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AUTONOMOUS LIBERALIZATION IN
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ABSTRACT

Should Credit be Given for Autonomous Liberalization in Multilateral Trade Negotiations?*

As each new round of multilateral trade negotiations approaches, there is a demand for a negotiating rule that would give credit for autonomous liberalization. This Paper shows that the desirability and feasibility of such a rule depends on when it is instituted. A credit rule established at the beginning of a round of negotiations has primarily a distributional effect, favouring those who have already undertaken liberalization. The implementation of such a rule relies on the generosity of those who have not liberalized. We propose instead the establishment of a credit rule at the end of a round of negotiations, which creates an *ex ante* assurance that any unilateral liberalization will receive credit in the next round. Such a rule would help induce and/or enhance liberalization between negotiating rounds by reducing the gains from retaining protection as negotiating currency. Moreover, it leads to lower intertemporal average protection in all countries under plausible conditions. Most importantly, such an *ex ante* rule does not rely on altruism to be generally acceptable.

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NON-TECHNICAL SUMMARY

As a new round of multilateral negotiations approaches, there is a strong demand for a negotiating rule which would give credit for autonomous liberalization. Developing countries in particular have argued that there should be a permanent mechanism for granting such credit within the WTO. In fact, the heads of the International Monetary Fund, World Bank and World Trade Organization also expressed interest in the possibility of developing countries obtaining negotiating credit for trade policy reforms introduced under Fund or Bank programmes. Such demands, however, have produced no significant result. Might it be possible to articulate the proposal in a way that makes it more generally acceptable?

We study the simplest form of granting credit for autonomous liberalization: this is to proceed with negotiations as if the unilateral liberalization has not happened; so any agreed reductions are calculated from the pre-liberalization levels of protection rather than the current applied levels. We consider a country in which an internal political change has created an impulse to liberalize, and examine the impact of four different credit rules that have been proposed: (i) no credit rule; (ii) an *ex post* credit rule, which grants credit for past unilateral liberalization; (iii) an *ex ante* credit rule, which assures credit for future unilateral liberalization; and (iv) a rule that requires *immediate* reciprocal tariff reductions by other countries in response to a unilateral reduction by any country.

The desirable feature of an *ex ante* credit rule is that it favourably influences the unilateral decision to liberalize. It does so in three ways. First, the unilateral tariff reduction will be larger than in the absence of such a rule, because the intertemporally maximizing government will see its future terms of trade loss associated with the unilateral liberalization being neutralized by the negotiating credit it will receive. Second, as a consequence of the first reason, certain unilateral tariff reductions that would not have occurred in the absence of this rule will now be observed. Third, this may induce unilateral tariff reductions by the rest of the world as a reaction to the original unilateral liberalization.

The drawback of any credit rule is that the tariff reduction by the unilaterally liberalizing countries during the multilateral negotiations will be smaller than it would have been under a no credit rule.

How do these opposing considerations affect the intertemporal tariff schedule of a country that unilaterally liberalizes? The *ex post* credit rule is dominated by the *ex ante* credit rule, as the latter induces lower protection in the period between negotiating rounds though both lead to identical protection in the negotiating round. The no credit rule also dominates the *ex post* credit rule in

that it leads to lower protection in the negotiations though both have no effect on the level of protection chosen in the period between rounds. There is no unambiguous dominance between the no credit rule and the *ex ante* credit rule. The *ex ante* credit rule leads to lower protection than the no credit rule in the period between rounds, but higher protection in the round. Under plausible conditions, for which there is some empirical evidence, an *ex ante* credit rule may lead to lower intertemporal average protection.

In a more general framework, where the extent of multilateral liberalization is allowed to depend on the nature of the credit rule, one aspect of the results does not change: both credit rules shift the distribution of protection at the end of multilateral negotiations in favour of those who have unilaterally liberalized. More interestingly, the proportional tariff reduction in the multilateral negotiations is larger in the presence of a credit rule. This, together with the fact that an *ex ante* credit rule also induces greater unilateral liberalization in the period between rounds, implies that such a rule is likely to lead to lower intertemporal average levels of protection in *both* countries. Hence, while the attractiveness of the *ex post* credit rule depends entirely on the desirability of its distributive consequences, the *ex ante* credit rule has the additional virtue of inducing greater intertemporal liberalization.

A crucial question is whether these rules are feasible. This depends on how the country that does not unilaterally liberalize views the alternative protection profiles of its trading partner. A credit rule that grants automatic reciprocal concessions to unilaterally liberalizing countries is not sustainable because it can inflict significant costs on the other countries that are obliged to reduce their protection – and which may end up worse off than before the original unilateral liberalization. An *ex post* credit rule would be resisted by those who have not liberalized unilaterally, because of its adverse distributional consequences. They would be obliged to liberalize more to obtain the same reductions in applied tariffs by their trading partners than in the absence of the rule.

A credit rule instituted *ex ante* is the only one that may be acceptable to all countries for non-altruistic reasons but it would require an external enforcement mechanism. Ironically, the benefits it provides to countries through inducing greater unilateral liberalization by their trading partners, may make the former content with the *status quo* and unwilling to participate in a compensating round of multilateral negotiations. The inability to make a credible commitment to participate in future negotiations on unfavourable terms may thus deprive all countries of the benefits of an *ex ante* credit rule. In this context, the dispute settlement procedures of the WTO may provide a valuable external enforcement mechanism.

“We believe that the value of autonomous trade liberalization initiatives should be recognized in the WTO negotiating process. These initiatives contribute to the expansion of world trade, and convey real benefits not only to the countries taking them but also to their trading partners. This should be clearly acknowledged in the forthcoming WTO negotiations, by crediting countries which bind their autonomous trade liberalization under WTO rules.”

Joint statement by the Heads of the IMF, World Bank and WTO, Seattle, December 1999

1. Introduction

As a new round of multilateral trade negotiations approaches, there is a strong demand for a negotiating rule which would give credit for autonomous liberalization. This paper shows that the desirability and feasibility of such a rule depends on when it is instituted. A credit rule instituted at the *beginning* of a round of negotiations has primarily a distributional effect, favouring those who have already undertaken liberalization. Such a rule is predictably opposed by those who have not liberalized. We propose instead the establishment of a credit rule at the *end* of a round of a negotiations, which creates an ex-ante assurance that any unilateral liberalization will receive credit in the next round. Such a rule would help induce and/or enhance liberalization between negotiating rounds by reducing the gains from retaining protection as negotiating currency - and leads to lower inter-temporal protection under plausible conditions. Crucially, such an ex-ante rule may be acceptable to all countries.

Not surprisingly, the demand for creating a rule to grant credit for autonomous liberalization measures assumes political visibility and support just before or during a round of negotiations.¹ During the Uruguay Round, discussions on this issue took place in both the Negotiating Group on the Functioning of the GATT System and the

¹ The possibility of granting credit for unilateral liberalization was first raised by Michalopoulos (1985) and has been linked to the issue of “coherence” between World Bank’s effort towards openness in developing countries and the trade negotiations in the WTO.

