

Carbon tax design and revenue recycling in line with national redistribution policy and global justice principles

Topic: Input-Output Analysis: Income Distribution Policies - II

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Carbon taxation is regarded as an essential tool for curbing carbon emissions but can be regressive, in the worst case increases poverty, and moreover lacks universal acceptance among the public and policymakers. Recycling the tax revenue raised to vulnerable households is a promising solution to this issue. However, little is known about the best strategy for designing such a policy at the global level. By using an environmentally extended global multiregional input-output approach based on the Global Trade Analysis Project, a highly detailed expenditure database and data on coverage of social assistance programs, this paper investigates the effectiveness of various carbon taxation methods and revenue recycling mechanisms in reducing poverty and inequality between and within countries. We find that the policy mix with the highest poverty reduction potential is implementing a consumption tax with higher tax rates on luxury goods and recycling revenue through the expanded social assistance systems during the COVID-19 pandemic. While differentiating tax rates across goods within countries is advantageous, the average tax level across countries is best kept uniform since it potentially offers governments in low- and middle-income countries more financial capacity to support the poor. Furthermore, collecting a global climate fund from developed countries and redistributing it to developing countries based on poverty headcounts can further significantly reduce poverty and inequality within and between countries. However, substantial improvements in social assistance systems are urgently needed to further unlock the poverty-reduction potential of revenue recycling, particularly in Sub-Saharan African countries. Also, recycling carbon tax revenues to combat poverty and inequality will inhibit the emission reduction effect of carbon taxation in the short term, necessitating additional mitigation efforts in other areas.