

# Prices vs. Quantities from a Citizen's Perspective

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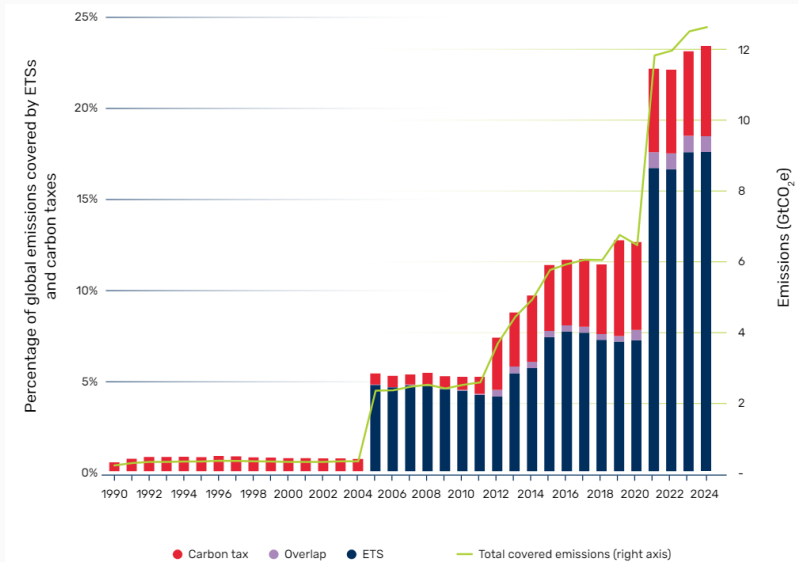
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# Public opposition as a barrier for ambitious carbon pricing



# Three times more emissions covered by ETS than carbon tax



## Current public support research mainly on taxation

- Citizens care about three broader criteria: (1) costs to self, (2) fairness, (3) effectiveness (Maestre-Andrés, Drews & van den Bergh, 2019)
- Carbon pricing: "lack of perception of primary and ancillary benefits" main barrier for acceptability (Baranzini & Carattini, 2017)
- Green spending increases support
- Re-naming to avoid tax aversion (Kallbekken et al., 2011, Douenne and Fabre, 2020)
- Upstream more popular than downstream taxation (Hardisty et al., 2019)

# Approach and key results

## Design

- Survey of 15,000 respondents in seven European countries
- Eliciting support, perceived policy characteristics and transition-related beliefs through simple randomized framing experiment

## Results

- Taxes have a more polarizing effect than ETS, substantial differences in instrument preferences across countries
- Instrument-specific perceptions: carbon taxes perceived as costlier, ETS more strongly perceived as easy to evade, no significant difference in mitigation effectiveness
- Heterogeneous effects: ETS framing reduces support (and increases opposition) among green voters, highly-educated and climate-concerned respondents

# Study Design

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# Epistemic or normative disagreement about climate policies?



# Theories of public appraisal

	<b>Value-based</b>	<b>Reason-based</b>	<b>Ad-hoc</b>
<b>Theoretical antecedent</b>	Rational choice theory	Behavioural economics	Motivated reasoning
<b>Focus of appraisal</b>	Costs and benefits	Motivationally salient properties	<i>unclear</i>
<b>Ascription of support</b>	Maximization of observable or expected value	Subjectively reasoned, based on properties	Ad-hoc appraisal
<b>Consistency of reasoning</b>	Consistent across instruments	Instrument-specific	<i>unclear</i>
<b>Reasoning about support</b>	Ex-ante	Ex-ante	Post-hoc justification
<b>Leveraging support</b>	Substantive policy design	Substantive policy design, policy framing	<i>unclear</i>



## Differences in support between P and Q?

Support for instrument  $c = \{p, q\}$  as a function of individually valued perceived policy properties  $x$ :

$$S_{i,c}(x_{i,c}, \delta_{i,c})$$

**Heterogenous perception:**

$$x_{i,p} \neq x_{i,q}$$

**Heterogenous valuation:**

$$\delta_{i,p} \neq \delta_{i,q}$$

# Study Design

- Representative survey of 15,000 respondents in 7 European countries

Background	Postcode
Psychological and environmental attitudes	Locus of control, existence and cause of climate change, level of climate concern, pro-environmental attitudes
Political and transition-related attitudes	Voting preferences, worldviews, trust in political agents, transition roles, satisfaction with current climate policy
Pre-intervention attitudes on climate policy support	Effectiveness, costs, distributional effects, Awareness of national carbon pricing