Negotiating Group on Market Access.² In the Mid-Term Review of the Uruguay Round, Ministers agreed that participants would receive appropriate recognition for the liberalization measures which they had adopted since 1 June 1986 – i.e. the beginning of the Round. The effect of this decision on the negotiated outcome in industrial goods and services is not easy to estimate, but the consequences for the agriculture negotiations were striking.³ Several countries that had liberalized recently insisted on and secured the choice of a pre-liberalization base period for calculating cuts in protective measures, with the result that there was little change in actual protection in many areas (see Ingco, 1995).

Developing countries in particular have argued that a long-term solution should be found for crediting autonomous liberalization measures within the WTO.⁴ In fact, it was reported that the Heads of the International Monetary Fund, World Bank and World Trade Organization had also expressed interest in the possibility of developing countries obtaining negotiating credit for trade policy reforms introduced under Fund or Bank programmes.⁵ However, this interest has not as yet manifested itself in the establishment of any enforceable ex-ante rules in this respect, with the exception of a nebulous commitment in the General Agreement on Trade in Services.⁶ Rather, we see the expression of demands for credit once again at the beginning of a new round of negotiations.

²See “Credit and Recognition for Autonomous Liberalization Measures”, WTO Committee on Trade and Development, WT/COMTD/W/4, 29 May 1995. All WTO documents can be accessed electronically at <http://www.wto.org/online/ddf.htm>.

³ See Finger, et al. (1997) and Fung and Ng (1998) for institutional and empirical details on these issues.

⁴ One of the clearest articulations of this view is to be found in a “non-paper” submitted by Mexico at the end of 1990, which was co-sponsored by nineteen developing countries. The need for longer term approach is recognized in the Guidelines of the Chairman of the Negotiating Group on Market Access (MTN.GNG/MA/W/13, 19 December 1991) on (a) Credit for tariff bindings and liberalization of NTMs; (b) Recognition for autonomous liberalization measures.

⁵ See “Ways to Achieve Greater Coherence in Global Policy-Making through Strengthened GATT Relationships with other Relevant International Organizations”, paragraph 32, document MTN.GNG/NG14/W/35, 20 September 1989.

⁶ GATS Article XIX:3 states that “For each round...negotiating guidelines shall establish modalities for the treatment of liberalization undertaken autonomously by Members since previous negotiations...” So there exists a prior commitment to take into account unilateral liberalization, but it is not clear how this is to be implemented in concrete terms. More importantly, the development of a clear rule is postponed to the beginning of each round.

We consider the simplest form of granting credit for autonomous liberalization: this is to proceed with negotiations as if the unilateral liberalization has not happened; so any agreed reductions are calculated from the pre-liberalization levels of protection rather than the current applied levels. Four alternatives are explored: (i) no-credit is given; (ii) a rule for giving credit is instituted at the beginning of a (new) round of negotiations ; (iii) a rule for giving credit is established at the end of a (past) round of negotiations, and (iv) a rule is set that requires *automatic* reciprocal tariff concessions to the country that unilaterally liberalizes.

Section 2 describes the basic model in which these rules are examined. Section 3 contains the body of the analysis and argues in favour of an ex-ante credit rule (the case of the automatic rule is examined in the appendix). Two sets of simplifying assumptions are made in section 3: that the extent of multilateral trade liberalization and the credit rule are exogenously given, and that the probability of a unilateral tariff reduction being reversed is zero. The implications of relaxing the first set of assumptions are discussed in Section 4, which also demonstrates the incentive problems with each rule. Section 5 examines the implications of relaxing the second assumption and discusses the distinction between applied rates of protection and legally bound rates in this context. Section 6 concludes.

2. A Simple Model

Assume a two-country two-good world, where country *A* imports good 1 and country *B* imports good 2.⁷ As in standard endogenous protection theory, the government's objective function, denoted V , is given by a combination of political-economy factors and social welfare:⁸

$$V^i(t_1; t_2) = P^i(t_1; t_2) + a^i W^i(t_1; t_2) \quad (1)$$

⁷ Given the two-country assumption, multilateral also implies bilateral.

⁸ See Hillman (1981), Grossman and Helpman (1994, 1996).

where superscript $i = A, B$ refers to countries, P reflects the contribution of political-economy factors and W the contribution of social welfare to government's objective function; the relative weight of social welfare with respect to political-economy considerations in the government's objective function is given by a ; t_1 is the tariff (or trade restriction) that country A imposes on imports of good 1 and t_2 is the tariff that country B imposes on imports of good 2. For simplicity, we limit the trade instrument to tariffs, but the analysis can easily be extended to non-tariff barriers.

Again following the literature we will assume that (i) political-economy considerations always call for a higher domestic tariff, whereas (ii) welfare considerations call for lower tariffs (at the political optimum level).⁹ More formally:

$$\frac{\partial P^A}{\partial t_1} > 0 \quad \text{and} \quad \frac{\partial W^A}{\partial t_1} < 0 \quad ; \quad \frac{\partial P^B}{\partial t_2} > 0 \quad \text{and} \quad \frac{\partial W^B}{\partial t_2} < 0 \quad (2)$$

It is convenient to assume that there are three time periods: an initial (past) period $T-1$ in which a round of negotiations takes place, an intermediate (present) period T in which the government decides on whether to reduce protection unilaterally after a change in its preferences for economic efficiency, and a final (future) period $T+1$ in which another round of negotiations takes place (motivated by the earlier change in preferences which generates potential gains from multilateral cooperation).

Again, for simplicity, we assume that governments do not discount the future (i.e. 1 dollar today is the same as 1 dollar tomorrow).¹⁰ In period $T-1$, government i 's intertemporal objective function is denoted Ψ_{T-1}^i . Had the two governments set tariffs non-cooperatively, denoted t_1^* and t_2^* , are obtained by solving simultaneously each government first order condition for maximization of its inter-temporal objective:

⁹ Note that if (i) is true, (ii) needs to be satisfied for the problem in (2) to have an interior solution with a non-negative tariff.

