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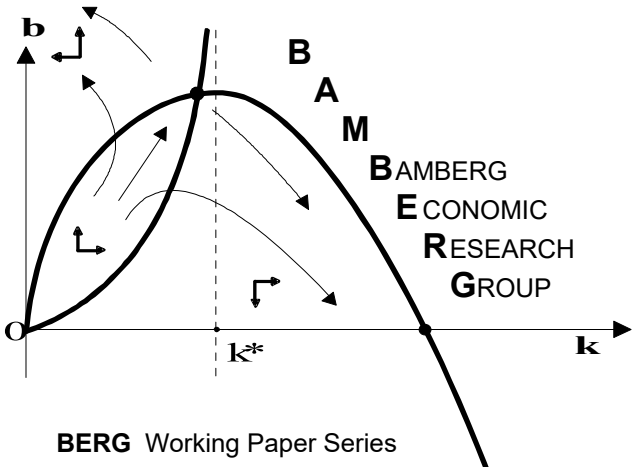

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The paradox of climate policy diffusion

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Abstract

Prior research produced contradicting evidence regarding the role of international influence in the diffusion of climate policies. To unravel this puzzle, we examine various policy instruments adopted by G20 countries, demonstrating that peer pressure stimulates convergence in the number of new policies adopted but divergence in their stringency. This suggests that policymakers emulate the appearance of their peers but not the rigor of regulation, creating opportunities for carbon leakage.

Keywords: climate change, market instruments, policy adoption, variance decomposition, spatial model
JEL Codes: C21, F18, F42, F64, Q56

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The role of conspicuous peer behaviour in individual decision-making has long been recognised. It is often attributed to descriptive norms that signal socially "correct" behavior[1]. Empirical studies confirmed its relevance for resource conservation[2], adoption of solar panels[3], and greenhouse gas mitigation practices[4], among others.

In a similar vein, peer pressure might influence countries to adopt certain climate policies[5]. In this context, the term "peer" can be defined on the basis of geographical, political or economic proximity between countries[6,7]. In addition to behavioural explanations such as coercion, emulation and learning, this peer pressure can also have an economic interpretation such as *cooperation* through international agreements or *competition* to attract foreign firms[8]. While cooperation leads to more harmonised climate policy, competition may undermine such efforts since companies can outsource their carbon intensive production to jurisdictions with laxer regulation, leading to carbon leakage. Empirical studies suggest that carbon leakage is likely to occur in the wake of non-harmonized climate policies both in the case of the Kyoto Protocol[9] and the Paris Agreement[10].

Empirical evidence on the role of peer pressure in stimulating adoption of climate policies is contradictory. Prior literature identified positive and significant peer influence in the adoption of environmental taxes[11] and fuel taxes[7] among OECD countries. Using a sample of 152 developed and developing countries, Baldwin et al.[6] found positive peer pressure in the adoption of feed-in tariffs. In contrast, Schaffer and Bernauer[12] found no significant peer influence on the adoption feed-in tariffs in a sample of 38 developed countries. Additionally, there is evidence of negative peer pressure on environmental R&D spending among OECD countries, arguably because countries may prefer to exploit knowledge spillovers rather than compete for technological leadership[13]. This demonstrates that the existing literature on international peer influence on climate policy adoption is rather fragmented, considering different types of policies and distinct samples of countries. Even more importantly, many studies do not consider the stringency of the policy, instead focusing only on the mere fact that a policy instrument was implemented.

We address these gaps by analysing the presence of peer pressure for different types of climate policies among G20 countries over the period 1995-2020. We also examine how the role of peer influence changes over time and across countries, taking into account both the count of new climate policies adopted and the policy stringency. To do so, we employ a spatial regression model, which defines peers based on the strength of economic ties between countries, measured by bilateral trade volumes (see the Methods section for more details). In addition to the peer effect, we include several controls for the quality of governance and democracy, as well as economic development, emissions levels, and inequality. Figure 1 summarizes our findings on the role of peer influence, while Table A1 in the Supplementary Information reports results on the entire regression model.

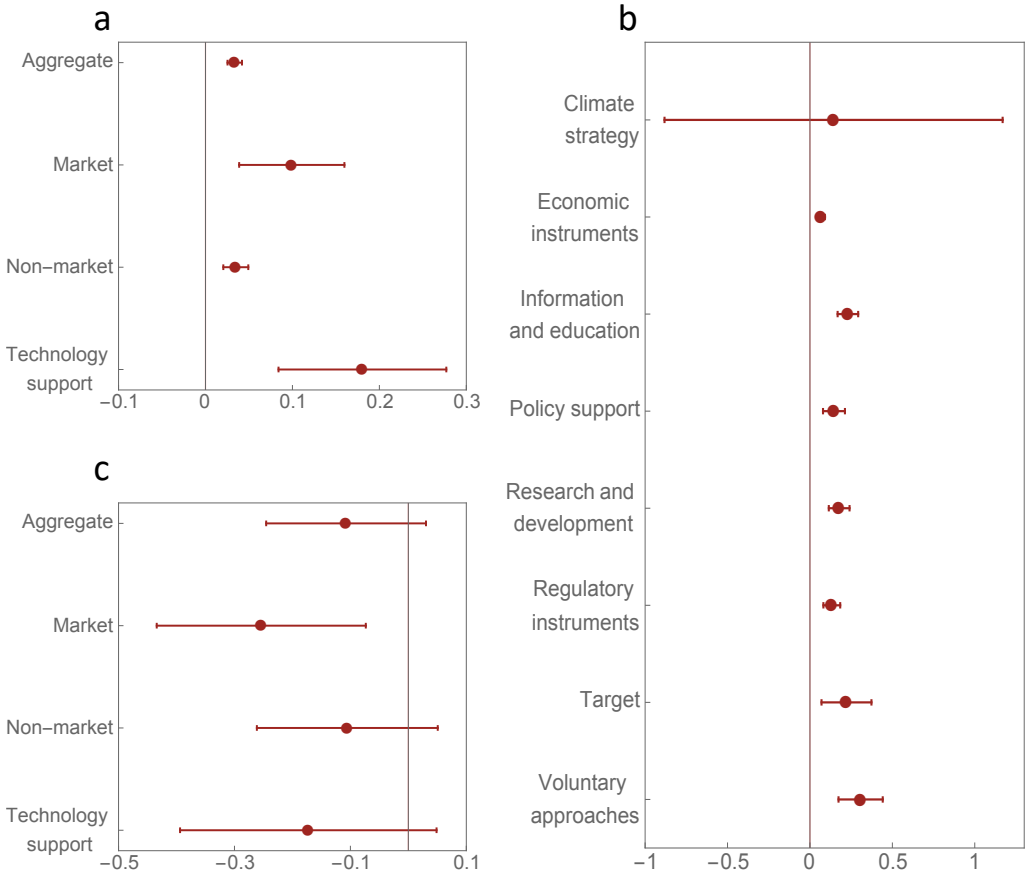

Figure 1: Regression coefficients for the peer effect. **(a)** Total count of policies and categorised by market, non-market and technology support instrument. **(b)** Policy count categorised by type of instrument. **(c)** Total policy stringency and categorised by market, non-market and technology support. Error bars represent ±2 standard errors.

