

RULES FOR NEGOTIATING AND UPDATING CLIMATE TREATIES

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THE NEED TO NEGOTIATE

A climate treaty is characterized by a large number of parameters: What should the abatement or emission levels be? How should the burden to abate be distributed across countries? What should the time profile for the emission levels be? Should there be issue linkages with other policy areas? Should there be any side transfers between some countries and, if so, what should the transfers be? This richness in parameters implies that there is a lot to decide and negotiate before the final climate treaty is ready.

Moreover, there is great uncertainty regarding the future costs and benefits of abatement. Today, it is not yet known how much abatement will be desirable in the future. This means that any climate treaty must be updated, or renegotiated, quite frequently in the coming years. The realized climate policies depend on future international negotiations—and the rules governing these.

THE COST OF NEGOTIATING

Negotiations would be trivial if all countries agreed on what the treaty should be. But countries disagree since their costs and benefits of abating vary; their domestic interests and industry characteristics differ. This conflict of interest means that negotiations may look somewhat like a tug of war. The outcome of the negotiations is thus going to depend on the allocation of bargaining power as well as the rules governing the bargaining process.

What determines the allocation of bargaining power? A country's bargaining position typically hinges on its gains and losses from an agreement. If the gains are moderate and the costs large, a country is reluctant to agree unless the final agreement is modified to the liking of the reluctant country. If the other countries have larger gains, or smaller losses, they are likely to give in and give the reluctant country a better deal to make sure the agreement gets through. This way, the countries' gains and losses are likely to influence how the burden to abate is going to be distributed across countries.

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In reality, the gains and losses are not carved in stone. These are determined by a country's domestic decisions, recognizing that these decisions are going to influence the country's bargaining position. A superior abatement technology, for example, increases the gain and reduces the loss when signing an ambitious climate treaty. The other countries can then "hold up" the high-tech country and demand that it bear the lion's share of the burden when the quotas are negotiated. Anticipating this, domestic politicians may think twice before investing heavily in abatement technology, particularly when negotiations are coming up.

The desire to gain bargaining power may also lead to other strategic actions. For example, a country may want to delegate its bargaining power to a representative that is skeptical about the value of an agreement. Such a representative would be a tougher negotiator and may ensure that the country gets a lower burden, since the opponents may find it necessary to offer special treatments to make sure the reluctant representative does not veto or opt out of the agreement. Moreover, a country, or its representative, may be tempted to pretend it is reluctant in negotiating a treaty, hoping that this reluctance will strengthen the country's bargaining position. To signal such reluctance credibly, a country may be induced to propose small emission reductions or delay making serious proposals. All these strategies may be aimed at improving one country's bargaining position, but they are detrimental to the society as a whole, making an efficient climate treaty less likely to be implemented.

DO WE NEED RULES WHEN NEGOTIATING?

The costs associated with strategic behavior may be great. In fact, when negotiations are anticipated, countries may reduce their investments in abatement technology by so much that the countries are collectively worse off compared to the situation with no agreement at all (Harstad 2009b). This means that investments in R&D are reduced when countries negotiate climate agreements on emission reductions. Agreements on emissions may thus harm, and not necessarily motivate, investments in technology. This negative effect is particularly likely to occur if each agreement is short-lasting, such that negotiations are frequent.

But it does not need to be this way. The value of a stronger bargaining position depends crucially on the rules governing the bargaining process. Six rules can improve the bargaining process and reduce the detrimental urge to gain bargaining power prior to negotiations. With these rules, a climate treaty on emission levels is going to have positive impacts on countries' motivation to invest in abatement technology. It is not necessary to implement all of the rules for their effect to be positive. On the contrary, each rule is more important to implement if the other rules are not implemented. Moreover, the rules are equally relevant whether countries negotiate tradable permits, non-tradable quotas, or emission taxes. The rules are further explained and justified by Harstad (2009a) and the other references listed below.