¹⁰ Assuming a more traditional discount factor between 0.90-0.95 will not modify our qualitative results.

$$t_1^* = \operatorname{argmax}_{t_1^A} \Psi_{T-1}^A \quad \text{and} \quad t_2^* = \operatorname{argmax}_{t_2^B} \Psi_{T-1}^B \quad (4)$$

When governments set tariffs independently, each seeks to influence the terms of trade in its favour. The tariffs set non-cooperatively are inefficient because each government inflicts a negative terms of trade externality on the other. One may challenge the importance of terms-of-trade effects for small developing countries, where credit for unilateral liberalization is probably more relevant. However, there is a significant literature that argues that terms-of-trade are also important in the case of “small” countries. As an example, Argentina and Brazil jointly have less than 1 percent of the world import market, but in some categories of the 6-digit Harmonized Systems of trade classification their import share is above 30 percent.¹¹

As convincingly argued by Bagwell and Staiger (1999) and Levy (1999), in the presence of negative externalities associated with terms-of-trade effects, there will be gains associated with reciprocal tariff reduction accomplished through multilateral trade negotiations. In such negotiations, countries exchange “concessions” in the form of mutually reduced protection. The “I will give you improved access to my market if you give me improved access to your market” form of negotiations can be seen as a way of neutralizing the adverse terms of trade effect (Bagwell and Staiger, 1999).¹²

Assume that a previous round of negotiations in period $T-1$, say the Uruguay Round, led to a set of tariffs $(t_1^U; t_2^U)$, such that $t_1^U < t_1^*$ and $t_2^U < t_2^*$.¹³ The negotiated set of tariffs $(t_1^U; t_2^U)$ are binding according to WTO rules and therefore any applied tariff chosen

¹¹ For further evidence of large terms-of-trade effects in “small” countries, see Gros (1987), Chang and Winters (1999), Olarreaga, Soloaga and Winters (1999) and Winters and Chang (2000).

¹² See Bagwell and Staiger (1999, p. 224) for a formal proof that reciprocity in terms of changes in volume of trade measured at existing world prices neutralises the terms-of-trade effects.

¹³ Negotiations lead to the internalization of the negative externality impose on other trading partners when raising its own tariff and therefore leads to a lower set of negotiated tariffs (see proposition 2 in Bagwell and Staiger, 1999).

subsequently in periods T and $T+1$ cannot be higher than $(t_1^U; t_2^U)$.¹⁴ However, countries are free to liberalize unilaterally and to set applied tariffs below their bound levels.

3. Rules for Giving Credit for Unilateral Liberalization

Why might the government of a country (say A) consider undertaking unilateral liberalization between rounds of multilateral negotiations? It could be that after the previous round of negotiations was completed, there was an increase in period T in the weight associated with social welfare in the government's objective function (e.g. because of a change of government or ideology). Then in deciding whether to unilaterally reduce protection, the government of country A weighs the gains associated with liberalization against the future terms-of-trade loss from giving up protection which could have been exchanged through reciprocity in a future round of negotiations.

This assessment is likely to be influenced by the nature of the rules for granting credit in period $T+1$ for liberalization unilaterally undertaken in period T . The four possibilities we consider are depicted in Table 1 and have been proposed by different countries. The first three have greater empirical relevance and are examined in the following sections; the fourth is dealt with in the Appendix.

For simplicity, the analysis is conducted in a two-country world, where only one country has liberalized, but can be easily extended to a setting where several countries unilaterally liberalized by normalizing the extent of liberalization by the least reforming country to be zero. Similarly, the analysis can be extended to an n -country setting.

¹⁴ Strictly, a country can increase its tariff above the bound level but then it is required to compensate its trading partners.

Table 1: Alternative approaches to granting credit for unilateral liberalization			
	Rule	Examples of application	Proposed by
(i)	No-credit granted.	The formal rule during the Uruguay Round in sectors other than agriculture. ¹⁵	Supported currently by several developed countries who have not undertaken, and are unlikely to undertake, much unilateral liberalization.
(ii)	A rule to give credit is instituted <i>ex-post</i> - at the beginning of a new round of negotiations in period $T+1$.	Characterised (to some extent) the agriculture negotiations in the Uruguay Round.	Historically, by those who had undertaken unilateral negotiations. Currently demanded by many developing countries; see for instance a recent communication to the WTO General Council by Brazil. ¹⁶
(iii)	A rule to give credit is instituted <i>ex-ante</i> - at the end of the previous round of negotiations in period $T-1$	Only visible in GATS Article XIX:3 which requires that in each future round “modalities shall be established” for the treatment of liberalization undertaken autonomously by Members since previous negotiations.	Possibly intended as part of the long-term approach to crediting unilateral liberalization sought by developing countries. ¹⁷
(iv)	A rule that requires <i>immediate</i> reciprocal tariff concessions in period T to the country that unilaterally liberalizes.	No known application.	Idea was advanced in a “non-paper” by Mexico in 1991 and re-considered in 1995 in a WTO document. ¹⁸

3.1 No-credit is given for unilateral liberalization

Following the change in its preference for economic efficiency, in period T , the government of country A now faces the following first order condition:

$$t_1^N = \operatorname{argmax}_{t_1^A} \Psi_T^A = \operatorname{argsol}_{t_1^A} \frac{\partial V_T^A}{\partial t_1^A} + \frac{\partial V_T^A}{\partial p_1^w} \frac{\partial p_1^w}{\partial t_1^A} + \frac{\partial V_{T+1}^A}{\partial t_1^A} + \frac{\partial V_{T+1}^A}{\partial p_1^w} \frac{\partial p_1^w}{\partial t_1^A} = 0 \quad (5)$$

¹⁵ However, Fung and Ng (1998) have found some evidence that credit was “informally” accorded to some countries.

¹⁶ “Preparations for the 1999 Ministerial Conferences” WT/GC/W/333, 23 September 1999.

¹⁷ See document MTN.GNG/NG14/W/35 referred to in footnote 4 above.

¹⁸ WT/COMTD/W/4, 29 May 1995 (referred above).

where, t_1^N is the inter-temporal optimal tariff, given t_2^U and the change in a ; The first term on the right hand side is the direct effect of a change on tariff on welfare in period T and the second term is the indirect effect through world prices (p_1^w and p_2^w), i.e., the “terms-of-trade effect”. Note that terms-of-trade effects affect both the welfare and the political component of the government’s objective function. The next two terms are the same effects on welfare in period $T+1$.

It is clear that the increase in preferences for economic efficiency, i.e., $da > 0$, will call for a new optimal non-cooperative tariff, t_1^N , that is smaller than t_1^* . This is due to the fact that $\partial^2 \Psi^A / \partial a \partial t_1 < 0$, given that $\partial W^A / \partial t_1 < 0$ by equation (2). However, it is impossible to say *a priori* whether $t_1^N < t_1^U$. If this were the case, then the increase in a would automatically lead to a lower tariff and the applied tariff will then be below its bound level. If $t_1^N > t_1^U$, then it is clear that a tariff reduction will not occur. A tariff increase is of course ruled out due to the fact that t_1^U is binding.

This ambiguity is shown in Figure 1, where R_{T-1}^A is the initial inter-temporal reaction function of country A before the change in preference for economic efficiency and R_T^B is country B ’s inter-temporal reaction function.¹⁹ Reaction functions after the change in country A ’s preference for economic efficiency are denoted R_{Tsmall}^A and R_{Tlarge}^A , according to whether the change in preferences is large or small. Figure 1 is drawn so that if the change in preferences is small, then the optimal tariff for country A is higher than t_1^U . Since it is not legally possible for country A to increase its tariff above the bound level, country A ’s tariff in period T will remain as its $T-1$ level, t_1^U . On the other hand if the change in preference is large, then a unilateral tariff reduction will take place and the new tariff will be t_1^N at period T . To summarise, an increase in preference for economic

¹⁹ Without loss of generality we assume here for exposition purposes that tariffs are strategic complements, i.e., country’s A optimal reaction to an increase in B ’s tariff is to increase its own tariff. The same arguments could be made assuming strategic substitutes.

efficiency may or may not lead to a unilateral liberalization, depending on the size of this change.