Considering the overall policy count and its categories (see plots a and b in Figure 1 and top panel of Table A1), we find that peer influence is positive and statistically significant for all policy instruments except for climate strategy, which, according to the New Climate Institute, is one of the least popular types of climate policy (see Figure A1 in the Supplementary Information). Remarkably, peer influence is the most consistent factor in explaining the adoption of new policies among all independent variables in our model. Other variables that are often significant are government effectiveness and the Gini index of the income distribution.

The role of international peers changes fundamentally when we consider the Environmental Policy Stringency (EPS) index instead of the policy count (plot c in Figure 1 and bottom panel of Table A1). Our results suggest a significantly negative peer influence on the market-based instruments of EPS, while the aggregate level of EPS and its other two constituent categories (non-market-based instruments and technology support) are not statistically significant. This indicates the presence of regulatory competition concerning the stringency of market-based climate instruments. For example, while countries like Korea, China and the US raised their emission taxes since 2000, other G20 members like Australia, Canada, Mexico and Japan (at least temporarily) lowered the stringency of their market-based instruments (see Figure A6 in the Supplementary Information), thereby increasing opportunities for carbon leakage[14]. Decomposing the explained

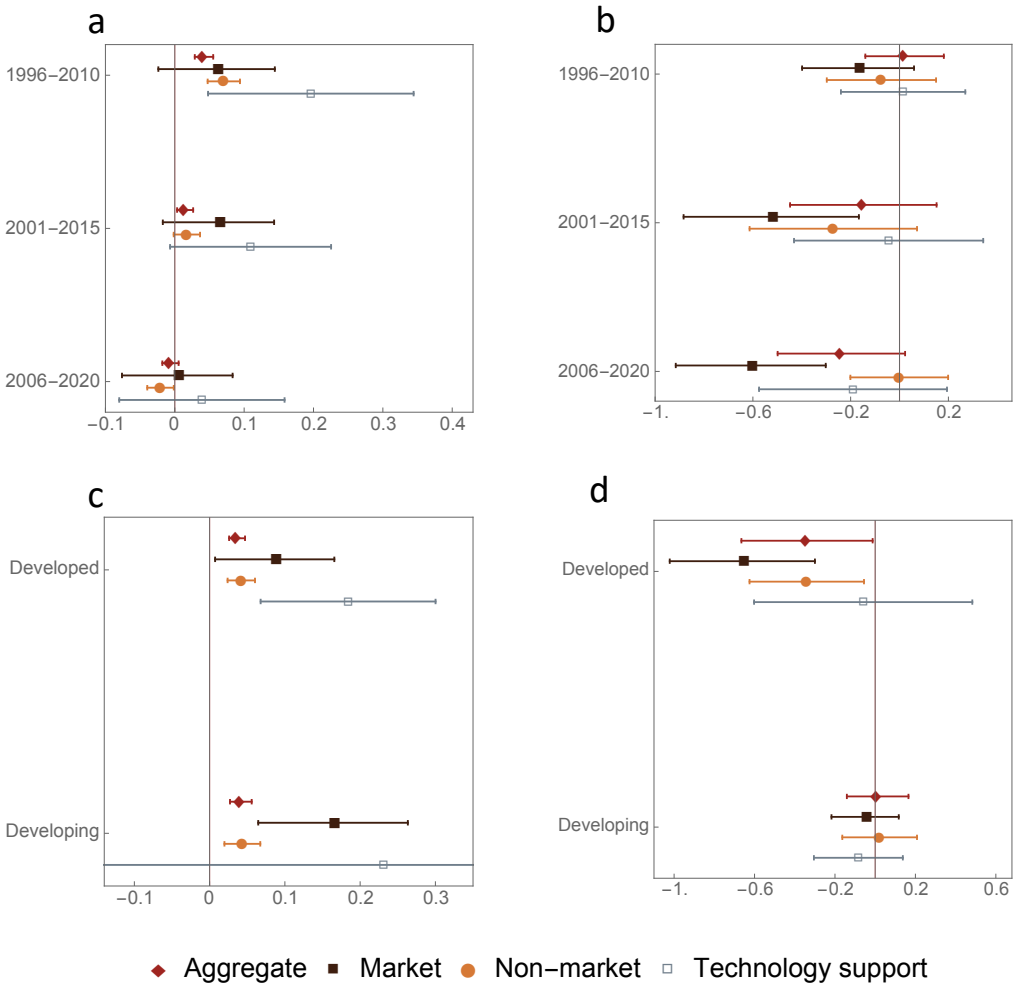

Figure 2: Regression coefficients for the peer effect over a rolling window of 15 years for **(a)** policy count and **(b)** policy stringency. Comparison between the developed vs. developing countries for **(c)** policy count and **(d)** policy stringency. Error bars represent ±2 standard errors.

variance among the variables included in our regression models, we find that peer influence ranks consistently as one of the most important factors in climate policy adoption (Figure A7 in the Supplementary Information).

Considering the growing number of countries signing international agreements on climate change mitigation since the Kyoto Protocol in 2005, we might expect the role of peer influence to change over time, reflecting greater convergence among countries in climate policy adoption. To test this hypothesis, we divide our data into three rolling windows of 15 years each, and re-estimate the models from Table A1. Plots a and b of Figure 2 illustrate that the positive peer influence on the count of new policies tends to vanish over time, while the negative impact of peer pressure on policy stringency becomes more pronounced. Moreover, when testing the peer pressure from G20 countries separately on the developed and the developing countries (plots c and d), we find evidence for a positive peer effect for the count of policies in both groups of countries, but the negative peer effect for policy stringency (here also for non-market instruments and aggregate EPS) is observed only for the developed countries.

Our results thus demonstrate that peer pressure among countries plays a paradoxical role in

the diffusion of climate policies, which depends on the policy measure under consideration, time and the sample of countries. Most notably, we find that countries tend to emulate the quantity of their peers' climate policies, but not the stringency of their implementation. Moreover, our results imply global divergence in the stringency of climate policies because developed countries modify the stringency of their regulation in the opposite direction to changes initiated by their main trading partners. This aligns with the critique that the Paris Agreement lacks sufficient incentives to implement globally harmonized and effective climate policies[15], demonstrating that peer pressure alone is clearly insufficient to effectively mitigate climate change.

Methods

The first climate policy measure considered in this study is the count of new climate policies introduced or enforced within a country in a given year[16]. These data come from the Climate Policy Dataset (CPD) version 2021, developed and maintained by the New Climate Institute with support from the Netherlands Environmental Assessment Agency and Wageningen University. It focuses on climate change mitigation and covers the G20 over the period 1990-2020[17]. One major advantage of this dataset is that it disaggregates policies into nine different types of instruments: (i) barrier removal, (ii) climate strategy, (iii) economic instruments, (iv) information and education, (v) policy support, (vi) regulatory instruments, (vii) research, development and dissemination, (viii) targets, and (ix) voluntary approaches (see Table A2 in the Supplementary Information and Figures A1-A2). Since the category barrier removal has merely 5% non-zero observations (see Figure A1), we omit it from our analysis.