1. **Specified formulas should be used to calculate national obligations and contributions.** If the distribution of contributions is determined by a formula, it is harder for a country to (re)negotiate its own share of the burden. Enhancing bargaining position is then less useful, and high-tech countries cannot be held up by other countries demanding greater contributions. Consequently, investments in R&D increase when a pre-specified formula pins down the distribution of burden across countries. But there are two main drawbacks of using formulas. First, countries are heterogeneous, and it may not be socially optimal that the abatement level for every country should be determined by a single formula.

Second, since the purpose of the formula is to reduce flexibility in the negotiations (and thus reduce the gain of having bargaining strength), some countries may find that the formula places such a large burden on them that they will credibly threaten to opt out of the treaty. Both these drawbacks can be mitigated if the formula is cleverly designed to depend on GDP and economic growth, for example.

2. **The time horizon of the agreement should be long.** The cost of bargaining arises more frequently the more often an agreement needs to be negotiated. The best time horizon of an agreement must thus trade off the cost of bargaining with the fact that the future best abatement levels are not yet known. The first argument is stronger if the cost of strategic concerns—for example, the hold-up problem leading to less R&D—is large. This means the time horizon should be longer if, for example, countries are under-investing in R&D because intellectual property rights are weakly enforced.

3. **Future commitments should be tougher than what will likely be ideal.** If the agreement is more ambitious, in that the emission levels are required to be very small, then every country is forced to develop new technology, since otherwise it is going to be very costly to abate the required amount. This increase in R&D is particularly desirable if countries are otherwise under-investing, that is, if intellectual property rights are weakly enforced and/or the time horizon of the agreement is short. In other words, targets for the future should be “distorted” towards the more ambitious in order to motivate the countries to invest sufficiently in R&D.

4. **When renegotiating the climate treaty, the default outcome (the threat point) should be an ambitious agreement.** Bargaining rounds in the WTO are more efficient than environmental negotiations. One reason for this is that when trade negotiations break down, the outcome is not the absence of rules, but the existing set of rules. If the current climate negotiations break down, on the other hand, the outcome will be no agreement at all, since the commitments under the Kyoto protocol are set to expire. This implies that a strong bargaining position is particularly important when negotiating climate treaties, inducing countries to under-invest in R&D, as explained above. It would be more efficient (and countries would invest more in R&D) if the threat point were the previous commitment or, even better, an ambitious climate treaty. Thus, instead of ensuring flexibility by having a sequence of short-term agreements, it is far more efficient to renegotiate long-term agreements, where the understanding is that if the agreement fails to be renegotiated, then the old agreement continues to be in place. Environmental agreements should thus adopt the convention used when countries negotiate trade agreements.

5. **The unanimity requirement should be replaced by a majority or a super-majority requirement for treaty amendments.** Unanimity means that even the most reluctant country must agree, and it is this requirement that induces countries to seek to strengthen their bargaining power. Reducing the majority requirement mitigates strategic considerations; investments in R&D would increase. Note that this bargaining rule may not compromise on participants’ sovereignty: participation in the climate treaty is voluntary, and it may be in every member’s interest to agree to a set of rules that will govern future decision-making efficiently.

6. **Investments in R&D, or trade in abatement technology, should be subsidized internationally.** As argued above, countries may under-invest in R&D when they anticipate future negotiations. To motivate countries to invest sufficiently in R&D, it may be necessary to subsidize R&D directly, if feasible. Alternatively, trade in abatement technology can be subsidized, since parts of these subsidies will be captured by the innovating country. At the very least, it is important to reduce tariffs on trade in abatement technology and to enforce intellectual property rights (patents) for innovations in abatement technology. These policies are particularly important if countries are otherwise likely to under-invest significantly, that is, if the other rules listed here are not followed. Thus, R&D should be subsidized if no formula is used, if the agreement is short-lasting and not very ambitious, and when unanimity is required even when the treaty is modified or renegotiated.

