Trade and competitiveness effects of different decarbonisation policies

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ABSTRACT: The choice of instrument to decarbonize an economy affects the competitiveness of emission intensive trade exposed (EITEs) sectors. Countries choosing a stick approach (carbon pricing or regulation) lose competitiveness compared to countries following a carrot approach (green subsidies). The question is how large such effects are, to what extent they are magnified by complementary discriminatory policies such as local content requirements and to what extent they can be mitigated by border carbon adjustment (BCA) policies. This paper explores the trade and competitiveness effects of differences in decarbonisation policies, exploring three main questions. First, how large is the impact of stick versus carrot approaches on competitiveness in EITE, sophisticated and strategic sectors and what are the main channels? We focus on differences in spill-over effects of policy instruments and not on differences in effectiveness. Second, what is the additional impact of discriminatory policies, such as local content requirements related to subsidies and to what extent does BCA limit the competitiveness effects? Third, do the differential effects of a carrot versus stick approach become larger with deeper decarbonisation? What is the impact on third countries introducing limited decarbonisation policies? To analyse these questions, we employ the power version of the WTO Global Trade Model expanded with diffusion of ideas, endogenous R&D, and green subsidies. We study scenarios where some countries choose carbon pricing and others choose a mix of green subsidies realising the same level of emission reductions. As green subsidies we include production and R&D subsidies to electricity generated from renewable energy. We explore various scenarios where either a single or a set of countries realises emission reductions with a carrot approach.

Keywords: Carbon pricing, green subsidies decarbonisation, spillover effects, endogenous R&D

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