A weakness of the policy count measure is that it lacks information on the stringency of the policy instrument. For this reason, we use the Environmental Policy Stringency (EPS) index from OECD[18,19]. This index is complementary to the policy count measure above, and is designed by assigning scores to the stringency of air pollution and climate change policies, excluding other environmental policies. The EPS score comprises three categories: (i) market-based instruments (e.g., trading schemes and taxes), (ii) non-market-based instruments (e.g., standards), and (iii) technology support policies. Within each category, policies carry equal weight, and the three categories are combined with equal weights to derive the overall EPS score. The aggregate EPS score ranges from 0 to 6. The EPS data are available for all G20 countries, except for Saudi Arabia and Argentina.

To ensure comparability between CPD and EPS data, we also classify CPD policy initiatives into (i) market, (ii) non-market, and (iii) technology support categories. Table A3 in the Supplementary Information provides more information on this categorization. Unlike the policy count variables, EPS data also incorporate information on air pollution policies, which may distort comparability between the two variables. So, we conducted a robustness check by excluding all policies related to air pollution from the EPS index (see Table A5 in the Supplementary Information for details). We then re-estimated our regressions from Table A1 for the affected EPS measures, finding that our results remain robust (Table A8).

Table A6 shows summary statistics of the different policy indicators, while Figure A3 illustrates the evolution of their average values over time. Furthermore, Figure A4 shows the spatial distribution of the average number of new climate policies introduced and the average EPS score

among G20 countries for the period 1995-2020.

Our empirical strategy relies on a spatial panel regression model that incorporates the spatial lag of the respective climate policy initiative as the main explanatory variable. Using this model, we test whether the climate policy count, EPS or their constituent categories for a focal country are influenced by the weighted average of this measure from its trading partners. The weights of the trading partners are based on the total value of exports to and imports from the focal country (see Figure A5 in the Supplementary Information for a visualisation). Data on trade flows are obtained from the BACI database, provided by CEPII, covering the period 1995-2020. Consistent with the existing literature[20], this spatial effect is lagged by one period to better establish a cause-effect relationship. Moreover, we add a time lag of the EPS score on the right-hand side of the policy stringency regression to capture the path-dependency of the EPS measure[11,20]. This reflects that the stringency of climate policy today remains the same as it was last year unless some changes have been implemented. Since the policy count is a discrete variable, we employ the Poisson estimator, while we use the least squares estimator for EPS with country and year fixed effects.

As control variables, we include several governance and institutional characteristics of the countries. The Executive Electoral Competitiveness Index (*Index of democracy*), sourced from the Database of Political Institutions (DPI), serves as a measure of executive power democracy that ranges from 1 to 7. *Political stability* measures the duration of the chief executive's tenure and its potential impact on climate policy implementation. Additionally, we construct two dummy variables based on the DPI's government classification, assigning a value of 1 to *left- or right-wing governments* and 0 otherwise. Also, we consider two variables related to governance: *Control of corruption* and *Governance effectiveness*. Both variables are derived from the World Governance Indicators and are measured on a scale from -2.5 to 2.5. Furthermore, we acknowledge the potential role of economic development and income inequality in policy adoption. Therefore, we include *GDP per capita* and the *Gini index* as controls. These measures are obtained from the World Inequality Database. Finally, we account for emissions-related factors by including GHG *Emissions intensity* relative to GDP as a control, sourced from the EDGAR database (version 8.0). Since our control variables and the EPS score are not available for the EU as a single entity, we omit it from the analysis.

To split the data over time, we use rolling windows of 15 years to maintain a sufficient number of degrees of freedom, given the presence of numerous country and year fixed effects. To categorise G20 members into developed and developing countries, we use the IMF classification.

It is possible that the relationship between climate policies in different countries arises not from policy diffusion but from changing trade volumes that define peer countries (spatial lags). To rule out potential reverse causality, we fixed trade volumes to the median year in our sample (2007) and re-estimated the results from Table A1. Table A9 demonstrates that our results remain robust following this modification.

To rank the independent variables by their explanatory power on the number of policies adopted and policy stringency, we rely on the Shapley decomposition. It measures the share of variance in the dependent variable explained by the terms on the right-hand side of the regression equation[21].

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Competing interests: The authors declare no competing interests.

Supplementary Information

Table A1: Testing diffusion of climate policy with peer influence.

Dependent variable (Y)	Lag of Y	Peer influence	Political stability	Index of democracy	Left government	Right government	Control of corruption	Governance effectiveness	GDP per capita	Emission intensity	Gini index	R^2	Obs.
New policies implemented													
Aggregate		0.03^{***} (0)	-0.01^{*} (0.01)	0.23^{**} (0.09)	0.03 (0.09)	0.03 (0.08)	-0.44^{***} (0.15)	0.50^{***} (0.14)	0.02^{**} (0.01)	-0.25 (0.39)	4.42^{***} (1.05)	0.18	500
Market		0.10^{***} (0.03)	-0.01 (0.02)	0.20 (0.17)	0.40^{**} (0.18)	0.25 (0.17)	-0.65^{**} (0.31)	0.21 (0.29)	0.06^{***} (0.02)	-0.10 (0.85)	4.50^{**} (2.25)	0.17	500
Non-market		0.03^{***} (0.01)	-0.02^{**} (0.01)	0.45^{***} (0.15)	-0.14 (0.10)	-0.04 (0.09)	-0.21 (0.18)	0.29^{*} (0.17)	0.02^{**} (0.01)	-0.27 (0.45)	4.98^{***} (1.24)	0.17	500
Technology support		0.18^{***} (0.05)	-0.01 (0.02)	-0.29 (0.32)	-0.16 (0.35)	-0.21 (0.32)	1.42^{**} (0.56)	0.18 (0.55)	0.07^{*} (0.03)	3.55^{***} (1.32)	12.05^{**} (4.91)	0.21	500
Climate strategy		0.14 (0.51)	-0.01 (0.04)	0.25 (0.45)	0.13 (0.39)	0.19 (0.32)	-0.36 (0.76)	-0.75 (0.74)	0.08 (0.05)	-2.20 (2.11)	3.14 (5.29)	0.22	500
Economic instruments		0.07^{***} (0.01)	-0.02^{*} (0.01)	0.21 (0.14)	0.27^{**} (0.13)	0.15 (0.12)	-0.62^{***} (0.23)	0.46^{**} (0.21)	0.05^{***} (0.02)	0.71 (0.59)	5.80^{***} (1.61)	0.17	500
Information and education		0.23^{***} (0.03)	-0.04^{**} (0.02)	0.03 (0.27)	0.25 (0.26)	0.39 (0.25)	0.51 (0.39)	0.86^{**} (0.37)	0.02 (0.03)	3.03^{***} (1.14)	6.46^{**} (2.75)	0.23	500
Policy support		0.15^{***} (0.03)	-0.02^{*} (0.01)	0.04 (0.13)	0.13 (0.15)	-0.03 (0.13)	-0.54^{*} (0.29)	0.61^{**} (0.26)	0.04^{**} (0.02)	0.45 (0.67)	6.73^{***} (1.93)	0.17	500
Research and development		0.18^{***} (0.03)	-0.01 (0.02)	-0.33 (0.24)	-0.02 (0.28)	-0.22 (0.26)	0.91^{**} (0.47)	0.54 (0.43)	0.02 (0.03)	2.68^{**} (1.15)	9.50^{**} (3.74)	0.20	500
Regulatory instruments		0.13^{***} (0.03)	0 (0.01)	0.29^{**} (0.15)	0 (0.15)	-0.05 (0.14)	-0.47^{*} (0.27)	0.26 (0.26)	0.03 (0.02)	0.19 (0.67)	5.31^{***} (1.85)	0.17	500
Target		0.22^{***} (0.08)	-0.06^{**} (0.02)	0.11 (0.31)	-0.21 (0.26)	-0.35 (0.22)	-0.66 (0.50)	0.99^{**} (0.46)	0.03 (0.03)	-3.72^{***} (1.28)	5.56^{*} (3.35)	0.25	500
Voluntary approaches		0.31^{***} (0.07)	0.03 (0.03)	0.10 (0.45)	-0.28 (0.43)	0.36 (0.39)	-0.61 (0.64)	1.93^{***} (0.66)	-0.01 (0.04)	2.78 (2.04)	-5.43 (5.65)	0.29	500
Policy stringency (EPS)													
Aggregate	0.84^{***} (0.03)	-0.11 (0.07)	0 (0)	-0.03 (0.03)	-0.09^{*} (0.05)	-0.11^{***} (0.04)	0.08 (0.08)	-0.07 (0.07)	0.01^{**} (0.01)	-0.04 (0.18)	0.20 (0.49)	0.79	450
Market	0.87^{***} (0.03)	-0.25^{***} (0.09)	0 (0)	0.01 (0.03)	0.02 (0.04)	-0.01 (0.04)	0 (0.07)	0 (0.07)	0 (0.01)	-0.05 (0.17)	-0.11 (0.47)	0.75	450
Non-market	0.79^{***} (0.03)	-0.11 (0.08)	0 (0.01)	-0.08 (0.06)	-0.09 (0.09)	-0.10 (0.08)	0 (0.16)	-0.11 (0.15)	0.03^{**} (0.01)	-0.02 (0.37)	0.79 (0.99)	0.73	450
Technology support	0.77^{***} (0.03)	-0.17 (0.11)	-0.01^{*} (0.01)	-0.04 (0.05)	-0.23^{**} (0.09)	-0.24^{***} (0.08)	0.33^{**} (0.15)	-0.16 (0.14)	0.01 (0.01)	-0.02 (0.35)	0.01 (0.94)	0.66	450

