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20 June 2023

Conference on Ex-Post Evaluation of Emission Trading (EUI Florence)









## Current public support research mainly on taxation

- Citizens care about **three broader criteria**: (I) 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)





## "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"



## **Research Questions**

- (I) (How) does the **perception of (non)economic policy properties** vary between carbon taxes and ETS?
- (2) What drives public support for carbon taxes vs. emissions trading systems?
- (3) Can potential differences in support be explained by views on suitable intervention points & understandings of the economic mitigation mechanism?
- (4) Can we spell out a "perceived" economic model of how citizens reason in their appraisal of carbon taxes and ETS?





## Study Design

- Inter-European representative household survey (Ariadne sub-panel)
- 15,000 observations across Germany, France, Italy, Poland, Greece, Spain, and the UK
- Long suite of attitudinal variables (party preferences, trust, world views)
- Randomization of respondents in two groups: (1) carbon tax; (2) ETS
- Brief non-biasing information on carbon taxation and emissions trading
- Eliciting prior knowledge, support and policy-specific perceptions (post-hoc rationalizations?)



#### Who drives decarbonization?

Can potential differences in support be explained by views on the importance of different actors for decarbonization?



Consumers



Demand-side change



**Government** 



Green public spending



**Private sector** 



Production-side change

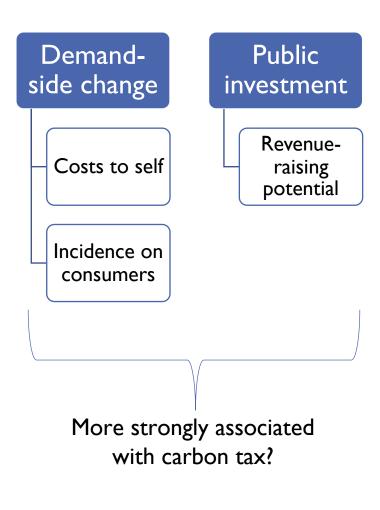


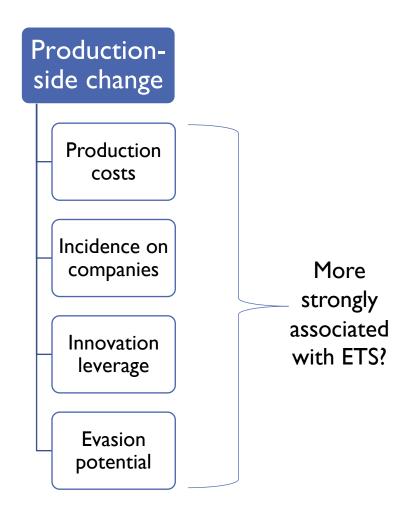


## How are carbon pricing policies perceived?

Mitigation mechanisms

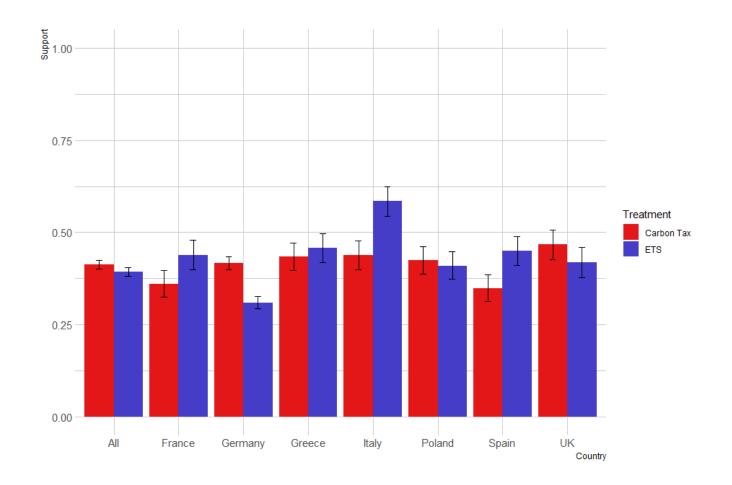
**Policy properties** 







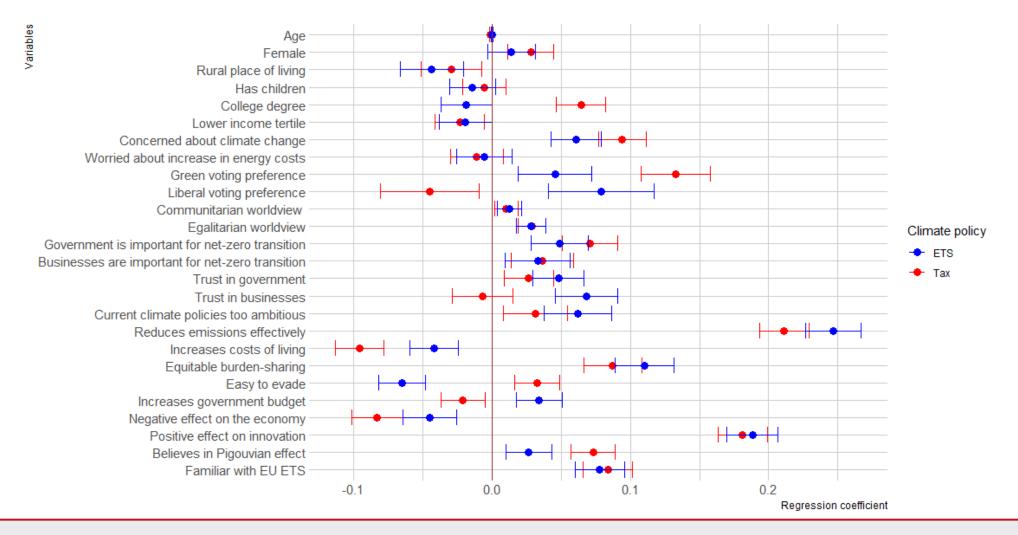
## Support for ETS vs. carbon taxes







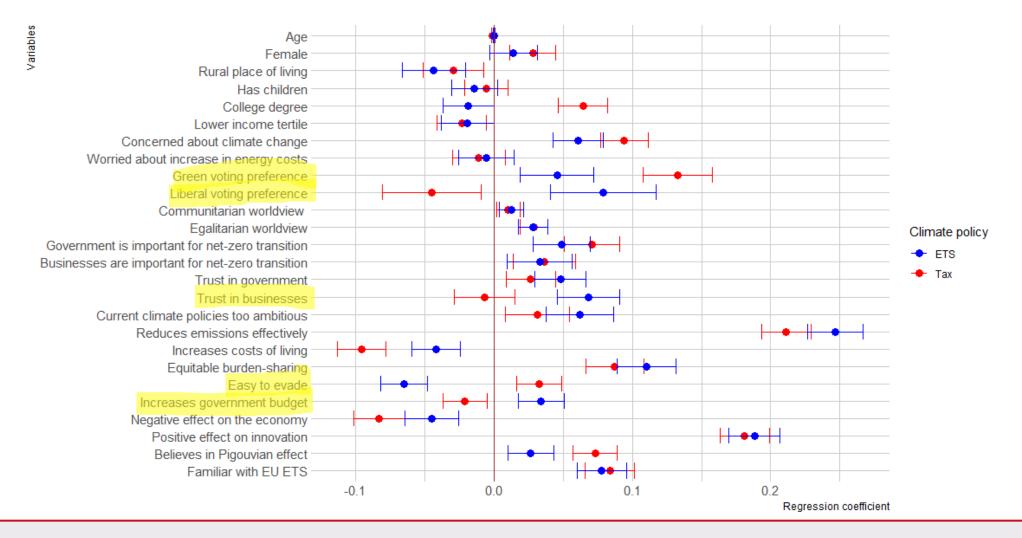
### **Drivers of support for ETS vs. carbon tax**







### **Drivers of support for ETS vs. carbon tax**



# Perception of policy properties

Table 3: Treatment effects: perception of ETS, compared to carbon tax

1	(1)	
	ETS (all sample)	
Reduces emissions effectively	-0.0615***	
- Antibiological State Chatter Antibiological Chatter (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990)	(0.0116)	
Increases costs of living	-0.0221**	
	(0.0104)	
Fair burden-sharing	0.0307***	
	(0.0094)	
Easy to evade	0.1412***	
	(0.0123)	
Increases government budget	-0.09982***	
	(0.0121)	
Negative effect on the economy	-0.0476***	
	(0.0107)	
Positive effect on innovation	-0.0072	
	(0.0109)	
Controls	Yes	
Country FE	Yes	
Observations	13,269	



