

INTERNATIONAL ENVIRONMENTAL AGREEMENTS: IS GLOBAL COOPERATION POSSIBLE?

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Overview

The negotiation and ratification of the Kyoto Protocol has spawned a body of literature aimed at analyzing the formation of international environmental coalitions. This literature suggests that in equilibrium environmental agreements will have only a small number of signatories. As of April 2007, however, 168 countries have ratified the protocol; thirty-five of which have binding emissions reduction requirements. These thirty-five parties represent a coalition significantly larger than that predicted by the existing coalition formation models.

Methods

To understand this finding, this paper develops a new game-theoretic model of international coalition formation, altering the game presented in the literature. The new model assumes that abatement requirements are independent of coalition membership. Using this model, we attempt to explain the outcome of the Kyoto Protocol. We then investigate a method of increasing participation in future international environmental agreements.

Results

Our new model suggests that the abatement levels specified by the Kyoto Protocol are too large to warrant participation by the United States. However, by re-specifying the abatement requirements, we can achieve global cooperation. Additionally, we find that ensuring global cooperation results in larger global abatement and lower global cost than predicted by the models existing in the literature.

Conclusions

The results from this paper suggest that global cooperation is possible if we reduce individual abatement requirements, thus creating a broad but shallow agreement. Additionally, we find that a broad but shallow international agreement can achieve better results in terms of abatement and cost than a narrow but deep agreement.

References

Barrett, Scott (2003). *Environment and Statecraft*. New York: Oxford University Press.