Note: Entry 0 stands for values $< 5 \times 10^{-3}$. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. Standard errors are shown in parentheses. Policy categories are explained in Tables A2-A4 in the Supplementary Information.

Table A2: Classification of policies by instrument provided by the New Climate Institute.

Type of instrument	Sub-type	Policy instruments
Economic instruments	Direct Investments	Funds to subnational governments
		Infrastructure investments
		Procurement rules
		RD&D funding
	Fiscal or financial incentives	CO2 taxes
		Energy and other taxes
		Feed-in tariffs or premiums
		Grants and subsidies
		Loans
		Net metering
		Tax relief
		User changes
		Tendering schemes
		Retirement premium
		User charges
	Market-based instruments	GHG emissions allowances
		GHG emission reduction crediting and offsetting mechanism
		Green certificates
		White certificates
Regulatory instruments	Codes and standards	Building codes and standards
		Industrial air pollution standards
		Product standards
		Sectoral standards
		Vehicle fuel-economy and emissions standards
		Auditing
		Monitoring
		Obligation schemes
		Other mandatory requirements
Voluntary approaches		Negotiated agreements (public/private sector)
		Public voluntary schemes
		Unilateral commitments (private sector)
Information and education	Performance label	Comparison label
		Endorsement label
		Advice and aid in implementation
		Information provision
		Professional training and qualification
Policy support		Institutional creation
		Strategic planning
RD&D	Research programme	Technology deployment and diffusion
		Technology development
		Demonstration project
Barrier removal		Removal of fossil-fuel subsidies
		Removal of split incentives
		Grid access and priority for renewables
Climate strategy		Formal & legally binding climate strategy
		Political & nonbinding climate strategy
		Coordinating body for climate strategy
Target	Energy efficiency target	Formal & legally binding energy efficiency target
		Political & nonbinding energy efficiency target
	GHG reduction target	Formal & legally binding GHG reduction target
		Political & nonbinding GHG reduction target
	Renewable energy target	Formal & legally binding renewable energy target
		Political & nonbinding renewable rnergy target

Table A3: Authors' classification of policies by category for policy count.

Market-based instruments	**Non-market-based instruments**
CO2 taxes	Funds to subnational governments
Energy and other taxes	Infrastructure investments
Feed-in tariffs or premiums	Procurement rules
Loans	User changes
Net metering	Grants and subsidies
Tax relief	Building codes and standards
Retirement premium	Industrial air pollution standards
Tendering schemes	Product standards
User charges	Sectoral standards
GHG emissions allowances	Vehicle fuel-economy and emissions standards
GHG emission reduction crediting and offsetting	Auditing
Green certificates	Monitoring
White certificates	Obligation schemes
Removal of fossil-fuel subsidies	Other mandatory requirements
	Negotiated agreements (public/private sector)
	Public voluntary schemes
Technology support instruments	Unilateral commitments (private sector)
RD&D funding	Comparison label
Technology deployment and diffusion	Endorsement label
Technology development	Advice and aid in implementation
Demonstration project	Information provision
	Professional training and qualification
	Institutional creation
	Strategic planning
	Removal of split incentives
	Grid access and priority for renewables
	Formal & legally binding climate strategy
	Political & nonbinding climate strategy
	Coordinating body for climate strategy
	Formal & legally binding energy efficiency target
	Political & nonbinding energy efficiency target
	Formal & legally binding GHG reduction target
	Political & nonbinding GHG reduction target
	Formal & legally binding renewable energy target
	Political & nonbinding renewable energy target

Table A4: Classification of policies by category in the Environmental Policy Stringency index.

Market-based instruments	**Non-market-based instruments**
CO2 trading schemes	Emission limit value for NOx
Renewable energy trading schemes	Emission limit value for SOx
CO2 taxes	Emission limit value for particulate Matter
NOx taxes	Sulphur content limit for diesel
SOx taxes	
Diesel taxes	**Technology support**
	Public R&D expenditure
	Renewable energy support for solar and wind

Table A5 shows the categories of policies considered in the EPS index, excluding policies related to air pollution. This index is calculated by the authors to ensure comparability with the climate policy categories considered in the New Climate Institute dataset. The methodology for re-calculating the EPS is kept as the original one: the stringency of each category (market-based instruments, non-market-based instruments, and technology support) is calculated as the average of the stringency of its component policy instruments, and the overall EPS is calculated as the average of the three categories.

Table A5: Classification of policies considered in the Environmental Policy Stringency index excluding air pollution-related policies.

Market-based instruments	**Non-market-based instruments**
CO2 trading schemes	Emission limit value for NOx
Renewable energy trading schemes	
CO2 taxes	
NOx taxes	
Diesel taxes	**Technology support**
	Public R&D expenditure
	Renewable energy support for solar and wind

Table A6: Descriptive statistics of climate policy measures.