Carbon Tax	ETS	Information provision
Post-intervention support and policy properties	<b>Level of support</b> Spontaneous associations Beliefs about policy objectives <b>Perceived policy properties</b> Anticipated cost increase	
Knowledge assessment	Knowledge assessment Previous familiarity with the EU ETS	
Energy costs	Level of worry about current energy cost increases	
Socio-demographic characteristics	Age, gender, education level, household income, number of children	

# Summary Statistics

Variables	Mean (Tax)	Mean (ETS)	p-value (MWW)
<b>Socio-demographic variables</b>			
60+	0.204	0.207	0.666
Female	0.497	0.492	0.551
Rural areas	0.195	0.192	0.739
College degree	0.204	0.211	0.400
Lower income tertile	0.256	0.251	0.538
<b>Political attitudes</b>			
Trust in government	0.205	0.214	0.248
Trust in businesses	0.199	0.198	0.895
Trust in citizens	0.310	0.325	0.097
Green voting preference	0.061	0.063	0.671
Left voting preference	0.195	0.189	0.383
Liberal voting preference	0.046	0.047	0.732
Conservative voting preference	0.141	0.137	0.558
Extreme-right voting preference	0.174	0.171	0.760
<b>Environmental attitudes</b>			
Concerned about climate change	0.564	0.568	0.697
Worried about energy costs	0.786	0.782	0.588
Climate policies not ambitious enough	0.546	0.544	0.822
Government is important for net-zero transition	0.657	0.664	0.449
Businesses are important for net-zero transition	0.711	0.724	0.109
Citizens are important for net-zero transition	0.692	0.693	0.916

# Results

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# Difference in support across countries

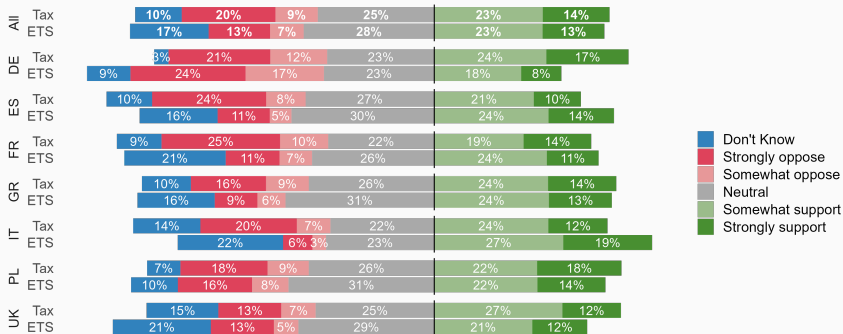
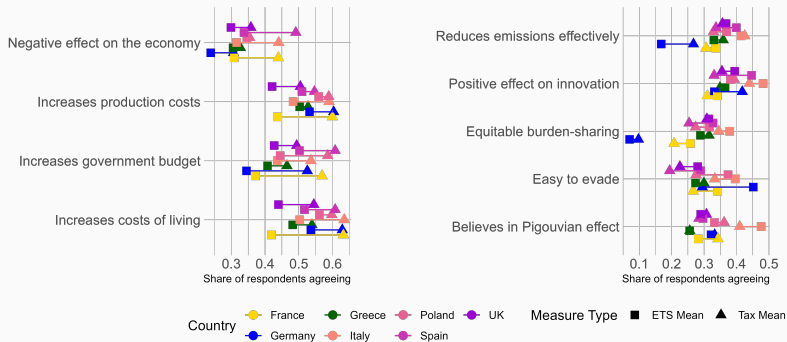