3.2 A rule for crediting unilateral liberalization established ex-post

Since the rule is instituted ex-post, i.e. in period $T+1$, it does not influence country A 's decision in period T (see section 3.3 below). Hence, the unilateral choice of tariff in period T will be the same as the one described in the absence of credit rule in the previous section.

3.3 A rule for crediting unilateral liberalization established ex-ante

An ex-ante credit rule implies that when country A makes its decision in period T on whether it should liberalize, it recognizes that any adverse terms of trade movement will not be forever but only for a single time period, since it will be remedied in period $T+1$. Indeed, country A will know that in the multilateral round it will only have to cut tariffs from its $T-1$ levels. Therefore, the dampening effect on the incentive for unilateral liberalization is reduced.

There are at least three reasons why this ex-ante credit rule for unilateral liberalization may be desirable. First, because the terms-of-trade loss is neutralised in future periods, the optimal tariff reduction that will occur will be larger, leading to a smaller t_1^N . Second, as a consequence of the first, there is a greater likelihood that $t_1^N < t_1^U$, and that countries will liberalize sooner as their preference for free-trade increases. Third, if the unilateral liberalization in A is sufficiently large, liberalization may also be provoked in the rest-of-the-world where there has been no change in government's preference towards free-trade.

3.3.1 Ex-ante credit leads to larger unilateral liberalization in period T

In the presence of a credit rule the optimal tariff, denoted t_1^{N*} , is such that:

$$t_1^{N*} = \underset{t_1^A}{\text{argsol}} \frac{\partial V_T^A}{\partial t_1^A} + \frac{\partial V_T^A}{\partial p_1^w} \frac{\partial p_1^w}{\partial t_1^A} + \frac{\partial V_{T+1}^A}{\partial t_1^A} = 0 \quad (5')$$

And comparing (5) and (5') it is clear that $t_1^{N*} < t_1^N$ as $\partial V_{T+1}^A / \partial p_1^w \partial p_1^w / \partial t_1^A > 0$ (the terms of trade rationale for high tariffs disappears in period $T+1$). Thus, introducing the credit rule will lead to a larger tariff reduction.

In terms of Figure 1, the change in country A 's preferences for economic efficiency in period T will lead to a larger shift of country A 's reaction function towards the left, which in turn will implicitly lead to a larger tariff reduction by country A (if $t_1^{N*} < t_1^U$).

3.3.2 An ex-ante credit rule will make early unilateral liberalization more likely

In the presence of such a credit rule, countries for which $t_1^N > t_1^U$ in the absence of the rule, may observe a reversal of this inequality. In terms of Figure 1, this is equivalent to a shift of country A 's reaction function from R_{Tsmall}^A to R_{Tlarge}^A , when comparing changes in the reaction function in the presence and absence of the ex-ante credit rule, respectively. Thus unilateral liberalization that would not have taken place in the absence of the credit rule, will be observed.

3.3.3 An ex-ante credit rule may induce unilateral liberalization in the rest-of-the world

This follows from the assumption that tariffs are strategic complements, i.e., the best reaction of country A to a tariff increase in country B is to increase its own tariff in the non-cooperative equilibria. If the immediate tariff reduction in country A , due to a move

in preferences towards economic efficiency, is sufficiently large, then it may induce country B to also reduce its own tariffs. In the absence of the credit rule country B will be facing the potential adverse terms of trade movement and it is not clear *a priori* that it will liberalize. Given the effect discussed above, a tariff reduction in country B is more likely and will be larger than it would had been in the absence of the credit rule.²⁰

Such a reduction would not happen in Figure 1 as the unilaterally optimal tariff for country B in that figure remains above the bound level, t_2^U . However as shown in Figure 2, if the shift in country A 's reaction function is sufficiently large, this will induce country B to unilaterally decrease its tariffs, which in turn will give incentives to country A to further reduce its tariff and so on, until the new non-cooperative equilibrium is reached (point “*” in Figure 2).

Thus, credit for unilateral liberalization not only brings earlier and larger liberalization in the country that experiences a move in preferences towards economic efficiency, but it may also lead to earlier and larger liberalization in the rest-of-the-world.

²⁰ This relies on the assumption of strategic complements. Had we assumed strategic substitutes, then country B will be willing to increase its tariffs; but this is impossible given that t_2^U is binding. Thus the assumption is not crucial for the “weak” result: the opposite can never happen.

3.4 A comparison of tariff profiles under alternative credit rules

Assume that the round of negotiations in period $T+1$ will lead to a percentage multilateral tariff reduction of $(1 - \alpha)$, which is exogenously given.²¹ Then, as previously discussed, imagine that the government of a particular country faces an increase in its preference for economic efficiency and decides to unilaterally liberalize between rounds. Figure 3 shows the profile of tariffs through time under three different types of rules. The black columns represent the evolution of tariffs under a no-credit rule; the grey column under an ex-post credit rule and the white column under the ex-ante credit rule.

If the objective is to achieve a greater extent of trade liberalization, then as shown by Figure 3, the ex-post credit rule is dominated by the ex-ante credit rule, as the latter induces lower protection in the period between negotiating rounds, $t_1^{N*} < t_1^N$, though both lead to identical protection in the negotiating round.

The no-credit rule is also superior to the ex-post credit rule in that it leads to lower protection in the negotiations, $\alpha t_1^N < \alpha t_1^U$, though both have no effect on the level of protection chosen in the period between rounds.

It is impossible to determine *a priori* whether the no-credit rule leads to higher inter-temporal protection than the ex-ante credit rule. The ex-ante credit rule leads to lower protection than the no-credit rule in the period between rounds, but higher protection in the round in period $T+1$. The question then, is whether the average inter-temporal level of protection is lower under an ex-ante credit rule.

Let us first consider the case where the ex-ante credit rule has induced liberalization, whereas in the absence of the credit rule, there would have been no unilateral liberalization. It is then clear that the inter-temporal average tariffs is lower under the ex-

²¹ We will relax the assumption of $(1 - \alpha)$ being exogenously given in section 4, where countries A and B will negotiate a multilateral deal that is incentive compatible for both countries (in section 3, incentive compatibility is assumed).

ante credit rule, i.e., $t_1^{N^*} + \alpha t_1^U < t_1^U + \alpha t_1^N$. In the case where the tariff reduction would have occurred in the absence of the ex-ante credit rule, as depicted in Figure 3, the inter-temporal tariff is smaller if $t_1^{N^*} + \alpha t_1^U < t_1^N + \alpha t_1^N$. This inequality can be rewritten as:

$$\alpha < \frac{t_1^N - t_1^{N^*}}{t_1^U - t_1^N} \quad (6)$$

Inequality (6) implies that the inter-temporal average tariff is smaller under the credit rule if the additional unilateral tariff reduction induced in period T by the ex-ante credit rule as a ratio of the reduction that would have taken place in its absence, is larger than the proportionate reduction in tariffs agreed during the negotiations in period $T+1$.

