Complementarities and Optimal Targeting of Technology Subsidies*

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Abstract

Policies often ignore interactions between related products. This is particularly true in the case of subsidies for low-emissions and energy-efficient technologies. We develop a theory of second-best policy for interacting low-emissions technologies where first-best Pigouvian taxation of high-emissions substitutes is infeasible. The second-best policy involves subsidies that are a function of cross-technology substitution patterns. Ignoring these interactions reduces welfare due to infra-marginal take-up and the second-best policy accounts for this by targeting the more price-responsive low-emissions technology. We find evidence of complementarities between solar photovoltaics and plug-in electric vehicles in California, suggesting that interactions between products are relevant to policymakers.

Keywords: Innovation Policy, Complementary Goods, Optimal Taxation
JEL Codes: H23, Q48, Q58

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