

Reciprocal Dumping under Dichotomous Regulation

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An essential ingredient to net-zero-emissions policies is to regionally integrate electricity markets. But electricity cross-border trades are often assessed as inefficient. We explain this inefficiency by the presence of a dichotomous regulation: producers are highly regulated in regards of their local activities, but weakly regulated when it comes to their exports. Such a dichotomy in regulation can be generalized to every economic sector, with varying intensity.

We provide a generic 2-player game theoretical framework where producers anticipate the impact of their exports on the clearing of regulated local markets. We model this as a two-stage game where the producers set their exports first. The second stage correspond to the local markets clearing where regulation is assumed to be the simplest marginal-cost-pricing in order to provide a theoretical benchmark. Thus, the regulation is harmonized between each country and non-discriminatory, but they are not coordinated. We characterize the subgame-perfect Nash equilibrium of the game and provide examples with functional forms.

Overall, dichotomous regulation in our framework leads producers to over-export in order to create scarcity on their home market. Hence, despite that local markets clear efficiently, the global equilibrium is inefficient. When the two jurisdictions are relatively symmetric, the producer in each jurisdiction prefer to dump overseas in order to raise its home price, resulting in reciprocal dumping. This equilibrium is Pareto-dominated by the efficient outcome. Ultimately, the trade regime between asymmetric local markets is determined by their relative price-elasticity. The lower the relative price-elasticity of a market with respect to another, the stronger is the incentive to dump for the local producer, and the stronger is the incentive to withhold for the foreign producer.

These results call for better coordination between the regulatory authorities of each jurisdiction. This is not generally the case in international trade, and our model can be seen as a building-block to derive optimal international trade policies. The European Agency for the cooperation of Energy Regulators (ACER) and their promotion of market coupling to foster the European Internal Electricity Market (IEM) is an example of such a high degree of coordination. Yet, market coupling results in automated flows, an approach not necessarily desired in more market-oriented regions, nor in other economic sectors.

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