The likelihood of inequality (6) being satisfied in the real world is an empirical question and depends in the importance of terms-of-trade effects in the determination of tariffs. A study by Olarreaga, Soloaga and Winters (1999) has shown that even in the case of “small” countries such as Brazil and Argentina with a share of world trade below 1 percent, “terms-of-trade” effects can explain up to 30 percent of the tariff variation.²² This in turn implies that for inequality (6) to hold $\alpha < 30/70 = .43$. Recalling that in the Uruguay Round, an average tariff reduction between 25 and 33 percent was achieved (see Finger *et al.*, 1999), it seems reasonable to assume that the inter-temporal average tariff will be lower after the introduction of an ex-ante credit rule.

4. Endogenous multilateral tariff reduction and credit rules

We have so far taken the extent of multilateral liberalization as given, and also examined each rule as if it were exogenously given. Consider now the implications of relaxing these assumptions.

²² Note that for larger countries the terms-of-trade effects may represent a larger share of the tariff variation. Note that in the case where the terms-of-trade effect represent 50 percent of the tariff variation inequality (6) is always satisfied as the right-hand-side goes to 1.

What is the outcome of multilateral negotiations likely to be? It seems plausible to assume that the negotiated outcome will be efficient and lie on the contract curve, which is the locus of points of tangency of the iso-value curves.²³ We continue to assume that there are equiproportionate reductions in protection from an initial level that depends on the choice of credit rule.²⁴ These two assumptions together yield a determinate outcome to the negotiations. Geometrically, the outcome is the point where a line joining the initial protection pair to the origin (representing equi-proportionate reductions in protection) intersects the contract curve (see Figure 4).

The tariff pair $(t_1^U; t_2^U)$ can be seen as lying on the contract curve (CC) that corresponded to the governments' objective function in period $T-1$. Note that under reasonable assumptions, the contract curve necessarily has a negative slope.²⁵ The change in preferences in country A causes a shift in A 's isovalue curves and hence in the contract curve.²⁶ Since the change in preferences (i.e. the weight a) is in favour of greater efficiency, the new contract curve, $C'C'$, will lie closer to the origin, implying that there is scope for mutually beneficial reduction in levels of protection.²⁷ The precise outcome on the contract curve will depend on the credit rule: a no-credit rule will result in an outcome denoted by point X , whereas a full-credit rule will produce point Y as outcome. It is evident that a credit rule favours the country that has unilaterally liberalized, at the expense of the one that has not.

More interestingly, the proportional tariff reduction in the multilateral negotiations, α , will be larger in the presence of a credit rule than without one. To see this, note that in the

²³ As Bagwell and Staiger (1999) have demonstrated, when countries are not symmetric, the mutual benefits from reciprocal liberalization may terminate before the efficiency locus is reached. Our assumption would hold if the bargaining solution could be supported by side-payments.

²⁴ This allow us to abstract from the problems associated with imbalances in bargaining power as in Maggi (1999).

²⁵ This can be shown by deriving the contract curve as in Bagwell and Staiger (1999), solving for the tariff of country A and then taking the derivative with respect to the tariff of country B .

²⁶ There is no change in the position of the contract curve between period T (when A 's preferences change) and period $T+1$ when the negotiations take place.

presence of a credit rule, $\alpha = (t_2^U - t_2^Y) / t_2^U \equiv \alpha^C$, whereas in the absence of a credit rule, $\alpha = (t_2^U - t_2^X) / t_2^U \equiv \alpha^{NC}$. And $\alpha^C > \alpha^{NC}$, given that $t_2^Y < t_2^X$. This follows from the negative slope of the contract curve, and implies that there will be higher absolute cuts in applied protection by the non-liberalizing country B than in the absence of a credit rule. For country A , the impact of the higher α is more than offset by the credit it receives for its past unilateral liberalization, and so there is a smaller absolute reduction in applied protection than in the absence of a rule ($t_1^N - t_1^X > t_1^N - t_1^Y > t_1^{N*} - t_1^Y$).

How are the results of the previous section affected? There is a greater likelihood that an ex-ante credit rule will lead to lower intertemporal average levels of protection in both countries. In the case of country B , this is straightforward and unambiguous, since the proportional multilateral tariff reduction is larger in the presence of a credit rule and country B 's tariff in period T is unaffected. In the case of country A , there is again an ambiguity, an ex-ante credit rule implies lower protection in period T and higher protection in period $T+1$ than with a no credit rule. But since there are higher proportional cuts in period $T+1$ with a credit rule, there is a greater likelihood of a lower intertemporal average. Thus, endogenizing the extent of agreed multilateral liberalization only strengthens the presumption in favour of an ex-ante credit rule.

We have assumed so far that credit rules are exogenously given and imposed on WTO members. If the type of rule were not given, which one would be endogenously chosen by WTO members? To address this question, we use Figure 5 which presents a plausible set of B 's iso-value contours passing through the different pairs of equilibrium tariffs identified in Figure 4.

Consider first a situation with no ex-ante rule, in which A has already liberalized, so that at the beginning of period $T+1$ we are at point N in Figure 5. Negotiations based on granting A full-credit would imply a decline in B 's value function (from B_2 to B_0), which

²⁷ Again, this can be proved following Bagwell and Staiger (1999) derivation of the contract curve and then showing that after an increase in "a", the new contract curve will imply a lower tariff for country A for any given tariff of country B .

as drawn in Figure 5, could bring country B below its pre-unilateral liberalization level (i.e., $B_0 < B_1$). The government of B could then credibly refuse to participate in negotiations governed by a full ex-post credit rule, and no multilateral liberalization would be possible under such a rule. Thus, a full-credit rule is an unlikely outcome if countries need to agree to its introduction, and their decisions are not based on altruism.

Nevertheless, the scope for mutually beneficial multilateral tariff reductions, caused by a change in preferences in at least one country, could be realisable on the basis of a no-credit rule. So, if the only alternative to a full-credit rule was a no-credit rule, then both, A and B would accept it. More generally, “no-credit” and “full-credit” lead to two extreme outcomes: B would be better off if A were not given any credit for the unilateral liberalization it has already undertaken, and A would be better off if it received full-credit. If there remains scope for mutually beneficial negotiations and there are no large asymmetries in bargaining strength, a cooperative solution could reasonably result in A receiving partial credit for its unilateral liberalization, i.e. the basis for calculating cuts in its tariffs would lie between t_1^N and t_1^U . If this partial credit were rationally expected by A in period T , then it would influence its decision and we may observe greater unilateral liberalization without an explicit prior rule.

