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Distributional effects and acceptability of carbon taxes in the European Union

Key messages

- Carbon taxes, either implemented directly or through high fuel taxes, have long existed in European jurisdictions.
- If the European Union were to implement a comprehensive carbon tax across all member states, however, it would disproportionately raise the expenditure of the poorest 40% of European households, mainly from the poorest countries.
- Recycling revenues through compensation transfers can offset this disproportionate burden, using just 7% of the total carbon tax revenue. The net impact of this scheme would be neutral at the European level, and with equal-per-capita transfers, the carbon tax burden would become progressive.

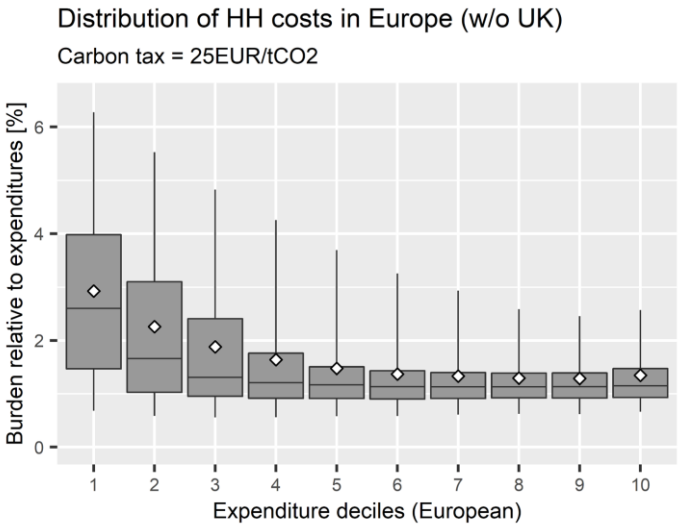
Problem

Mitigating greenhouse gas (GHG) emissions is one of the main challenges facing humanity. Carbon taxation has proven to be an effective solution, but in the European Union (EU) context a comprehensive carbon tax would mean that, for citizens in a few of the poorest countries, the carbon tax would represent a disproportionate share of their expenditure. Redistributing a small share of the carbon tax revenue could compensate these households.

Effects of carbon taxation on the poor

Only 22% of global GHG emissions are currently priced [1]. Europe already has various carbon pricing mechanisms, including a cap-and-trade system for some energy and industrial sectors, as well as high fuel taxes on households in some jurisdictions [2]. The EU is currently extending and homogenising this pricing coverage, but the burden on consumers could become an issue.

A recent publication of the CHIPS project calculated the burden of a carbon tax across European households [3]. At the national level, the study finds that the distributional effect of a comprehensive carbon tax would be *neutral* (where the tax burden is proportional to the households' expenditure) or even *progressive* (where the tax burden rises with the households' expenditure) in many EU countries. However, at the European level, the impact is *regressive*: it affects the poorest citizens more. The figure below displays the regressivity of a comprehensive carbon tax across European households by showing the additional share of household expenditure that would arise from a notional tax rate of €25/tCO_2. Households are grouped according to their total expenditure, from the poorest 10% (decile 1) to the richest (decile 10). The poorest 40% of households across Europe (deciles 1–4) pay a disproportionate share.



Using the revenue

Although carbon taxes generate revenue for the government, the main intention of the tax is to incentivise a reduction in carbon consumption. It is therefore reasonable to recycle this revenue back to households. Targeting these transfers can remove any regressivity that arises, or can compensate specific groups that are most affected [3].

Country-level differentiation

As the CHIPS publication shows, the poorer households that bear a disproportionate burden of carbon taxation are mostly from low-income countries in Eastern Europe. Households from Poland, Romania or Bulgaria, for example, tend to have more carbon-intensive consumption compared to the European average, and tend to have lower overall expenditure. This differentiation between EU countries drives the disproportionate burden of carbon taxation on poorer households.

If all citizens in the EU were to receive an equal share of the revenue (equal-per-capita transfers), the carbon tax burden would become progressive. Across the EU, poorer households would benefit from the taxation with recycling scheme, while richer households would become net donors. Transfers from richer to poorer countries thus offset the adverse effects of carbon taxation on poorer households.

Type of compensation

To save tax revenue, governments can only compensate households that are poorer than the European average, i.e. households in deciles 1–4. Resuming the example of a €25/tCO_2 tax rate, transferring €57.5 to each household in deciles 1–4 would only use up 7% of the total carbon tax revenue, but would result in a proportional distribution of the burden.

These targeted transfers would resolve the regressivity of the tax and retain sufficient funds for other uses. Using targeted transfers as the basis for compensation through the Just Transition Fund could promote popular acceptance of the EU's overarching Green Deal.

Carbon-intensive consumers

Additional transfers could be targeted to the most-affected households, irrespective of their expenditure level. For example, rural households might face additional hurdles switching to less carbon-intensive consumption. A survey carried out in Sweden shows that those who protest against carbon taxes are overrepresented in rural areas [4].

References

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3. Feindt, S., Kornek, U., Labeaga, J. M., Sterner, T., and Ward, H. (2021). Understanding regressivity: Challenges and opportunities of European carbon pricing. *Energy Economics*, 103, 105550.
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Project website: https://chips-project.org
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