	New policies implemented				**Policy stringency (EPS)**			
	Aggregate	Market	Non-market	Technology support	Aggregate	Market	Non-market	Technology support
Mean	5.44	1.16	3.75	0.44	1.85	0.89	3.13	1.53
Std.Dev	5.34	1.66	3.85	1.23	1.17	0.70	1.93	1.36
Min	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
Median	4.00	1.00	3.00	0.00	1.69	0.83	2.75	1.25
Max	49.00	14.00	33.00	15.00	4.89	4.17	6.00	6.000

Table A7: Descriptive statistics of control variables.

	Political stability	Index of democracy	Left government	Right government	Control of corruption	Governance effectiveness	GDP per capita	Emissions intensity	Gini index
Mean	4.53	6.48	0.37	0.33	0.51	0.68	30948.52	0.4552	0.56
Std.Dev.	4.13	1.43	0.48	0.48	0.98	0.8	15928.18	0.2490	0.09
Min	1	2	0	0	-1.16	-0.71	2965.87	0.1420	0.41
Median	3	7	0	0	0.28	0.47	32533.56	0.4032	0.54
Max	31	7	1	1	2.07	1.98	76591.13	1.7817	0.75

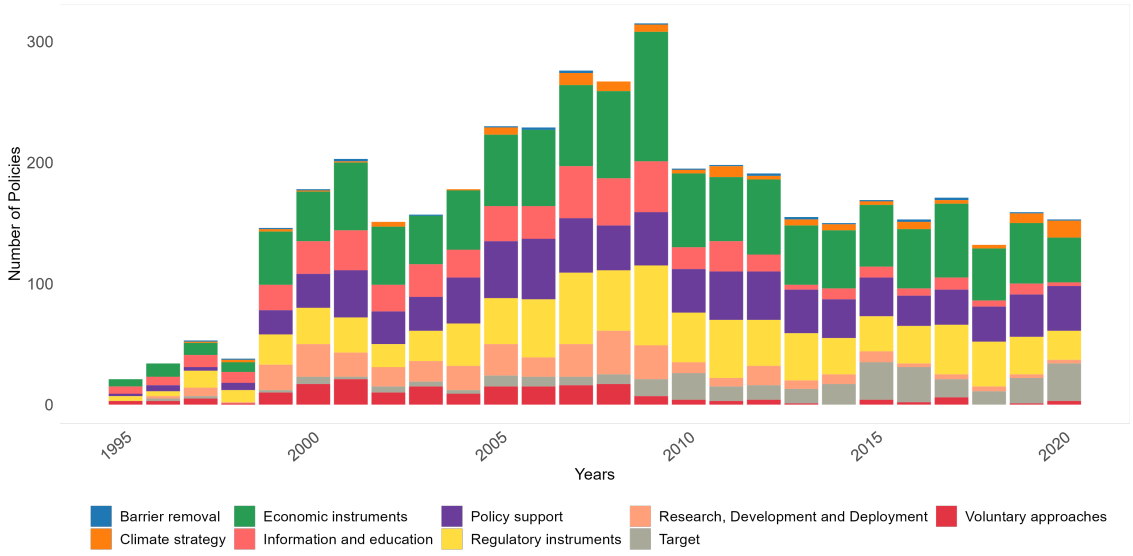

Figure A1: Distribution of newly introduced policies by type.

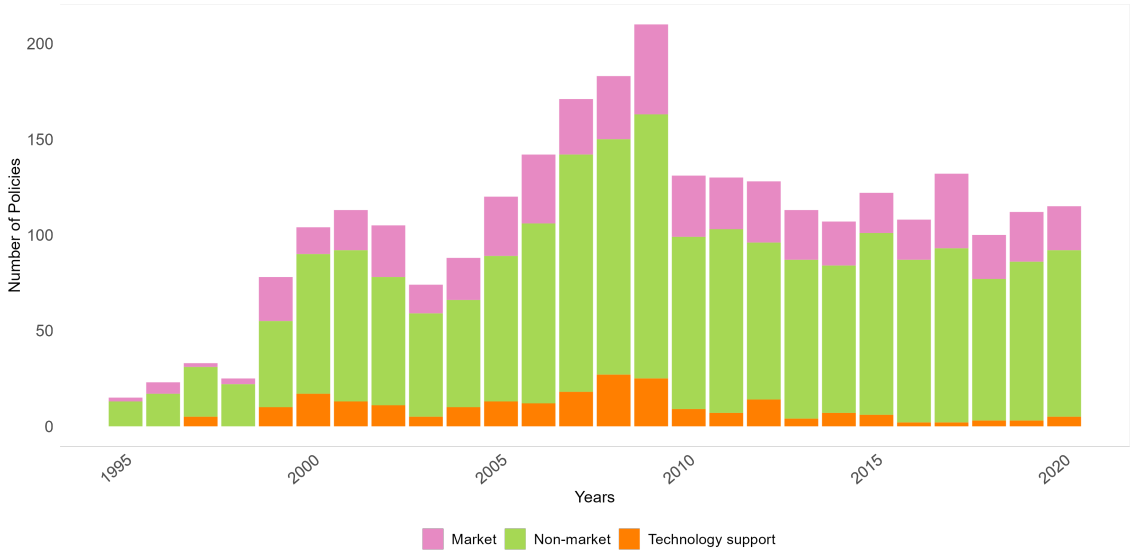

Figure A2: Distribution of newly introduced policies by category.

Note that the sum of policies per year in Figures A1-A2 is not the same since a single policy can be classified to more than one instrument.