Figure 1: Support of carbon taxes vs. ETS

# Perceptions of PvQ: Average Treatment Effects

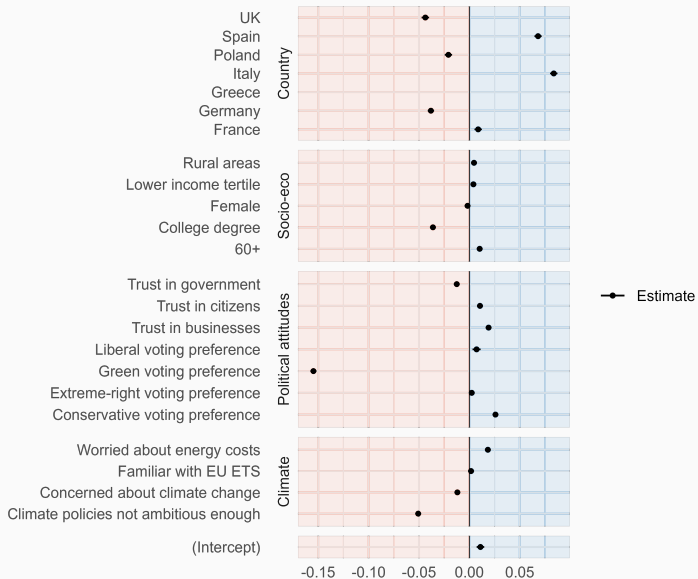
Perceived policy properties	Mean (Tax)	Treatment effect (ETS)
<b>Support</b>		
Support	0.37	-0.012 (0.009)
Opposition	0.29	-0.086*** (0.008)
<b>Policy objectives</b>		
Increase in government revenues	0.49	-0.007 (0.009)
Incentives consumer change	0.53	0.018* (0.009)
Incentives change in production	0.60	0.007 (0.009)
<b>Policy properties: cost implication</b>		
Increases costs of living	0.60	-0.104*** (0.009)
Increases production costs	0.57	-0.074*** (0.009)
Increases government budget	0.54	-0.121*** (0.009)
<b>Policy properties: distributional burden</b>		
Equitable burden-sharing	0.26	0.021** (0.008)
Consumers most burdened	0.18	0.005 (0.007)
Businesses most burdened	0.66	-0.018** (0.006)
<b>Policy properties: effects</b>		
Reduces emissions effectively	0.34	0.000 (0.008)
Positive effect on innovation	0.37	0.020* (0.009)
Negative effect on the economy	0.39	-0.080*** (0.008)
Easy to evade	0.27	0.074*** (0.008)
Believes in Pigouvian effect	0.33	-0.006 (0.008)
Controls		Yes
Country-fixed effects		Yes
Observations		12,541

# Country-based differences in perceptions



**Figure 2:** Share of respondents agreeing with selected perceptions of tax (triangle) and ETS (square)

# Heterogenous Treatment Effects on Support





## Summary

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## Substantial differences in appraisal of PvQ

- Cross-European differences in support for carbon tax vs. ETS
- Among the carbon tax group, stronger perceptions of increased state budget, increase in costs of living & production, and negative effect on the economy
- ETS is perceived as easier to evade

## Policy implications?

- The emissions trading frame may appeal more to "hard-to-convince" groups, but may reduce support among traditional "pro-climate" constituencies

# Thank you!

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## Next steps

- Disentangling effects of endogenous policy perceptions on support
- Sentiment analysis of open-ended questions
- Country-based heterogeneity: what drives perceptive differences and support across instrument framings?

## “Prices vs. Quantities“ for non-economists?

“I think it is a fair generalization to say that the average economist in the Western marginalist tradition has at least a vague preference toward indirect control by prices, just as the typical non-economist leans toward the direct regulation of quantities.

That a person not versed in economics should think primarily in terms of direct controls is probably due to the fact that he does not comprehend the full subtlety and strength of the invisible hand argument.”

– **M. L. Weitzman, 1974, “Prices v. Quantities”**

# Previous familiarity with the EU ETS

Country	Heard of it before		Never heard of it before		Don't Know	
	Tax group	ETS group	Tax group	ETS group	Tax group	ETS group
France	0.19	0.22	0.23	0.17	0.58	0.60
Germany	0.62	0.53	0.01	0.02	0.26	0.32
Greece	0.25	0.27	0.18	0.14	0.57	0.59
Italy	0.19	0.20	0.22	0.19	0.59	0.61
Poland	0.46	0.44	0.18	0.15	0.36	0.40
Spain	0.22	0.24	0.19	0.14	0.59	0.62
UK	0.23	0.22	0.18	0.18	0.59	0.60