Would a full-credit ex-ante rule still be attractive for both countries? Probably yes. To see this, consider how A and B would view the consequences of such a rule being instituted in period $T-1$ given that one (or both) of them may witness an increase in period T in the weight attached to social welfare.²⁸ If the country is subject to such a change itself, it would clearly be better off with such a rule rather than without; because it could then make its optimum choices without being constrained by the fear of adverse terms of trade movements. If its trading partner is subject to a change, then the consequences of a rule are ambiguous: a rule delivers greater liberalization abroad in period T (value of B_4 rather than B_2), but a relatively less favourable outcome in period $T+1$ (value of B_0

²⁸ The interesting situations are the asymmetric ones where only one country is subject to such a change.

rather than B_3). It is possible that overall B would gain, and therefore the ex-ante rule may be accepted by both A and B in period $T-1$.

However, there is an implementation problem with the ex-ante credit rule: the multilateral tariff reductions stipulated in period $T+1$, would require B , the non-liberalizing country, to move to a lower iso-value curve. In the absence of an enforcement mechanism or other inducements (e.g. reputational considerations), B would be tempted to default. If this were rationally expected by A , then the ex-ante credit rule would not influence A 's liberalization decision in period T . Thus, the inability to credibly commit to participate in future negotiations on unfavourable terms, would deprive B of overall gains.

The dispute settlement mechanism of the WTO may provide the necessary enforcement mechanism. In the absence of credible enforcement, there may be scope for sophisticated "leadership" behaviour by A whereby it would choose its level of unilateral liberalization taking into account not only the future terms of trade effects, but B 's preferences. For instance, it may anticipate that undertaking a large degree of unilateral liberalization in period T would make B so content with the status quo in period $T+1$ that it would be unwilling to participate in multilateral negotiations. It may then be in country A 's interest to reduce the extent of its unilateral trade liberalization in period T to make the multilateral deal viable. This would allow country A to undertake part of its liberalization within the multilateral context with matching reductions by its trading partners.

5. Distinguishing between changes in bound and applied rates

Several WTO Members have argued that negotiating credit can only be given if they can be assured that the policy reforms will not be reversed, i.e. if they are offered as bindings under the WTO.²⁹ At the same time, demands for credit for autonomous liberalization

²⁹ See "Credit and Recognition for Autonomous Liberalization Measures", WTO Committee on Trade and Development, WT/COMTD/W/4, 29 May 1995.

have also been often accompanied by demands for credit for bindings per se.³⁰ What are the implications of the distinction between bound and applied rates for our analysis?

To appreciate the distinction, consider country *C* negotiating in period $T+1$ with two other countries, *A* and *B*. Say *B* has an applied and bound rate of tariff set at 20%, and *A* has a bound rate set at 20%, which is higher than the applied rate which has been unilaterally reduced to 10% in period T . Which country would *C* be more willing to pay for a reduction in the bound rate to 10%? Country *B* would seem to be the obvious answer, because a reduction in its bound rate would also imply a reduction in its applied rate. But would *C* be willing to pay *A* anything at all? The value of the reduction of country *A*'s bound tariff to the applied level depends on how likely *A* is to increase its tariff in the future beyond the current applied level. If the probability of *A* increasing its tariff is zero, then the reduction of the bound tariff to the applied has no value and countries would start negotiating from applied levels. This is the assumption we implicitly used in this paper. However, if the probability of *A* increasing its tariff beyond the applied level is positive, then the reduction of the bound tariff to the applied level will have some value. As Francois and Martin (1999) have argued, even bindings above applied rates are valuable because they reduce the expected value of protection by truncating part of the distribution of protection. This implies that the starting point for negotiations is a tariff somewhere between the applied and the bound rate.

But the crucial point is that no rule is needed for granting credit for a binding undertaken in the context of the negotiations because the payment for such a binding can be extracted anyway. There is in effect a "spot-market" for bindings in the negotiating period $T+1$. The real issue is whether credit can be obtained for autonomous liberalization in period T by creating an inter-temporal market for changes in applied rates. That is, whether *C* could be obliged to pay *A* as much as it pays *B* for a reduction in bound rates. This raises the question of whether a member cannot extract such credit simply by threatening to raise the applied rate to the previous level. Whether this is possible depends on the

³⁰ See Guidelines of the Chairman of the Negotiating Group on Market Access (MTN.GNG/MA/W/13, 19 December 1991) on (a) Credit for tariff bindings and liberalization of NTMs; (b) Recognition for autonomous liberalization measures.

credibility of the threat. If the probability of unilateral liberalization being reversed tends to one, then there is no need for an explicit credit rule. In our framework, where the probability of A increasing its protection is zero, then unilateral liberalization in period T can be seen as revealing governments' true preferences and therefore an explicit credit rule is required.

6. Concluding remarks

Is it desirable to have a credit rule for unilateral liberalization undertaken between negotiating rounds? If such a rule were established at the beginning of a new round of negotiations it would only have distributional effects, favouring those who have already liberalized.³¹ An argument to institute such a rule must be based entirely on the desirability of these distributional effects.³² And its feasibility depends on the generosity of those who would be adversely affected - the countries that have not liberalized. We propose instead the establishment of a credit rule at the end of a round of negotiations. Such a rule would induce (greater) unilateral liberalization between rounds, and could lead to lower inter-temporal protection and benefits for all countries. For these reasons, the implementation of such a rule would not rely on altruism.

One point in defence of a rule being created for past liberalization is that this would only make explicit what was rationally expected anyway, and this expectation did in fact positively influence individual country decisions to liberalize between rounds. A related view is that since trade negotiations are a repeated game, explicit rules are not necessary – it is sufficient for countries to create a reputation for generosity ex-post vis-a-vis

³¹ Since negotiations are not instantaneous but may take place over a long period of time, it could be argued, of course, that agreeing on a rule at the beginning of the negotiations could help induce unilateral liberalization during the negotiating period. But then such a rule should *only* credit liberalization undertaken during the negotiating period and not that undertaken before negotiations began.

³² There is a related argument for giving credit ex-post for unilateral liberalization. This is when a particular country has gone so far in reducing its protection that it cannot induce others to negotiate reductions in their protection. If it were possible to institute an ex-post credit rule in these circumstances, then it would serve the useful purpose of providing the liberalizers with negotiating currency. However, an act of such political generosity would put in question the very rationale for trade negotiations.

liberalization undertaken unilaterally. Finger, et al. (1997) and Fung and Ng (1998) provide some support for this view by demonstrating that the unilateral liberalizers like Mexico did receive substantial concessions during the Uruguay Round. However, Fung and Ng (1998) also show quite persuasively that the correlation between concessions given and concessions received during the Uruguay Round was positive and highly significant.

Definite evidence is hard to come by, but two facts might be revealing. In agriculture, where no clear ex-ante rule for giving credit was created – though the Uruguay Round saw the creation of such a rule - there has been very little unilateral liberalization since the Uruguay Round. On the other hand, in services, the only area where there was an explicit (though somewhat nebulous) commitment ex-ante to give credit in the next round for unilateral liberalization, there has been substantial liberalization since the Uruguay Round.

