Pigouvian Income Taxation

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Abstract

How to fight grand externalities without hurting the poor? We develop a mechanism design model for externality problems with redistribution goals. The welfare-optimal mechanism ties together individuals' choices on incomes and the externality, leading to income-dependent marginal taxes for both choices. A policy reflecting aversion to inequity can optimally set externality taxes that are increasing or decreasing in income, yet preserving the net progression: the two tax rates adjust in opposite directions to preserve the income tax progression. Whether the Pigouvian level is exceeded and whether progressivity or regressivity arises depends on welfare weights on burdens between and within income groups, behavioral responses to incentives on the externality, and earnings distortions due to redistribution. We conclude with applications to (i) cars and (ii) electricity using individual-level register data to illustrate the magnitude of the main mechanisms.

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