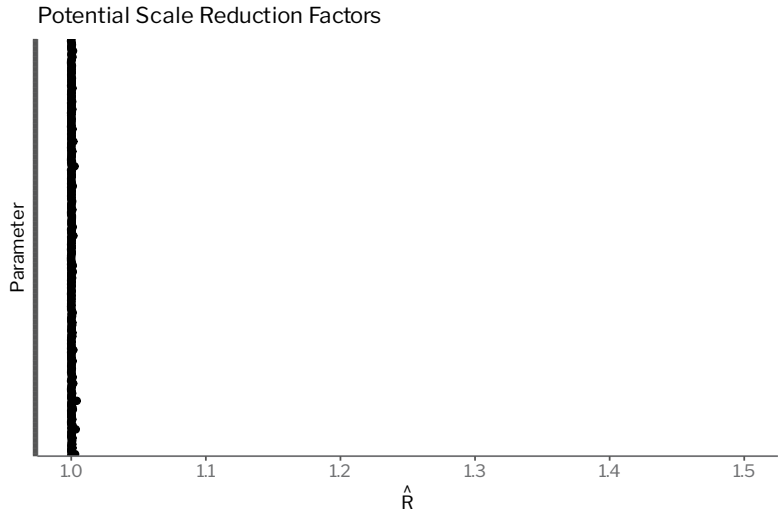

Figure 18: Potential Scale Reduction Factors ($\hat{R}$) for the main parameters of interest (θ).

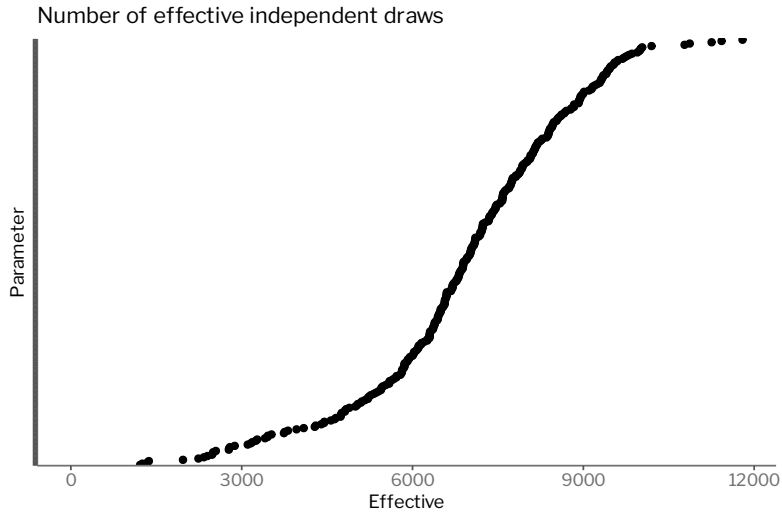

Figure 19: Number of effective independent draws (effective sample size) for the main parameters of interest (θ).