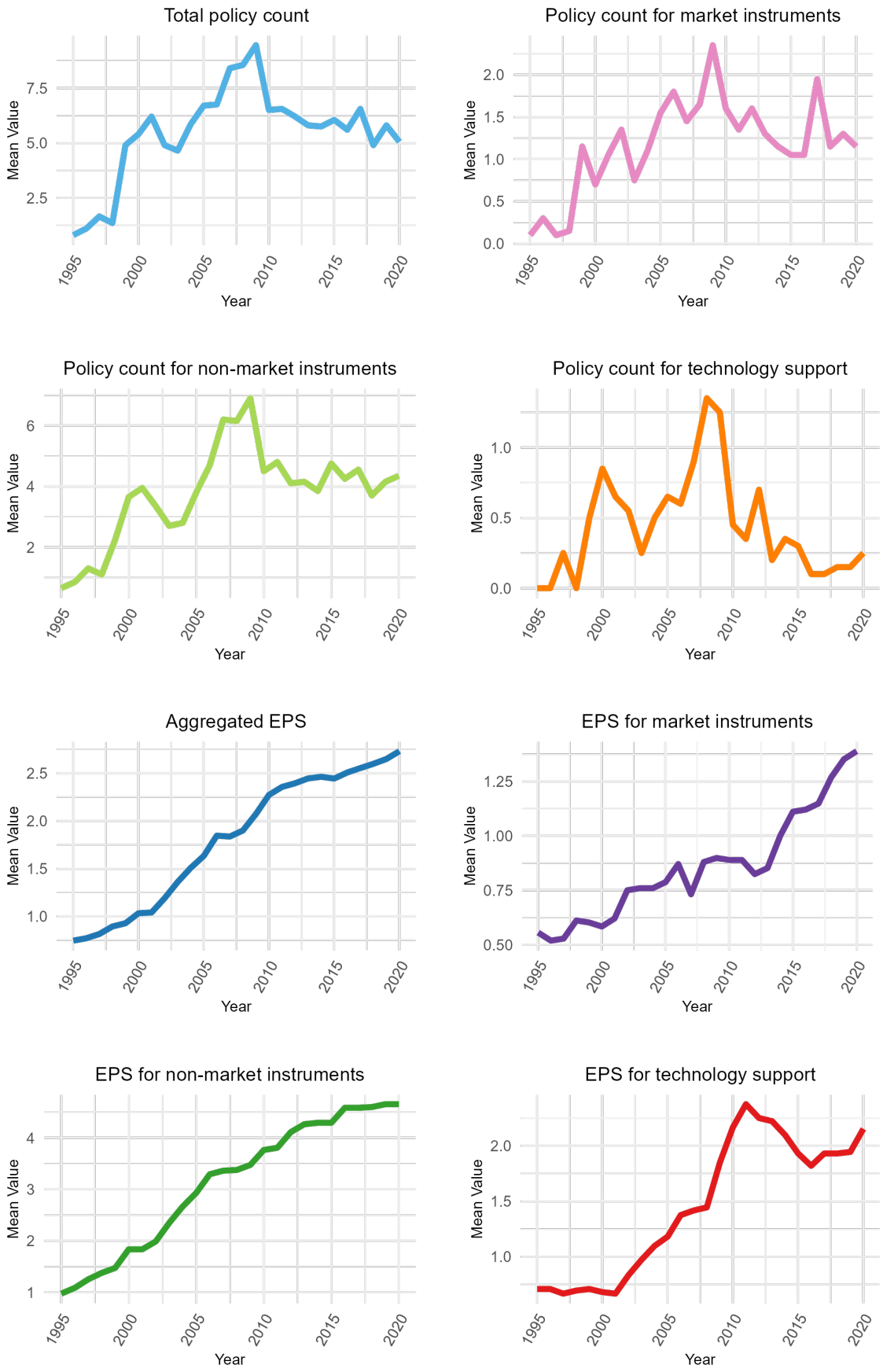

Figure A3: Mean of the different climate policy indicators over time.

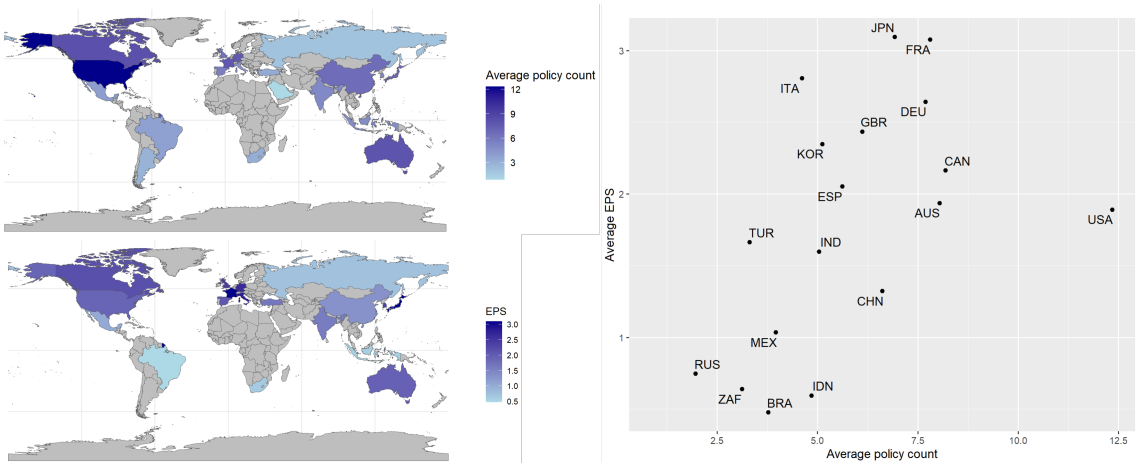

Figure A4: Average number of new policies and average policy stringency in G20 during 1995-2020: heat-map on the left plot and scatter-plot on the right plot.

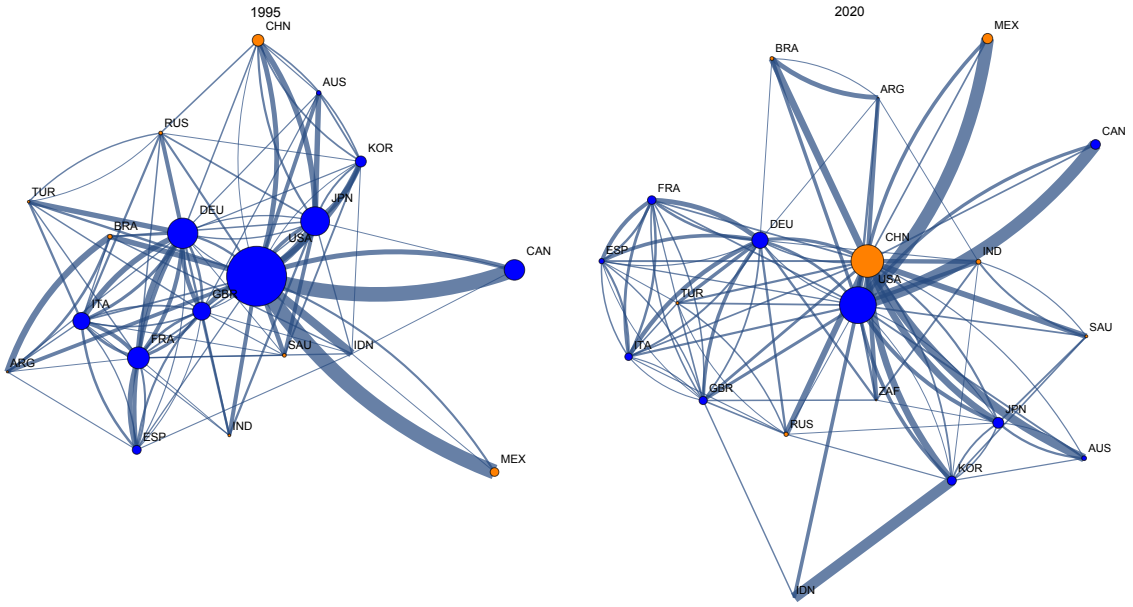

Figure A5: The graphs illustrate bilateral trade ties that exceed 5% threshold of the total trade volume of a country for the year 1995 (left plot) and 2020 (right plot). One can clearly see the increasing role of developing countries (marked with orange) such as China.

