

A Trade-Environment Coalition Game

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We identify several interconnections between international environmental problems and trade issues. Inspired by the work of Barrett (1997), we propose a model that links the problem of forming International Environmental Agreements (IEAs) with International Trade Agreements. We broaden Barrett's model by considering a more general form of trade coalition with trade sanctions in the form of differential tariff treatment instead of complete trade-bans. Such scenario is currently under discussion as a potential post-Kyoto framework after the year 2012. We introduce a meta-game with two stages. The first one is an environmental coalition formation game. The second one is a trade-production game. We compute the stability function of the IEA, and we find that the existence of positive spillovers (public good effect) when IEAs are formed exacerbates free riding incentives and leads to less cooperation. However, since countries are linked via trade, tying-in environmental and trade agreements generates negative spillovers over defectors. We find that these negative spillovers can potentially neutralize the perverse free riding incentives and as such sustain larger environmental coalitions.

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