

Optimal Environmental Taxation with Heterogeneous Households and Endogenous Productivities

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Work in progress, please do not quote

Abstract

How should redistributive governments set pollution taxes in a context of heterogeneous households characterized by endogenous productivity? We develop a Mirrlees partial equilibrium model with human capital formation in order to explore if the optimal green tax is still equal to the Pigouvian rate. Our economy is characterized by an endogenous ability cut-off which implies that only workers with education ability parameter strictly above it will invest in education. We derive the optimal carbon tax in conjunction with the optimal redistributive income tax and lumps sum transfers. We show that, if low skilled workers do not consume polluting goods in a disproportion way, and if the risk aversion is not too strong, a raise in green taxes, by making more difficult to afford the cost of education, increases the proportion of low skilled workers in the economy. We found that education subsidies are then necessary to offset the green-tax-induced distortions on learning. If the government can observe education costs of individuals, it is then possible for the government to reach the first best pollution tax (the Pigouvian one). We finally provide numerical illustrations.

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