➤ **Each of these rules is more important if the other rules are *not* followed.** This means that subsidizing R&D is more important if the time horizon is short and if formulas are not used in negotiations. Similarly, the time horizon should be longer if unanimity is required for each amendment or if the default outcome (if the renegotiations should fail) is no agreement rather than an ambitious agreement. The reason for this “strategic substitutability” is that each of the rules is aiming for a more efficient bargaining process, where the countries have less of an incentive to improve their bargaining position by, for example, under-investing in R&D. Mitigating this problem, by following one of the rules, is more important if the problem is large, that is, if the other rules are not or only weakly implemented.

LINK WITH TRADE AGREEMENTS?

For each of the rules above, a problem arises if a country can credibly threaten to opt out of the agreement unless it receives a more favorable deal. Unfortunately, it may be more tempting to opt out if the rules above are strictly in place, for example, if a formula prevents flexibility or a country does not have veto power when negotiating future commitments. If countries can credibly threaten to opt out, the benefit and the credibility of each of the rules above is reduced. It is thus important to reduce the credibility of such threats by increasing the gain of participating in the climate treaty.

One such gain could be access to a free-trade area or the status as a preferred trading partner. Linking climate treaties and trade agreements is thus beneficial, and it may be necessary for the rules above to be efficient and credible. Moreover, such a linkage provides two other important benefits. First, it makes it more likely that a large number of countries find it in their interest to participate in the climate treaty. This is important, since reduced participation may lead to carbon leakage and a lower level of commitment among the participants. Second, trade sanctions may be a necessary penalty for participants that fail to comply. Currently, the Kyoto Protocol does not impose sanctions on non-compliers, and it is therefore costless to participate without complying. To ensure that compliance is in the participants’ interest, it is necessary to include both sticks and carrots. Trade policies may be the only available mechanisms.

CONCLUSION

Any climate treaty must be (re)negotiated and updated over time. Anticipating future negotiations, countries may try to enhance their future bargaining positions. These strategic considerations lead countries to invest less than ideally in abatement technology, and they may employ bargaining strategies that delay or reduce the value of future agreements in order to signal that they are not desperate to reach an agreement. The potential social cost of such strategies is great. To reduce these costs and to make the negotiations more efficient, six rules are described here that may govern the bargaining process. The rules do not have to be implemented as a set. In fact, if five of the rules are not implemented, it is all the more important to implement the sixth.

FURTHER READING

A more careful explanation of the “bargaining cost” and the associated strategic concerns is provided by Harstad (2009a). For economists, a rigorous analysis of the under-investment problem is provided by Harstad (2009b), where rules 2, 3, 4, and 6 are derived. Harstad (2007) shows how the incentive to signal reluctance may arise in a bargaining context and how this may lead to delay or inefficient agreements. That paper derives rule 1. Rule 5 is derived and investigated by Harstad (2005). For more on formulas, see Frankel (2007, 2008) and for the cost of harmonized policies, see e.g. Hoel (1992). Carraro and Marchiori (2004) discuss linking environmental agreements to trade agreements, and Barrett (1997) analyzes how trade sanctions can be used to enforce environmental agreements. Many more references are provided in Harstad (2009a).

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The goal of the Harvard Project on International Climate Agreements is to help identify and advance scientifically sound, economically rational, and politically pragmatic public policy options for addressing global climate change. Drawing upon leading thinkers in Australia, China, Europe, India, Japan, the United States, and other countries, the Project conducts research on policy architecture and key design elements of a post-2012 international climate policy regime. The Harvard Project also provides insight and advice regarding countries' domestic climate policies, especially as these policies relate to the prospects for meaningful international action. The Project is directed by Robert N. Stavins, Albert Pratt Professor of Business and Government at the Harvard Kennedy School. Major funding for the Harvard Project on International Climate Agreements is provided by a generous grant from the Climate Change Initiative of the Doris Duke Charitable Foundation.

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