# Pigou Creates Losers: On the Implausibility of Achieving Pareto Improvements from Efficiency-Enhancing Policies

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**Abstract**

Economic theory predicts that efficiency-enhancing policy changes can be made to benefit everyone through the use of lump-sum transfers that compensate anyone initially harmed by the change. Precise targeting of compensating transfers, however, may not be possible when agents are heterogeneous and the planner faces constraints on the design of transfers. In this paper, I derive a necessary condition for an efficiency-enhancing policy to create a Pareto improvement that can be tested directly with data. The condition relates the size of efficiency gains to the degree of predictability between initial burdens and variables used to determine a transfer scheme. The main empirical application is to a gasoline tax to correct carbon emissions, with related results for other sin taxes also presented. Results indicate that it is infeasible to create a Pareto improvement from the taxation of these goods, and moreover that plausible policies are likely to leave a large fraction of households as net losers. The paper argues that the existence of these losers is relevant to policy design and may help explain the political challenges faced by many efficient policies. The paper concludes with several extensions related to this political economy motivation.

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