

Strategic Recycling of Critical Raw Materials ^{*}

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Abstract

We show that governments may have an incentive to subsidize the sector that recycles raw materials from local waste, solely to provide a trade advantage to their national firms. We extend the Brander-Spencer-Dixit model of strategic trade to incorporate local material inputs, specifically recycling. A key assumption is that the marginal cost of recycling decreases with the size of the local market's consumption (i.e. a positive production externality). In the game between non-cooperative governments, subsidies to local recycling are strategic complements. We identify two countervailing forces. On the one hand, due to the rent stealing motive governments tend to choose excessively high subsidies. On the other hand, uncoordinated governments do not fully internalize the benefit resulting from expansion in production (the externality), thus tend to choose insufficiently low subsidies. When these forces balance each other the non coordinated equilibrium turns out to be efficient. Moreover, we show instances where it is preferable to have myopic policy making, i.e. policy designed ignoring the production externality.

Keywords: Critical Raw Materials; Strategic Trade Policy; Recycling; Economies of Scale; Cooperative Equilibrium; Non-cooperative Equilibrium

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