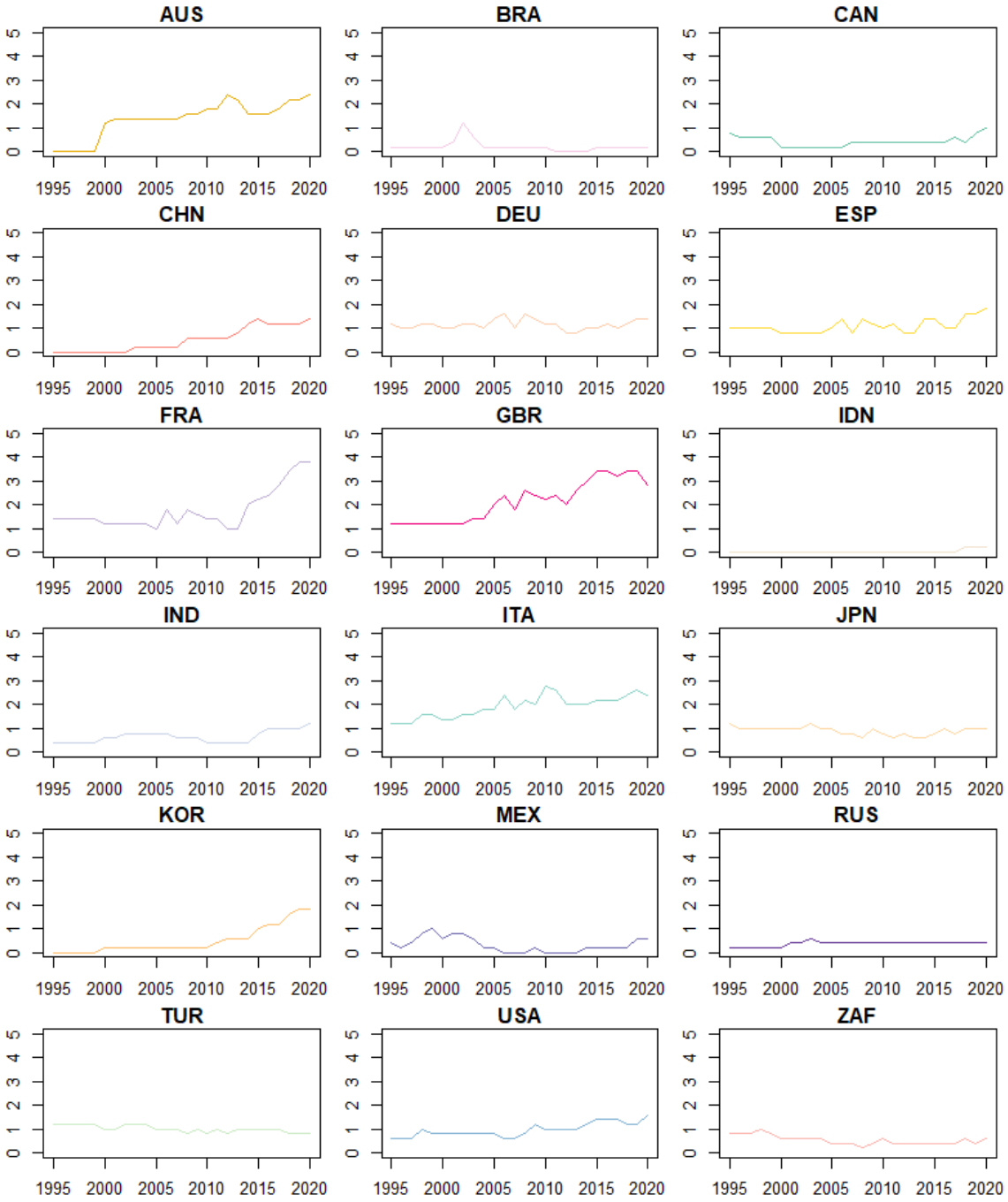

Figure A6: Evolution of market-based EPS measure excluding air pollution policies for G20 countries (information for Argentina and Saudi Arabia is not available).

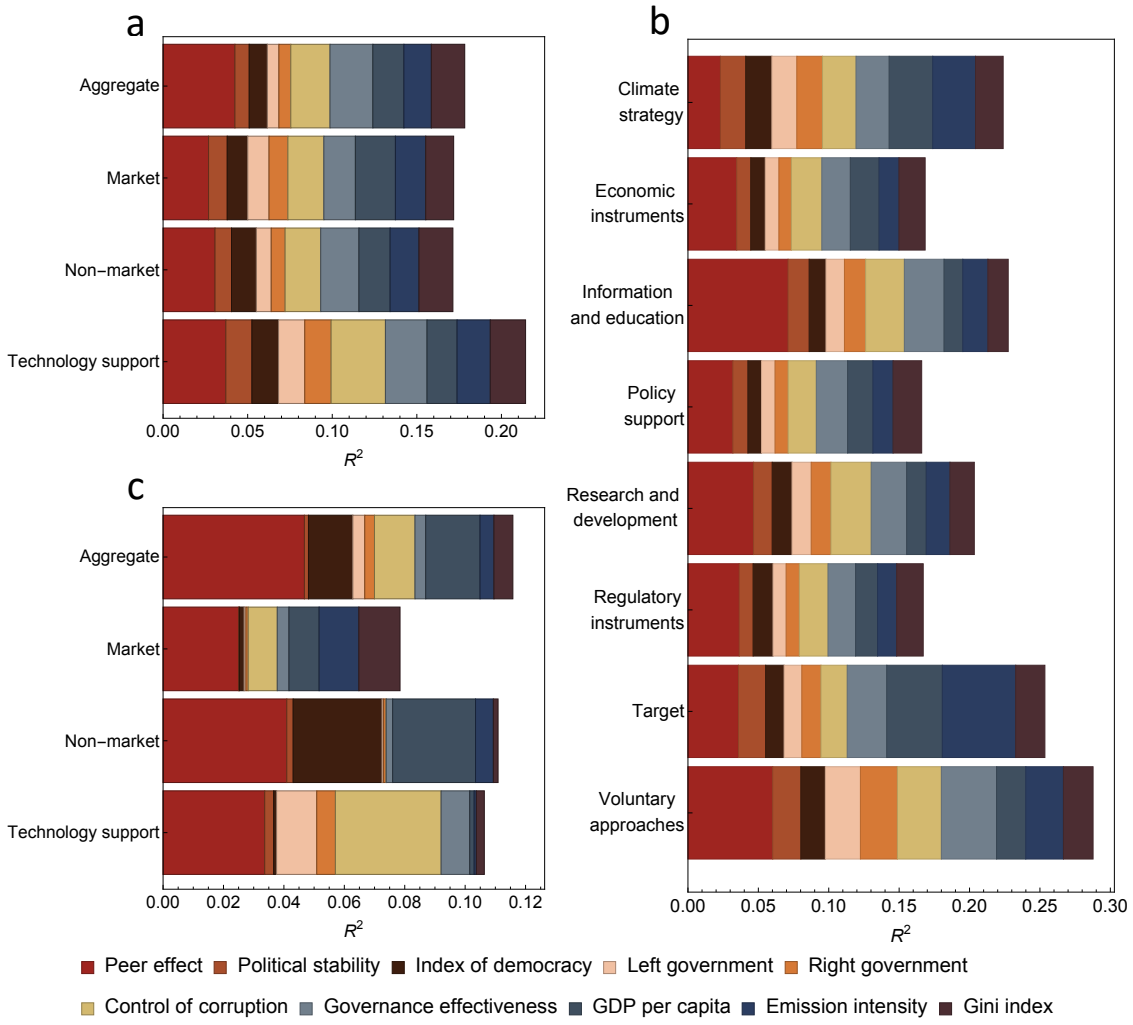

Figure A7: Decomposing R^2 for **(a)** total count of policies and categorised by market, non-market and technology support instrument, **(b)** policy count categorised by type of instrument, and **(c)** total policy stringency and categorised by market, non-market and technology support. The lagged dependent variable is excluded from the chart to ensure better reading.

