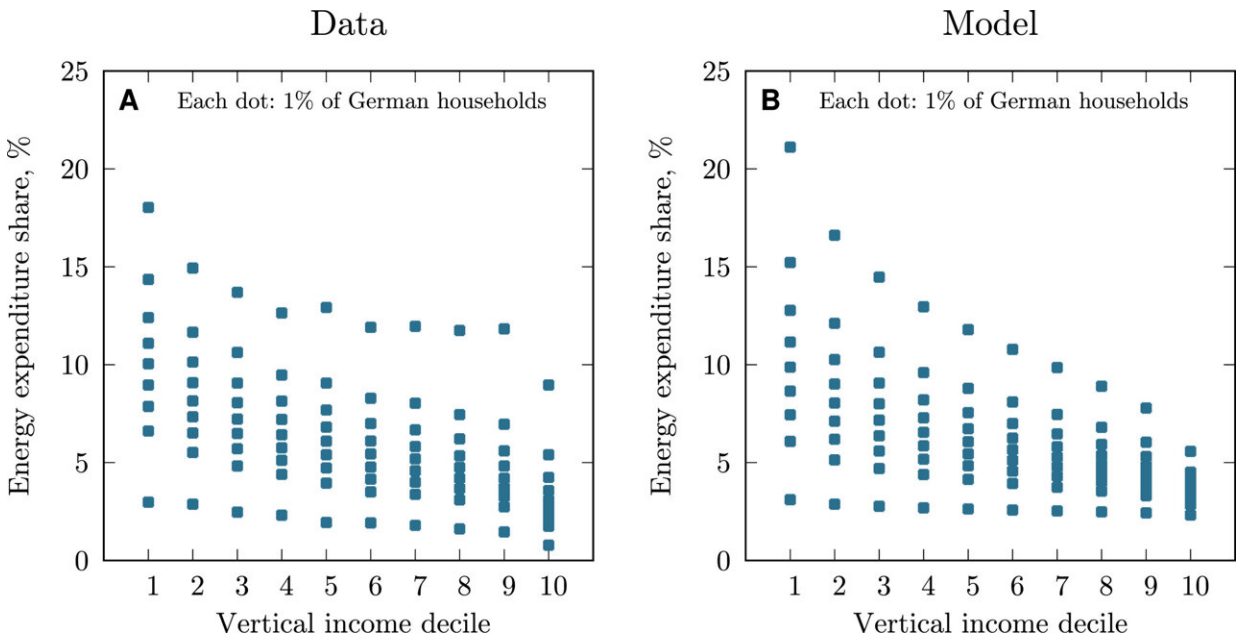
Targeted reimbursement: A just price for carbon dioxide

September 30 2022



Hetereogeneity of households. Panel A: mean expenditure shares in 10 × 10 grid based on EVS 2018 data. Panel B: mean expenditure shares from estimated model. Credit: *Journal of Environmental Economics and Management* (2022). DOI: 10.1016/j.jeem.2022.102730

"It is crucial that the revenues from CO_2 pricing are returned, and in a targeted manner: Distributing them back in shotgun-mode is only the second-best solution," explains Martin Hänsel, an economist at PIK and lead author of a new study, which appeared in the *Journal of*

Environmental Economics and Management.

"It makes most sense to support the most affected groups with direct transfers. In the study, we identify these particularly affected groups for the first time: Because they are not simply the poorer segments of the population. Rather, within each income group there are households with very high energy expenditures—people who rely on their cars to drive to work because they live in the countryside, people who have old oil-based heating or tenants with little to no influence on insulation, and so on. These are the groups that the government needs to identify and compensate. That's the fairest and economically most sensible solution looking at society as a whole."

"Especially in the current crisis, with rising energy costs for everyone, people keep saying that a CO_2 price is not politically feasible. Yet the opposite is true, and it is precisely now that we need political control here," says Max Franks, also an economist in Potsdam and author of the study. "Science is long clear that polluting the atmosphere won't stop if it doesn't cost anyone anything. We've now looked at the question of how best to do that, precisely so that it doesn't hit the poor hardest—and we see: There are socially just solutions."

Handing out cash payments to those most in need is not as easy as it may seem for government agencies. Before they can make such payments, they need to know which households are particularly energy-intensive but can do little to change that in the short term.

"There are already ideas here about how that might work. But we also looked at solutions that entail less bureaucracy. It turns out that cash transfers where everyone gets the same amount, can do the job if they are combined with moderate support for renewable energies. This policy package lowers energy prices, reduces the number of hardship cases and ultimately results in a reduction in the unequal burden," says Matthias

Kalkuhl, who conducts research on CO_2 pricing and tax reforms at the MCC and is co-author of this study.

Ottmar Edenhofer, Director of both PIK and MCC and also author of the study, says that "for this study, we have broadened the economic view. We are not looking at people on the basis of what they earn, as is usually the case. Instead, we look at how much they are affected by energy price changes. This makes the model we've built very applicable also to the current energy crisis."

"Because here, too, relief needs to arrive before additional burdens hit the citizens, and the relief needs to come in a targeted way. To achieve this, it is crucial to take people's different starting points into account. Ultimately, we need the CO_2 price as a market-based lever to effectively reduce emissions. It won't solve all the problems, but without it, the climate problem cannot be solved."

More information: Martin C. Hänsel et al, Optimal carbon taxation and horizontal equity: A welfare-theoretic approach with application to German household data, *Journal of Environmental Economics and Management* (2022). DOI: 10.1016/j.jeem.2022.102730

Provided by Potsdam Institute for Climate Impact Research