Appendix: Automatic credit for unilateral liberalization

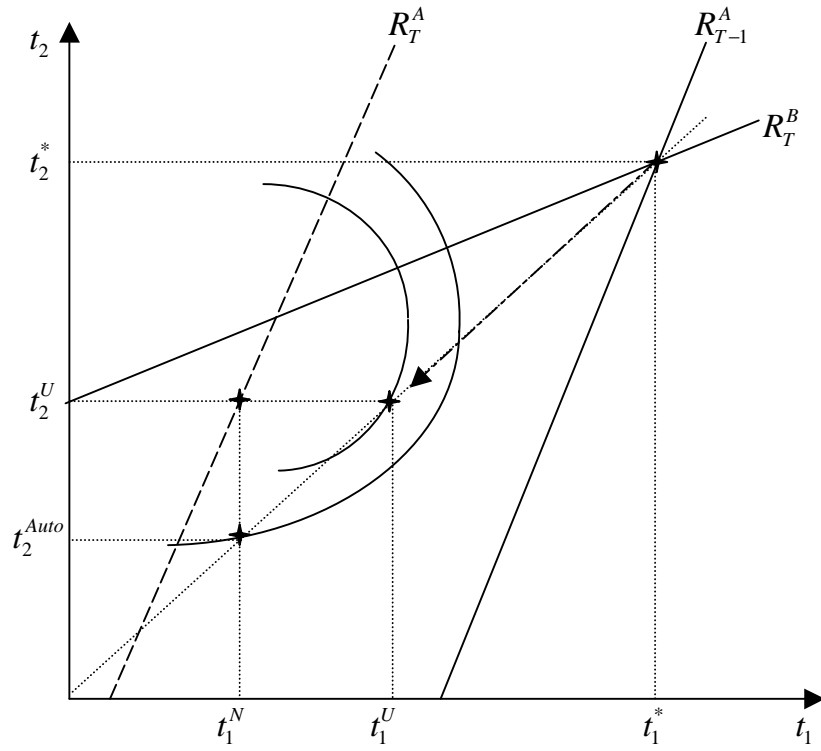
In the non-paper circulated by Mexico during the Uruguay Round, and later in a Note by the Secretariat to which we referred earlier, the idea of automatic credit for unilateral liberalization was advanced. Trading partners would have to immediately offer tariff concessions in period T to the country that is liberalizing unilaterally.³³ At first sight, this may seem a desirable rule, as it would not only neutralize the terms-of-trade loss in $T+1$, but also in period T . This in turn would lead to earlier and larger unilateral liberalization as discussed above, which other countries would be required to match.

However, as shown in Figure A, the automatic credit rule may not be sustainable, because governments that are obliged to automatically liberalize may end up worse off than before the unilateral liberalization of their partner. The reason is that if the automatic liberalization neutralises the terms-of-trade effect (so no problem there), it also imposes a tariff revenue loss and more importantly a loss in terms of political support. These two effects may reduce the value of the government's objective function. Figure A illustrates this. After country A 's unilateral liberalization, country B automatically matches the tariff reduction. The new tariffs are then $\{t_1^N; t_2^{Auto}\}$. Iso-value curves show that the value of the government's objective function of country B at $\{t_1^N; t_2^{Auto}\}$ is lower than its value at $\{t_1^U; t_2^U\}$. Thus, the automatic credit rule may induce a high political cost in country B at period T , and would not be acceptable for B .

Thus, this type of rule would never be an endogenous choice, as it has the same incentive problems at period T as the ex-post credit rule at period $T+1$, discussed in section 4.

³³ These tariff concessions would have to be kept in place as long as the unilaterally liberalizing country keeps its tariff reductions in place (paragraph 17 of WT/COMTD/W/4).

Figure A: Immediate credit inducing rest-of-the-world to be worse off



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Figure 1: Unilateral liberalization and changes in preferences for economic efficiency

