

Burden Sharing and Self-enforcing Climate Agreements

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Abstract

This paper studies the self-enforcing climate agreements in a dynamic framework where asymmetric countries emit greenhouse gases over time. In particular, this paper considers a new scheme of burden sharing to make the agreements stable by deriving the optimal allocation of greenhouse gases emissions among countries. We find the optimal emission quota that equalizes the incentives to comply with the agreement between countries. We show that a country with a higher marginal benefit and/or smaller marginal damage cost is permitted to emit more in the optimal agreement. Some comparative statics and an extension lead to several policy implications.

JEL classification numbers: C72, C73, F53, Q54.

Keywords: Climate Agreements; Emission Quotas; Compliance Incentive Equalization; Technology Investments; Repeated Games

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