

International spillovers and carbon pricing Policies

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The urgency of the Climate Problem and the relative failure of the multilateral process justify renewed efforts to understand motivations for (and implications of) unilateral, second-best, GHG-emissions abatement. This paper contributes to that end by emphasising the role of abatement technology – and its critical dependence on foreign technological and policy developments – for unilateral carbon pricing policy development. That is, it sheds light on a policy diffusion process which can occur through two channels: one through which policy adoption provides information about the (net) benefits of policy implementation, another whereby mounting adoption of a policy/technology by other jurisdictions alters the (net) benefits of adoption.

We apply this approach to the climate policy context and follow Mideksa (2016) in identifying two such effects: a signalling effect, whereby a jurisdiction's action signals the low cost of abatement to others; and a (technological) spillover effect, whereby (abatement) technology adoption by one jurisdiction, alters the cost of abatement. These two channels constitute powerful mechanisms of policy diffusion. This paper focuses on those effects and argues that (recent) climate policy developments are directly related to them. Besides, we claim that their strength depends on the nature and intensity of the trade relationship with partners endowed with more advanced abatement technology and/or that put an explicit price on carbon.

Our approach offers a different perspective on the role of trade in the development of carbon pricing policies. We develop this view within the context of a static general equilibrium trade model with global pollution. Unlike earlier work we do not rely on changes in world prices induced by the rich North to generate policy changes in the relatively poorer South. Rather, using an adapted version of the model in Copeland and Taylor (2003) we show how (trade-weighted) technological spillovers and signalling can prompt a change in domestic pollution policy.

To test our hypotheses, we use variables that capture the signalling and technological spillover effects, respectively. Our dataset covers the period 1990-2014 in four sectors of the economy for 121 national jurisdictions. We investigate the effect of these variables on the probability of implementation and the stringency of implemented schemes using (panel) logistic and OLS regressions, respectively.

We find some evidence that technological development in abatement in neighbouring jurisdictions positively influences the probability of implementation of a carbon pricing mechanism. Overall, we find an especially strong effect of import channels in the diffusion of policy (and technology) across jurisdictions.

Taking the perspective of a (small) jurisdiction considering implementation of a carbon pricing scheme, we argue that its policy decision is linked to (foreign) signalling and technological spillover effects. In other words, a jurisdiction looking to price carbon will assess its access to abatement technology and the policy signal of its various (trading) partners. Crucially, we claim that access to abatement technology and the nature/strength of the signal received depends on the nature of the trade relationship with its carbon pricing/abating partners. We believe that the above analysis lends support to that view. First, there is strong evidence that the implementation and stringency of carbon pricing policies is related to import flows from carbon pricing partners. This echoes earlier studies on trade-related knowledge spillovers and evidence about the development of renewable energy industries in some jurisdictions. Secondly, it appears that not only do jurisdictions learn more from their carbon pricing partners but, among them, learn more from the best.

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