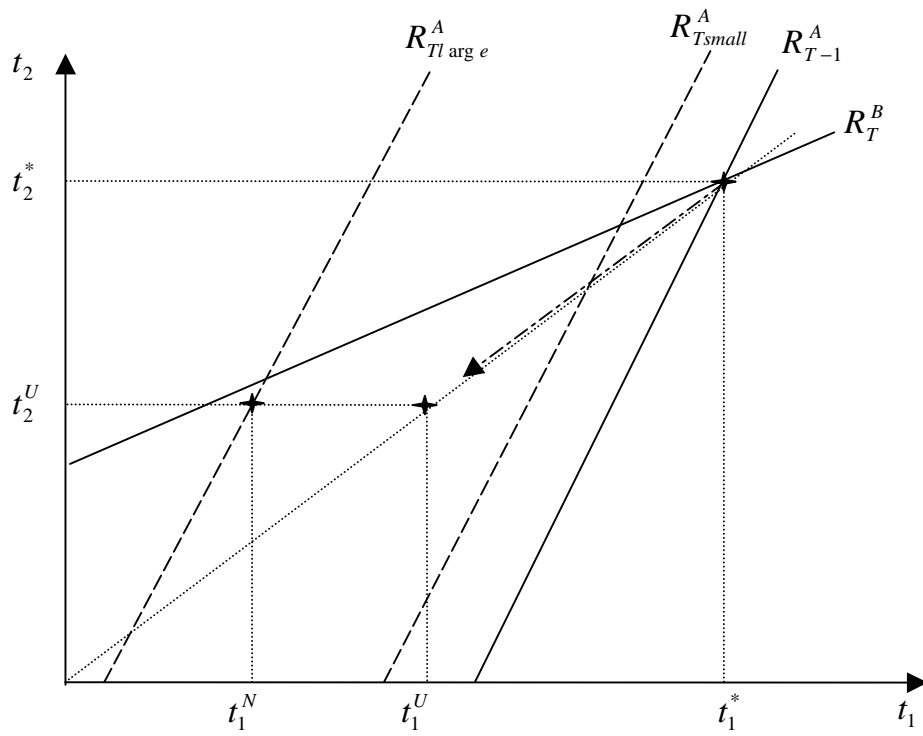


Figure 2: Inducing liberalization in the rest-of-the-world

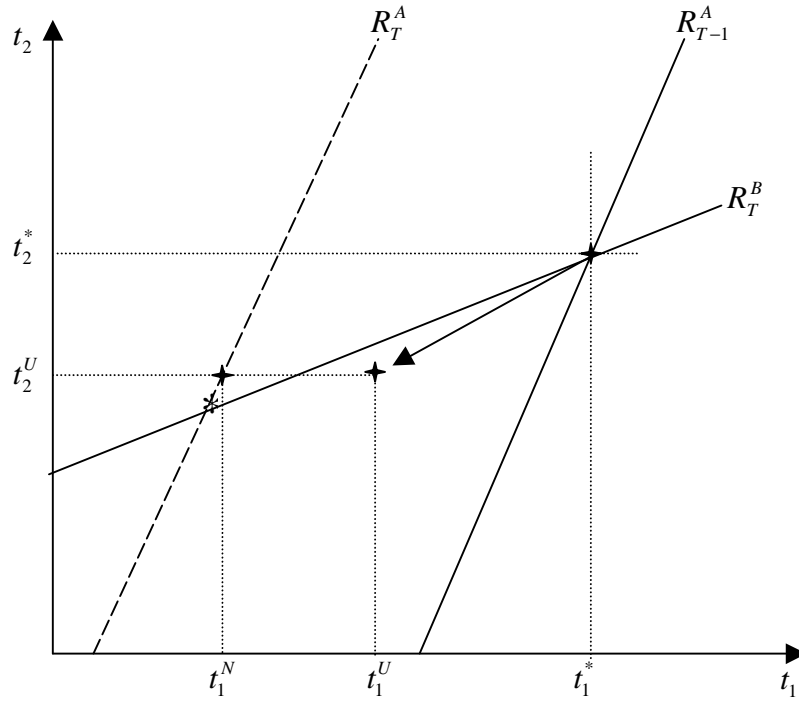


Figure 3: Comparing tariff profiles under different rules

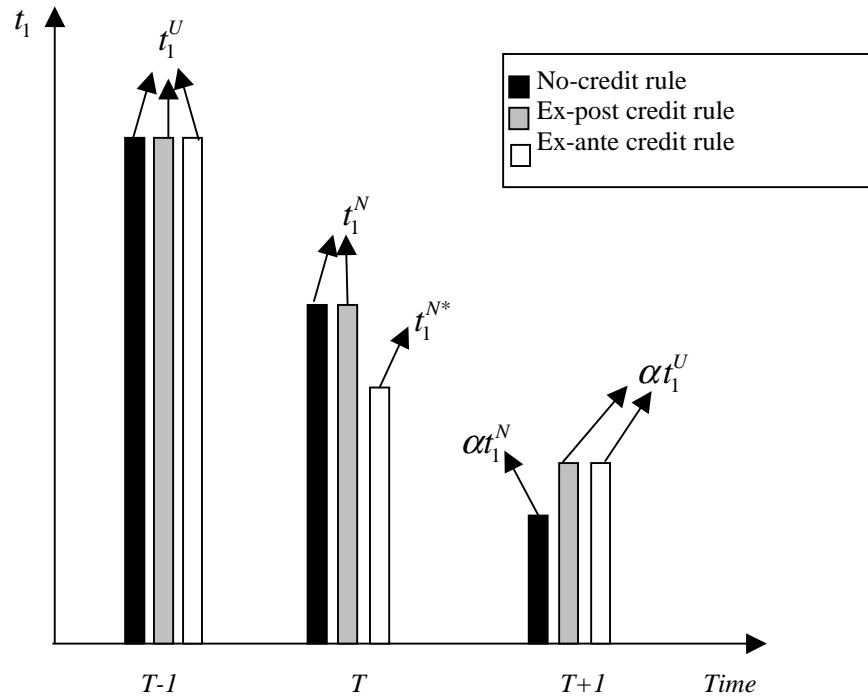


Figure 4: Endogenising the extent of Multilateral Tariff Reduction

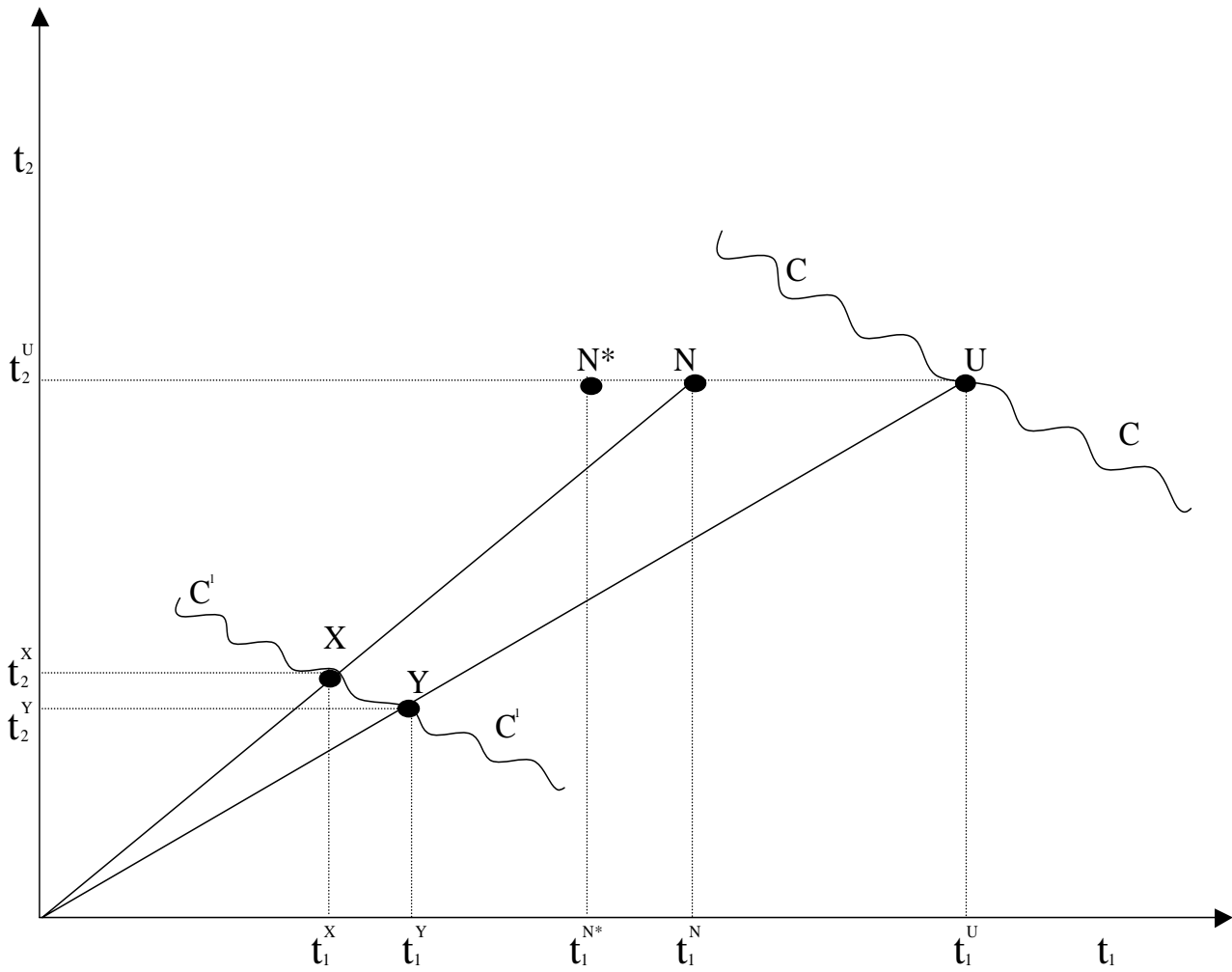


Figure 5: Endogenising the type of credit rule