Table A8: Testing diffusion of climate policy with peer influence for EPS index excluding air pollution policies.

Dependent variable (Y)	Lag of Y	Peer influence	Political stability	Index of democracy	Left government	Right government	Control of corruption	Governance effectiveness	GDP per capita	Emission intensity	Gini index	R^2	Obs.
Aggregate	0.84^{***} (0.03)	-0.12 (0.08)	0 (0)	-0.03 (0.04)	-0.09^{*} (0.06)	-0.09^{*} (0.05)	0.11 (0.10)	-0.09 (0.09)	0.02^{**} (0.01)	0.22 (0.24)	0.35 (0.64)	0.77	450
Market	0.82^{***} (0.03)	-0.24^{***} (0.09)	0 (0)	0.00 (0.03)	0.03 (0.05)	0.01 (0.04)	-0.02 (0.08)	-0.05 (0.07)	0.01 (0.01)	-0.07 (0.19)	-0.27 (0.49)	0.71	450
Non-market	0.81^{***} (0.03)	-0.09 (0.10)	0.01 (0.01)	-0.08 (0.08)	-0.09 (0.14)	-0.06 (0.12)	0.09 (0.24)	-0.13 (0.22)	0.04^{**} (0.02)	0.68 (0.57)	1.05 (1.53)	0.72	450

Note: Entry 0 stands for values $< 5 \times 10^{-3}$. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. Standard errors are shown in parentheses. Policy categories are explained in Table A5.

Table A9: Testing diffusion of climate policy with peer influence under constant trade volumes.

Dependent variable (Y)	Lag of Y	Peer influence	Political stability	Index of democracy	Left government	Right government	Control of corruption	Governance effectiveness	GDP per capita	Emission intensity	Gini index	R^2	Obs.
New policies implemented													
Aggregate		0.03^{***} (0)	-0.01^{*} (0.01)	0.22^{**} (0.09)	0.03 (0.09)	0.03 (0.08)	-0.45^{***} (0.15)	0.50^{***} (0.14)	0.02^{**} (0.01)	-0.22 (0.38)	4.43^{***} (1.05)	0.18	500
Market		0.11^{***} (0.03)	-0.01 (0.02)	0.19 (0.17)	0.40^{**} (0.18)	0.25 (0.17)	-0.65^{**} (0.31)	0.23 (0.29)	0.06^{***} (0.02)	-0.08 (0.85)	4.55^{**} (2.24)	0.17	500
Non-market		0.04^{***} (0.01)	-0.02^{*} (0.01)	0.45^{***} (0.15)	-0.14 (0.10)	-0.05 (0.09)	-0.22 (0.18)	0.29^{*} (0.17)	0.02^{**} (0.01)	-0.27 (0.45)	4.91^{***} (1.24)	0.17	500
Technology support		0.19^{***} (0.05)	-0.01 (0.02)	-0.28 (0.32)	-0.17 (0.35)	-0.22 (0.32)	1.40^{**} (0.56)	0.19 (0.55)	0.06^{*} (0.03)	3.59^{***} (1.32)	11.97^{**} (4.92)	0.21	500
Climate strategy		0.46 (0.53)	-0.01 (0.04)	0.23 (0.45)	0.14 (0.39)	0.20 (0.32)	-0.32 (0.76)	-0.75 (0.74)	0.08 (0.05)	-2.07 (2.11)	3.13 (5.31)	0.23	500
Economic instruments		0.07^{***} (0.01)	-0.02^{*} (0.01)	0.20 (0.14)	0.27^{**} (0.13)	0.15 (0.12)	-0.63^{***} (0.23)	0.47^{**} (0.21)	0.05^{***} (0.02)	0.73 (0.59)	5.79^{***} (1.61)	0.17	500
Information and education		0.24^{***} (0.03)	-0.04^{**} (0.02)	0.02 (0.27)	0.24 (0.26)	0.38 (0.25)	0.42 (0.39)	0.85^{**} (0.38)	0.02 (0.02)	3.2^{***} (1.14)	6.24^{**} (2.75)	0.23	500
Policy support		0.16^{***} (0.04)	-0.02^{*} (0.01)	0.04 (0.13)	0.12 (0.16)	-0.04 (0.13)	-0.55^{*} (0.29)	0.59^{**} (0.26)	0.04^{**} (0.02)	0.44 (0.67)	6.63^{***} (1.93)	0.17	500
Research and development		0.17^{***} (0.03)	-0.01 (0.02)	-0.32 (0.24)	-0.03 (0.28)	-0.23 (0.26)	0.91^{*} (0.47)	0.54 (0.43)	0.02 (0.03)	2.74^{**} (1.15)	9.52^{**} (3.75)	0.20	500
Regulatory instruments		0.14^{***} (0.02)	0 (0.01)	0.30^{**} (0.15)	-0.01 (0.16)	-0.06 (0.14)	-0.49^{*} (0.27)	0.28 (0.26)	0.02 (0.03)	0.21 (0.68)	5.42^{***} (1.85)	0.17	500
Target		0.28^{***} (0.09)	-0.06^{**} (0.02)	0.11 (0.30)	-0.22 (0.26)	-0.35 (0.22)	-0.63 (0.50)	0.94^{**} (0.46)	0.03 (0.03)	-3.76^{***} (1.28)	5.26 (3.36)	0.25	500
Voluntary approaches		0.31^{***} (0.07)	0.03 (0.03)	0.10 (0.44)	-0.30 (0.43)	0.35 (0.39)	-0.65 (0.64)	1.88^{***} (0.66)	-0.01 (0.04)	2.97 (2.02)	-5.3 (5.63)	0.28	500
Policy stringency (EPS)													
Aggregate	0.85^{***} (0.03)	-0.14 (0.10)	0 (0)	-0.03 (0.03)	-0.08^{*} (0.05)	-0.11^{***} (0.04)	0.09 (0.08)	-0.06 (0.07)	0.01^{**} (0.01)	-0.05 (0.18)	0.14 (0.49)	0.79	450
Market	0.87^{***} (0.03)	-0.37^{***} (0.12)	0 (0)	0.02 (0.03)	0.03 (0.04)	0 (0.04)	0.03 (0.08)	0.02 (0.07)	0 (0.01)	-0.04 (0.17)	-0.10 (0.47)	0.75	450
Non-market	0.80^{***} (0.03)	-0.11 (0.10)	0 (0.01)	-0.08 (0.06)	-0.08 (0.09)	-0.10 (0.08)	0 (0.16)	-0.09 (0.14)	0.03^{**} (0.01)	-0.03 (0.37)	0.66 (0.99)	0.73	450
Tech support	0.77^{***} (0.03)	-0.15 (0.13)	-0.01^{*} (0.01)	-0.03 (0.05)	-0.22^{**} (0.09)	-0.23^{***} (0.08)	0.36^{**} (0.15)	-0.13 (0.14)	0.01 (0.01)	-0.04 (0.35)	-0.01 (0.94)	0.65	450

Note: Results are rounded to two decimals after the decimal point. 0 stands for values $< 5 \times 10^{-3}$. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. Standard errors are shown in parentheses. Policy categories are explained in Tables A2-A4 in the Supplementary Information.

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