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Sign, then Ratify: Negotiating under Threshold Constraints

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Abstract :

The procedure for implementing any international treaty necessarily involves two steps. The negotiation phase which culminates in the signature of the treaty is followed by a ratification phase. This last phase is governed by a rule which determines how far the ratification process has to advance before the treaty can come into effect. The purpose of this paper is to analyse, using a game theoretical approach, the possible consequences of this minimum participation rule for the ratification phase and for the negotiation phase. I consider the case of International Environmental Agreements in which, during the negotiation phase, the different parties have to decide on the level of a global target and on how to share the efforts necessary to reach it.

I use a cooperative approach to define what is called the threshold value (T-value). For a given coalition of parties, the T-value gives the expected outcome of the negotiation over sharing a global target, when the parties take into account the minimum participation rule.

Given this T-value, I use a non-cooperative approach to determine which coalition will sign the agreement and what will be its global target. The minimum participation constraint has in fact no impact on the ratification phase because it is always better to refuse to sign rather than to sign and then refuse to ratify. However, I show that the minimum participation constraint can modify the outcome of the negotiation phase. Indeed, it plays a role in a mechanism which can be used by a coalition to signal its leadership commitment. I analyse the conditions under which, at the equilibrium, the leading coalition can provoke an expansion of the signing coalition.

Keywords: International Environmental Agreements. Negotiation. Minimum participation rule. Shapley value. Ratification. Leadership commitment.

JEL Classification C71, C72, D74, K33, N5

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