# Perception of policy properties

Table 3: Treatment effects: perception of ETS, compared to carbon tax

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Reduces emissions effectively $-0.0615^{***}$ (0.0116) $-0.0752^{***}$ (0.0177)       without Germany         Increases costs of living $-0.0221^{**}$ (0.0104) $0.0345^{**}$ (0.0164)         Fair burden-sharing $0.0307^{***}$ (0.0094) (0.0166) $0.0401^{**}$ (0.0166)         Easy to evade $0.1412^{***}$ (0.0123) (0.0181) $0.01034^{***}$ (0.0181)         Increases government budget $-0.09982^{***}$ (0.0121) (0.0175) $-0.0769^{***}$ (0.0175)         Negative effect on the economy $-0.0476^{***}$ (0.0178) (0.0178) $-0.0598^{***}$ (0.0178)         Positive effect on innovation $-0.0072$ (0.0450*** (0.0165) (0.0165) $0.0450^{***}$ (0.0109) (0.0165)         Controls       Yes       Yes         Country FE       Yes       Yes		(1)	(2)	
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		(0.0094)	(0.0166)	
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	Increases government budget	-0.09982***	-0.0769***	
		(0.0121)	(0.0175)	
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$\begin{array}{c cccc} \text{Positive effect on innovation} & -0.0072 & 0.0450^{***} \\ \hline & (0.0109) & (0.0165) \\ \hline \text{Controls} & \text{Yes} & \text{Yes} \\ \hline \text{Country FE} & \text{Yes} & \text{Yes} \\ \end{array}$	Negative effect on the economy			
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(0.0109)         (0.0165)           Controls         Yes         Yes           Country FE         Yes         Yes	Positive effect on innovation	-0.0072	0.0450***	
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Country FE Yes Yes	Controls			
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	Observations	13,269	7,488	_



## **Summary**

- 40% of survey respondents support carbon pricing (ETS or carbon tax)
- 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
- Support for each instrument most strongly associated with perceptions around effective mitigation and innovation leverage (negatively: living costs, impact on economy, evasion)
- Interesting relationship between support for ETS and attitudes/perceptions around businesses





# Thank you for your attention!

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19/06/2023







### References

Baranzini, A. & Carattini, S. (2017). Effectiveness, earmarking and labeling: Testing the acceptability of carbon taxes with survey data. Environmental Economics and Policy Studies, 19(1), 197227.

Campbell, T. H., Kay, A. C., 2014. Solution aversion: On the relation between ideology and motivated disbelief. *Journal of Personality and Social Psychology* 107(5), 809.

Cherry, T. L., Kallbekken, S., & Kroll, S. (2017). Accepting market failure: Cultural worldviews and the opposition to corrective environmental policies. *Journal of Environmental Economics and Management*, 85, 193-204.

Douenne, T., & Fabre, A. (2022). Yellow vests, pessimistic beliefs, and carbon tax aversion. American Economic Journal: Economic Policy, 14(1), 81-110.

Fairbrother, M., Sevä, I. J., & Kulin, J. (2019). Political trust and the relationship between climate change beliefs and support for fossil fuel taxes: Evidence from a survey of 23 European countries. Global Environmental Change, 59, 102003.

Hardisty, D. J., Beall, A. T., Lubowski, R., Petsonk, A., & Romero-Canyas, R. (2019). A carbon price by another name may seem sweeter: Consumers prefer upstream offsets to downstream taxes. *Journal of Environmental Psychology*, 66, 101342.

Hepburn, C. (2006). Regulation by prices, quantities, or both: a review of instrument choice. Oxford Review of Economic Policy, 22(2), 226-247.





#### References

Kallbekken, S., Kroll, S., & Cherry, T. L. (2011). Do you not like Pigou, or do you not understand him? Tax aversion and revenue recycling in the lab. *Journal of Environmental Economics and Management*, 62(1), 53-64.

Maestre-Andrés, S., Drews, S., and van den Bergh, J. (2019). Perceived fairness and public acceptability of carbon pricing: A review of the literature. Climate Policy, 19(9):1186–1204.

Pizer, W. A. (1997). Prices vs. quantities revisited: the case of climate change. Resources for the Future Discussion Paper 98-02. Resource for the Future, Washington D.C.

Pizer, W. A., & Prest, B. C. (2020). Prices versus quantities with policy updating. Journal of the Association of Environmental and Resource Economists, 7(3), 483-518.

Rafaty, R. (2018). Perceptions of corruption, political distrust, and the weakening of climate policy. *Global Environmental Politics*, 18(3), 106-129.

Sommer, S., Mattauch, L., & Pahle, M. (2022). Supporting carbon taxes: The role of fairness. *Ecological Economics*, 195, 107359.

Stantcheva, S. (2021). Understanding tax policy: How do people reason?. The Quarterly Journal of Economics, 136(4), 2309-2369.

Weitzman, M. L. (1974). Prices vs. quantities. Review of Economic Studies 41(4), 477–491.

World Bank (2022). States and Trends of Carbon Pricing 2022. World Bank, Washington D.C., DOI: 10.1596/978-1-4648-1895-0.